

YEAR BOOK

2020-2021

**PAKISTAN ACADEMY
OF SCIENCES - 2022**



YEAR BOOK 2020-2021

Pakistan Academy of Sciences
2022

ISBN

978-969-8223-31-1

**Composed &
Edited by:**

Dr. Irum Iqrar
Editor, Pakistan Academy of Sciences

© 2022 Pakistan Academy of Sciences

Publisher:

Pakistan Academy of Sciences
3 – Constitution Avenue
Sector G-5/2, Islamabad

Printer:

Graphics Point

Designer:

Ali Ammad Sipra

FOREWORD

Dr. Khalid Mahmood Khan

President, Pakistan Academy of Science



Pakistan Academy of Sciences (PAS) stands as the largest national constellation of scientists, academicians and professionals in the domain of S&T. At present, PAS has 82 Local Fellows, 34 Foreign Fellows and 26 Members. Over the past 6 decades, the Academy has emerged as a non-governmental and non-political supreme scientific body of distinguished local and foreign scientists and academicians. Its Fellows and Members, with brilliant careers spread over a considerable period, are elected through a long drawn process. They have the capacity and capability both individually and collectively to develop the Academy as a pool of scientific expertise to render independent opinion in matters where science can be of any assistance to the policy makers. Also, the Academy is regularly acknowledging the efforts of Pakistani academicians, scientists, engineers, medical professionals, biotechnologists, etc. by rewarding them with honors and awards in terms of Gold Medals, Certificates and Cash Prizes. Till date some 367 academicians and researchers have received such awards in 17 different categories. Pakistan Academy of Sciences is also collaborating with the other Academies by signing of 20 MoUs with International Science Academies worldwide to strengthen its capacity for international collaboration regarding joint research activities and projects.

This biennial progress report (Year Book: 2020–2021) summarizes the salient achievements of the Pakistan Academy of Sciences during this period. As in the past, the Pakistan Academy of Sciences (PAS) has remained quite active during the period 2020-2021 and its Fellows and Members remained engaged in research activities at national level and pursued a number of initiatives with international academies such as ANSO and AASSA. During this period, the Academy Fellows and Members executed some 18 research projects. In spite of the COVID-19 Pandemic, the Academy was able to conduct a large number of on-line international and national level Webinars, conferences, workshops and lectures. Among these, the noteworthy events were the AASSA-PAS Webinar Series (I - IV) /Hybrid Workshop-2021 titled: “Pandemic Preparedness: Science and Countermeasures” and the International Conference on Biosciences (ICBS-2021). In addition, ANSO (Alliance of International Science Organization in the Belt and Road Region) approved two collaborative research projects one related to “Food Security”



submitted by a PAS Fellow and the other related to “Molecular detection and characterization of bat-borne viruses from Pakistan” submitted by a PAS Member.

There have been some landmark achievement of the Academy during the period, 2020-2021 that are worth mentioning. The first of these achievements was the formal administrative approval of the PSDP Concept Proposal (PC-I) regarding upgradation and capacity building of Pakistan Academy of Sciences by the Planning Commission (GoP) on Jan 23, 2020 for a period of 36 months. This PC-I was submitted by the Academy to the Planning Commission (GoP) through the Higher Education Commission (HEC) and it resulted in an award of some 810.272 Million Pak Rupees. Under this PSDP Project, the Academy has upgraded its secretariat through: (i) establishment of “Scientific Advice to Government (SAG) Unit” or “Policy Unit”, (ii) creation of a fully equipped video conferencing facility, and (iii) creation of offices for PAS Fellows and for Human Resources for the Policy Unit; and (iv) Upgradation of the Information Communication Technology (ICT) systems (mainly networking facilities, servers, computers and printers, etc.), etc. Upon the request of concerned ministries of the Government of Pakistan (GoP), the PAS Policy Unit contributed towards review and upgradation of the National Climate Change Policy (NCCP)-2021 and the National S&T and Innovation Policy-2022. The Policy Unit also compiled a Comprehensive Report on Groundwater Database for Pakistan for the Ministry of Water Resources for presentation at the meeting of the Senate Standing Committee on Water Resources on Nov. 4, 2021. The Auditorium and the Meeting Room equipped with state of the art video conferencing facilities were effectively utilized for hosting of a number of webinars and on-line meetings, etc. This has improved the linkage of the Academy with other national and worldwide academies and institutions for exchange of expertise and information. With the installation of servers and improvement in the networking system, some operations are now working as a centralized system in the Academy. The video conferencing and webinar facilities are also being provided and shared with other scientific and academic institutions through collaborative ventures. These have also helped in strengthening links with foreign scientists and academicians during scientific proceedings. The Academy has also been able to transform its proceedings namely, PPAS-A & PPAS-B into flagship science journals. The electrical power system in the PAS secretariat has been improved through installation a 15kW Solar Power Generator to assist continuity of conference, meeting or webinar activities at the Secretariat during electrical load shedding. The second landmark achievement was installation of an escalator/lift (capacity two persons) in the lobby of the Academy’s Secretariat block. The third landmark achievement was the inauguration of the Founding Office of the Academy at the School of Physical Sciences, Quaid-i-Azam Campus, University of The Punjab on Dec., 02, 2021 jointly, by myself and Prof. Dr. Niaz Ahmad Aktar, Vice Chancellor of University of the Punjab. A large number of PAS Council Members, PAS Fellows and University Academia attended the inaugural ceremony. Federal Secretary, Ministry of Science & Technology (MoST) along with his two senior colleagues (Joint Secretary, MoST and Director Policy Wing-MoST) visited the Academy to learn about the aims and objectives of the Academy and prospects of collaborative efforts by PAS and MoST for science, technology and innovation based development in the country. During the period of

report (2020-2021), a number of foreign delegations also visited the Academy. These included visit of 3 Member delegation each of Yunnan Academy of Sciences and Technology Development and Embassy of the Republic of Uzbekistan. The Ambassador of the Republic of Bulgaria also visited the Academy headquarters to explore collaboration. Further, for the first time, the “organogram of Pakistan Academy of Sciences” has been included in the current biennial progress report.

It is also planned that alongside honoring single scientists for their achievements and contributions to the cause of science and technology, the Academy may consider idolization of scientific institutions on the basis of their innovative R&D work specifically w.r.t. and resolve of industrial problems, and/or upgradation of industrial processes and designs for quality products leading to socioeconomic development. Those scientific institutions which attain international recognition may then be listed in Academy’s Honor List.

Before ending this note, I would like to express my deepest sorrow over the sad demise of Academy Fellows who died around the period 2020-2021. These include, Lt. Gen. (R) Muhammad Saleem, Prof. Dr. Muhammad Ashfaq, Dr. M. Aslam and one of our national hero, a world renowned nuclear scientist Dr. A. Q. Khan (who breathed his last on October 10, 2021). May their souls rest in eternal peace. A reference for Dr. A. Q. Khan was held in the Academy which was attended by a large number of scientists and academicians.

In the end, I must acknowledge that the Pakistan Academy of Sciences is among the widely recognized Academies internationally, especially in the South Asian region because of its various collaborative programs. As an academician and a scientist, I have the conviction in the concept that there is always a room for improvement. I am confident that with the constant support and scientific contributions of our Fellows and Members, the Academy shall continue to rise to even greater heights.

I am most grateful to the Higher Education Commission for supporting the Academy and to all the Fellows and Members and the Staff of the Academy without whose active support and participation, all this would not have been possible.

CONTENTS

	FOREWORD	i
1.	INTRODUCTION	1
2.	OFFICE BEARERS OF THE ACADEMY	2
	2.1. Founding Fellows	2
	2.2. Former Presidents	2
	2.3. Former Secretaries General	2
	2.4. Former Secretaries	2
	2.5. The 2021 - 2023 Council of the Academy	3
	2.6. The 2018 - 2020 Council of the Academy	4
3.	SOME SALIENT HISTORICAL GLIMPSES	5
4.	CHARTER OF THE PAKISTAN ACADEMY OF SCIENCES	19
5.	FINANCIAL ASSISTANCE TO THE ACADEMY	29
6.	PUBLICATIONS OF THE ACADEMY	31
	6.1. Proceedings of the Pakistan Academy of Sciences	31
	6.2. HEC Journal Recognition System	36
	6.3. Cross Ref Annual Membership for Digital Object Identifier (DOI)	36
	6.4. Newsletter of the Pakistan Academy of Sciences	36
	6.5. Proceedings of the AASSA-PAS Webinar Series / Hybrid Workshops 2021 on "Pandemic Preparedness: Science and Countermeasures"	37
	6.6. Other Publications of the Academy	38
7.	2020 - 2021 ACTIVITIES OF THE ACADEMY	46
	7.1. Projects Executed	46
	7.2. Conferences, Seminars, Workshops, Webinars, Symposium and Meetings Organized	47
	7.3. Visit of Federal Secretary, Ministry of Science and Technology (MoST) to Pakistan Academy of Sciences	57
	7.4. Inauguration of Pakistan Academy of Sciences Lahore Office in the University of Punjab, Lahore	57
	7.5. PAS Chapters Activities	59
	7.6. Scientific Advice to Government (SAG) Unit / PAS Policy Unit at the Pakistan Academy of Sciences	62
	7.7. International Liaison	66
	7.8. Visit of Foreign Delegations to the Academy	68
	7.9. International Collaborative Projects/Events	69



8.	GOLD MEDALS AND AWARDS	82
8.1.	PAS Open Gold Medal	83
8.2.	PAS Gold Medal	89
8.3.	PAS Gold Medal (under 40 Years)	98
8.4.	PAS/Infaq Foundation Agha Hasan Abedi Gold Medal	99
8.5.	PAS/Infaq Foundation Agha Hasan Abedi Prize for Best Scientist of the Year (Gold Medal and Rs. 200,000/-)	102
8.6.	Dr. M. Raziuddin Siddiqi Prize for Scientist (under 40 Years)	102
8.7.	TWAS Cash Prize (under 40 Years)	104
8.8.	Dr. M.N. Azam Prize for Pakistani Scientists in Computer Science (Software)	106
8.9.	PAS-COMSTECH Prize in Computer Science (IT)	107
8.10.	Dr. Atta-ur-Rahman Gold Medal in Chemistry for Scientists (under 40)	108
8.11.	Distinguished Scientist of the Year Award	109
8.12.	Meritorious Service Award (Special Medal)	110
8.13.	World Science Day for Peace and Development Award	110
8.14.	Dr. Shah Jahan Prize for Scientists (under 40)	111
8.15.	TWAS Abdus Salam Prize in Basic Sciences for Scientists (under 40)	111
8.16.	TWAS Salimuzzaman Siddiqui Prize in Applied Science & Technology for Scientists (under 40)	112
8.17.	Prof. Zabta K. Shinwari Gold Medal in Biotechnology for Scientists (under 50)	112
8.18.	Abdus Salam Prize in Basic Sciences for Scientists (under 40)	113
8.19.	Salimuzzaman Siddiqui Prize in Applied Science & Technology	113
9.	PROFILES OF FELLOWS	117
10.	ADDITIONAL FELLOWS	171
11.	DECEASED FELLOWS OF THE ACADEMY	171
12.	PROFILES OF FOREIGN FELLOWS	175
13.	ADDITIONAL FOREIGN FELLOWS	193
14.	DECEASED FOREIGN FELLOWS	193
15.	MEMBERS OF THE ACADEMY	195

1. INTRODUCTION

It is generally recognized that any progressive country, which aspires to occupy a befitting Place in the comity of nations, encourages the establishment of a supreme scientific organization, usually designated as the “Academy of Sciences” devoted to the promotion of science and its applications for the general welfare of humanity. While these organizations may not carry out actual researches, they do provide a forum for the advancement of scientific research, popularization of science, motivation of scientists and technologists, and encouraging and promoting studies in new areas of S & T.

As utmost importance is attached to the membership of such an academy, only scientists of the highest merit, who have made outstanding contributions to the advancement of scientific knowledge, are elected its Fellows. The Academy is regarded, by the public and the government, as a repository of the highest scientific talent available in the country, and is generally supported and consulted in all matters relating to scientific education, research and development.

The idea of establishing Pakistan Academy of Sciences was mooted in November 1947 at the 1st National Educational Conference held in Karachi. Subsequently, nine eminent scientists were elected as Founding Fellows of the proposed Academy. One of the Founding Fellows, Dr. M. Raziuddin Siddiqi, has drafted Charter of the Academy which was approved. The Pakistan Academy of Sciences was inaugurated by the then Prime Minister of Pakistan, Khwaja Nazimuddin, on 16th February 1953 during 5th Pakistan Science Conference in Lahore. On 19th February 1953, the Founding Fellows elected Prof. M. Afzal Hussain as President and Dr. M. Raziuddin Siddiqi as Secretary of the Academy.

The Academy is a non-governmental and non-political supreme scientific body of distinguished scientists in the country. The Government of Pakistan has given the consultative and advisory status to the Academy “on all problems relating to the development of scientific efforts in the country”, and “generally on such matters of national and international importance in the field of science as may be referred to the Academy”. The affairs of the Academy are regulated by its Charter and Bye-Laws approved by the Fellows.

The Academy is governed by a Council that includes its President, two Vice Presidents, Secretary General, Associate Secretary General and Treasurer. At present, there are 82 Fellows, 34 Foreign Fellows, and 26 Members, who have been elected by the General Body. The President of the Academy for the term 2018-2020 was Prof. Dr. M. Qasim Jan, *HI, SI, TI*. The President of the Academy for the term 2021-2023 is Prof. Dr. Khalid Mahmood Khan, *SI*.



2. OFFICE BEARERS OF THE ACADEMY

2.1. Founding Fellows (February 16, 1953)

- | | | | |
|----|---------------------------|----|-----------------------|
| 1. | Prof. M. Afzal Hussain | 6. | Dr. M Sharif |
| 2. | Dr. Nazir Ahmad | 7. | Dr. M. Qudart-i-Khuda |
| 3. | Dr. Bashir Ahmad | 8. | Dr. Hamid Khan Bhatti |
| 4. | Dr. Salimuzzaman Siddiqui | 9. | Dr. M. Ishaque |
| 5. | Dr. M. Raziuddin Siddiqi | | |

2.2. Former Presidents

- | | | |
|-----|--|----------------------|
| 1. | Prof. M. Afzal Hussain | 19.02.53 to 10.01.56 |
| 2. | Dr. Nazir Ahmad | 10.01.56 to 21.01.61 |
| 3. | Prof. Dr. M. Raziuddin Siddiqi, <i>HI, SI</i> | 12.01.61 to 14.11.67 |
| 4. | Prof. Dr. Salimuzzaman Siddiqui, <i>FRS, HI, SI</i> | 14.11.67 to 20.12.69 |
| 5. | Prof. Dr. M. Qudrat-i-Khuda | 20.12.69 to 13.03.72 |
| 6. | Prof. Dr. H.K. Bhatti | 13.03.72 to 08.01.74 |
| 7. | Ch. M. Afzal | 08.01.74 to 20.04.78 |
| 8. | Prof. Dr. M.A. Kazi | 20.04.78 to 22.10.84 |
| 9. | Prof. Dr. M. Raziuddin Siddiqi, <i>HI, SI</i> | 22.10.84 to 02.12.86 |
| 10. | Prof. Dr. M.A. Kazi | 02.12.86 to 07.07.88 |
| 11. | Prof. Dr. M.D. Shami, <i>SI</i> | 07.07.88 to 16.12.92 |
| 12. | Dr. Amir Muhammed | 16.12.92 to 31.12.96 |
| 13. | Dr. A.Q. Khan, <i>NI & Bar, HI</i> | 01.01.97 to 31.12.02 |
| 14. | Prof. Dr. Atta-ur-Rahman, <i>FRS, NI, HI, SI, TI</i> | 01.01.03 to 31.12.06 |
| 15. | Dr. Ishfaq Ahmad, <i>NI, HI, SI</i> | 01.01.07 to 31.12.10 |
| 16. | Prof. Dr. Atta-ur-Rahman, <i>FRS, NI, HI, SI, TI</i> | 01.01.11 to 31.12.14 |
| 17. | Dr. Anwar Nasim, <i>SI</i> | 01.01.15 to 31.12.17 |

2.3. Former Secretaries General

- | | | |
|-----|--|----------------------|
| 1. | Prof. Dr. M. Raziuddin Siddiqi, <i>HI, SI</i> | 17.03.79 to 22.10.84 |
| 2. | Prof. Dr. M.D. Shami, <i>SI</i> | 22.10.84 to 07.07.88 |
| 3. | Prof. Dr. M.M. Qurashi, <i>SI</i> | 07.07.88 to 16.12.92 |
| 4. | Prof. Dr. M.D. Shami, <i>SI</i> | 16.12.92 to 31.12.96 |
| 5. | Prof. Dr. Iftikhar A. Malik, <i>HI (M), SI (M), SI</i> | 01.01.97 to 31.12.98 |
| 6. | Prof. Dr. M.D. Shami, <i>SI</i> | 01.01.99 to 31.12.02 |
| 7. | Prof. Dr. Khalid Mahmood Khan, <i>SI</i> | 01.01.03 to 31.12.06 |
| 8. | Prof. Dr. Iftikhar A. Malik, <i>HI (M), SI (M), SI</i> | 01.01.07 to 27.05.08 |
| 9. | Prof Dr. M. Qasim Jan, <i>HI, SI, TI</i> | 13.06.08 to 31.12.10 |
| 10. | Prof. Dr. G. A. Miana, <i>SI</i> | 01.01.11 to 31.12.12 |
| 11. | Dr. Anwar Nasim, <i>SI</i> | 01.01.13 to 31.12.14 |
| 12. | Prof. Dr. Zabta Khan Shinwari, <i>SI, TI</i> | 01.01.15 to 31.12.17 |

2.4. Former Secretaries

- | | | |
|----|---|----------------------|
| 1. | Dr. M. Raziuddin Siddiqi, <i>HI, SI</i> | 19.02.53 to 12.01.61 |
| 2. | Dr. M.O. Ghani | 12.01.61 to 14.11.67 |
| 3. | Dr. S.D. Chaudhri | 14.11.67 to 20.12.69 |
| 4. | Dr. M. Raziuddin Siddiqi, <i>HI, SI</i> | 20.12.69 to 17.03.79 |

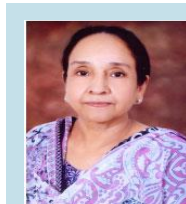
2.5. The 2021 - 2023 Council of the Academy



Prof. Dr. Khalid Mahmood Khan
SI
President



Prof. Dr. Riaz Hussain Qureshi
Vice President



Prof. Dr. Bina Shaheen Siddiqui
SI, TI
Vice President



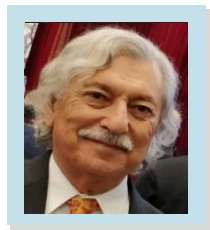
Prof. Dr. Tasawar Hayat
HI, SI, TI
Secretary General



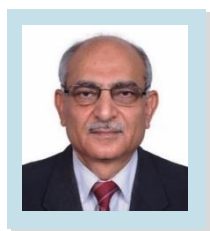
Prof. Dr. Amin Badshah
TI
Treasurer



Prof. Dr. Ikram-ul-Haq
SI
Associate Secretary General



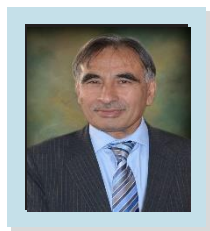
Prof. Dr. M. Qasim Jan
HI, SI, TI
Past President



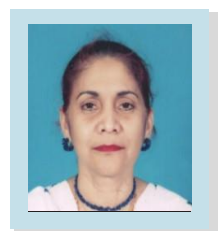
Prof. Dr. Anwar-Ul-Hassan Gilani
HI, SI
Member



Prof. Dr. Mohammad Perwaiz Iqbal
SI
Member



Prof. Dr. M. Rasul Jan
SI
Member



Prof. Dr. Azra Khanum
TI
Member



Prof. Dr. Fazal Ahmad Khalidi
SI
Secretary, Punjab Chapter



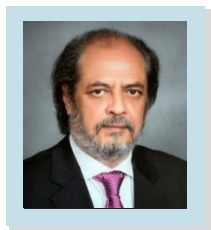
Prof. Dr. Mohammad Wasay
Secretary, Sindh Chapter



Prof. Dr. Khan Bahadar Marwat
SI
Secretary, KP Chapter



Prof. Dr. Hafeez R. Hoorani
SI
Member (MoST)



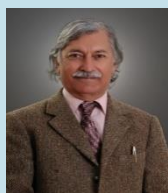
Prof. Dr. Hassan Amir Shah
Member (MoE)



Prof. Dr. Muhammad Arslan
SI
Member (HEC)



2.6. The 2018 - 2020 Council of the Academy



Prof. Dr. M. Qasim Jan
HI, SI, TI
President



Prof. Dr. Kauser A. Malik
HI, SI, TI
Vice President



Prof. Dr. M. Ajmal Khan (Late)
SI
Vice President



Dr. Anwar Nasim
SI
Past President



Prof. Dr. M. Aslam Baig
HI, SI, TI
Secretary General



Prof. Dr. A. R. Shakoori
TI
Associate Secretary General



Prof. Dr. G. A. Miana
SI
Treasurer



Prof. Dr. Asghari Maqsood
SI
Member



Prof. Dr. M. Waheed Akhtar
TI
Member



Prof. Dr. Saqib Ali
Member



Prof. Dr. Viqar Uddin Ahmad (Late)
HI, SI
Member



Prof. Dr. Khalid M. Khan
SI, TI
Secretary, Sindh Chapter



Prof. Dr. Iqar Ahmed Khan
SI
Secretary, Punjab Chapter



Prof. Dr. M. Asif Khan
TI
Secretary, KP Chapter



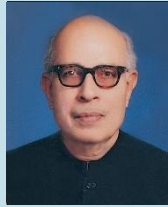
Prof. Dr. Masoom Yasinzai
Secretary, Balochistan Chapter



Dr. Muhammad Iqbal
SI, TI
Member (MoST)



Prof. Dr. Zabta K. Shinwari
SI, TI
Member (MoE)



Prof. Dr. M. D. Shami
SI
Member (HEC)

3. SOME SALIENT HISTORICAL GLIMPSES

Inaugural Ceremony of the Pakistan Academy of Sciences in 1953



Left to Right: Dr. M. Sharif, Dr. H.K. Bhatti, Dr. M. Ishaq, Dr. M. Raziuddin Siddiqi, Hon. Khawaja Nazimuddin (Prime Minister of the Islamic Republic of Pakistan), Dr. Bashir Ahmed, Prof. M. Afzal Hussain, Dr. Nazir Ahmed, Dr. Salimuzzaman Siddiqui.



Hon. Khawaja Nazimuddin addressing the scientists during inauguration of the Academy (1953).



Dr. Nazir Ahmed speaking at National Convention of Senior Scientists organized by PAS in Swat - August 27, 1965.

L-R: Dr. M. Raziuddin Siddiqi, President Mohammad Ayub Khan, Prince Aurangzeb, Prof. Abdus Salam.



President Mohammad Ayub Khan addressing the National Convention of Senior Scientists in Swat organized by Pakistan Academy of Sciences - August 27, 1965.



President of Pakistan, General Zia-ul-Haq addressing the scientists during Silver Jubilee Celebrations of the Academy in Islamabad (1978).



Dr. M. A. Kazi, President of the Academy, laying Foundation Stone of the Academy's Building in Islamabad (1979).



Dr. M. Raziuddin Siddiqi, Secretary General, delivering his Welcome Speech at the Foundation Laying Ceremony of the Academy's Building in Islamabad (1979).



Members of First Delegation of the Chinese Academy of Sciences with President and Fellows of the Pakistan Academy of Sciences.



Dr. A.Q. Khan and Prof. Dr. Atta-ur-Rahman inaugurating Science Exhibition at the Pakistan Academy of Sciences. Prof. Dr. M.D. Shami and Dr. S. Riaz Ali Shah are also present.



The PAS-organized ceremony in Islamabad to celebrate the Award of FRS to Prof. Dr. Atta-ur-Rahman (2006).

L-R: Prof. Dr. Khalid Mahmood Khan, Secretary General PAS; Chaudhry Nauroze Shakoor, Minister for Science & Technology; General Parvez Musharraf, President of Pakistan; Lt. Gen. Khalid Maqbool, Governor Punjab; Prof. Dr. Atta-ur-Rahman, President PAS



Members of the delegation of the Indian National Science Academy (INSA) with the President and members of the Council of the Academy in Islamabad - January 2012.



Members of the delegation of the Chinese Academy of Sciences led by its President, Dr. Chunli Bai, with the President and members of the Council of the Academy - July 2012.



President of Turkish Academy of Sciences, Prof. Dr. Ahmet Cevet Asar, and President of Pakistan Academy of Sciences, Dr. Anwar Nasim, signing Agreement for Scientific Cooperation in Islamabad in the presence of Prime Minister of Pakistan, Mian Muhammad Nawaz Sharif, and Prime Minister of Turkey, Mr. Ahmet Davutoglu on February 17, 2015.



Prof. Dr. Mustafa ERGUN, Executive Director, InterIslamic Science & Technology Network on Oceanography (INOC), Izmir, Republic of Turkey delivered a lecture on Caspian Sea, Water Fluctuations and the Effects on the Human History at the Pakistan Academy of Sciences (PAS) auditorium - January 16, 2020



A 3-member delegation from Yunnan Academy of Science and Technology development (YASTD) led by the Deputy Dean (YASTD), Pu Weidong, visited the Pakistan Academy of Sciences (PAS) and had a meeting with the PAS Officials and Fellows - January 06, 2020



A three members' delegation from the Embassy of the Republic of Uzbekistan visited the Pakistan Academy of Sciences (PAS) Headquarters, Islamabad. Prof. Dr. Qasim Jan (President, PAS) and Prof. Dr. Aslam Baig (Secretary General, PAS) led the PAS side - September 30, 2020



UNESCO Islamabad in collaboration with the Commission on Science and Technology for Sustainable Development in the South (COMSATS), the Organization of Islamic Cooperation Standing Committee on Scientific and Technological Cooperation (COMSTECH), the Economic Cooperation Organization Science Foundation (ECOSF), the Pakistan Science Foundation (PSF) and the Pakistan Academy of Sciences (PAS), celebrated World Science Day for Peace and Development, at the COMSTECH Secretariat, Islamabad November 10, 2020



Pakistan Academy of Sciences (PAS) celebrated "National Science Day (NSD)" for the first time, dedicated to the achievements and contributions of Dr. Abdus Salam, the first Nobel Laureate of the Islamic World - January 29, 2021



Pakistan Academy of Sciences (PAS) organized a special lecture on “Equality in Education” in the PAS Auditorium. Dr. Hazir Ullah, Associate Professor Sociology & Director ORIC, Quaid-i-Azam University Islamabad was invited as a Guest Speaker.
February 9, 2021



China-Pakistan Joint Research Center on Earth Science (CPJRC) in collaboration the Pakistan Academy of Sciences (PAS) successfully held "China-Pakistan High-level Webinar on Earth Science Cooperation" with the theme of Sustainable Development of CPEC: Vision for China-Pakistan Science and Technology Cooperation in Earth Sciences. Prof. Dr. Qasim Jan, Immediate Past President of Pakistan Academy of Sciences (PAS), delivered a welcome address and presided over the Opening Ceremony – March 18, 2021



The Pakistan Academy of Sciences (PAS) and the Association of Academies and Societies of Sciences in Asia (AASSA) with the support of InterAcademy Partnership (IAP) organized an AASSA-PAS Webinar III/Hybrid Workshop in the Pakistan Academy of Sciences. The webinar/Hybrid Workshop covered specific themes i.e. **“How to Counter Infodemics: Role of Scientists & Role of Complementary Medicine in Pandemics”** and **“Diagnosis, Critical Care; Vaccines and Herd Immunity”**. **H.E. Zartaj Gul, Minister of State for Climate Change, Government of Pakistan (GoP)** was the Chief Guest of the Inaugural Session. The concluding session of the Workshop was chaired by **H.E. Masood Khan, President AJ&K** - May 25, 2021



Prof. Dr. Khalid Mahmood Khan (President, PAS) and Prof. Dr. Tasawar Hayat (Secretary General, PAS) welcomed the Ambassador of the Republic of Bulgaria, H.E. Mrs. Irena Gancheva on her visit to the Pakistan Academy of Sciences – June 24, 2021



The Pakistan Academy of Sciences (PAS) and the Association of Academies and Societies of Sciences in Asia (AASSA), with the support of the InterAcademy Partnership (IAP), organized an AASSA-PAS Webinar VI/Hybrid Workshop on **COVID-19 and Higher Education: Addressing Food Insecurity through Policy Support and Research**, in the Pakistan Academy of Sciences. In total, 13 lectures were delivered by leading experts, of which four were delivered by international speakers from Australia, Canada, China and the UK, and eight lectures by Pakistani speakers. **H.E. Syed Fakhar Imam**, Federal Minister, National Food Security and Research, inaugurated the webinar - June 24, 2021



Mr. Nadeem Irshad Kayani, Federal Secretary, MoST visited the PAS to discuss the PAS's functions and constructive dialogue between the Ministry of Sciences and Technology and the Pakistan Academy of Sciences for Science, Technology and Innovation based development in the country. Prof. Dr. Tasawar Hayat, Secretary General PAS welcomed the Federal Secretary MoST and his colleagues Mr. Zahir Shah (Joint Secretary MoST) and Dr. S. Zaheer Hussain (Dir. Policy Wing, MoST). Prof. Dr. Anwar ul Hasan Gilani was also present in the meeting - June 30, 2021



Pakistan Academy of Science (PAS) held a hybrid Reference for (Late) Dr. Abdul Quadeer Khan (*N.I. & Bar, H.I.*), Founding Chairman, Dr. A.Q. Khan Research Laboratories, Kahuta & Fellow Pakistan Academy of Sciences who breathed his last on October 10, 2021 and was buried in H-8 Graveyard, Islamabad - October 21, 2021



Pakistan Academy of Sciences (PAS) and Pakistan Nuclear Society (PNS) jointly organized a One-day Seminar on **“Afforestation of Global Deserts for Sustainable Future of Earth Environments”**. **Prof. Dr. M. Aslam Baig, Former Secretary General PAS**, on behalf of PAS gave the welcome address. Dr. Yusuf Zafar, Ex-Chairman, PARC was the Chief Guest of the Event - November 24, 2021



PAS Lahore Office was formally inaugurated by Prof. Dr. Khalid Mahmood Khan, President PAS and Prof. Dr. Niaz Ahmad Akhtar, Vice Chancellor of University of the Punjab along with Prof. Dr. Tasawar Hayat (Secretary General, PAS). A large number of PAS Fellows attended the inaugural ceremony of the PAS Lahore Office – December 02, 2022



Pakistan Academy of Sciences (PAS) organized PAS AI Lecture Series 1st Talk on the topic AI and Deep Learning in Ophthalmology delivered by Dr. Muhammad Usman Akram working as an Associate Professor at the National University of Science and Technology, Islamabad - December 23, 2021.

4. CHARTER OF THE PAKISTAN ACADEMY OF SCIENCES

Preamble

The Fellows of the Pakistan Academy of Sciences, assembled at a General Body Meeting on the 17th day of the month of March in the Year 1979, approved and adopted the CHARTER for the management and conduct of the affairs of the Academy. The updated version of the CHARTER, as amended by the General Body from time to time, is as under:

4.1. Short Title

This Charter may be called the “Charter” of the Pakistan Academy of Sciences, here-in-after called the “Charter”.

4.2. Commencement

It shall come into force at once.

4.3. Definitions

In this Charter, unless there is anything repugnant to the Context,

- i. “Academy” means the “Pakistan Academy of Sciences” as re-organized under this Charter.
- ii. “Bye-Laws” means the Bye-Laws as passed by the Council and approved by General Body of the Academy from time to time.
- iii. “Council” means the Executive Body of Academy as laid down in clause 6 of this Charter.
- iv. “Fellow” means a Founding Fellow or a Fellow of the Academy elected under clause 5 (A)(ii) of this Charter or Para 17 of the Bye-Laws for the Election of new Fellows.
- v. (a) Member means a Member of the Academy nominated under clause 5 (A)(iii)(a) of this Charter.
(b) “*Foreign Fellow” means a citizen of a foreign country nominated as a Fellow of the Academy under clause 5 (A) (iv) of this Charter.

(*As amended by the G.B. in its meeting held on December 8, 1998)

- vi. “Government” means the Federal Government of the Islamic Republic of Pakistan.
- vii. “General Body” means the Body consisting of the Fellows of the Academy.
- viii. “President”, “Vice-Presidents”, “Secretary General”, “Treasurer”, “Associate Secretary-General”, “Secretaries”, mean respectively the President, Vice Presidents, Secretary General, Treasurer, Associate Secretary General and Secretaries of the Academy, as laid down in clause 6 of this Charter.

4.4. Aims and Objectives

The aims and objectives of the Academy shall be:



- i. to promote higher studies and research on pure and applied sciences in Pakistan and to disseminate scientific knowledge;
- ii. to formulate standards of scientific effort and achievement in Pakistan and to recognize outstanding contributions to the advancement of science;
- iii. to publish and assist in the publication of Scientific Proceedings, Journals, Transactions, Monographs, Books and other scientific literature;
- iv. to establish and maintain association and relations between Pakistani scientists and the international groups, meetings and unions of scientists, and between Pakistani scientific activities and the activities of scientists in other countries;
- v. to award grants, scholarships, fellowships, prizes and medals for scientific research;
- vi. to undertake such scientific work of national or international importance as the Academy may be called upon to perform by the Government;
- vii. to have the advisory and consultative status with the Ministries and Divisions of Government dealing with scientific and technical matters, and to represent internationally the scientific work of Pakistan;
- viii. to secure and administer funds, endowments and other grants for the promotion and development of scientific research or projects of a scientific nature, and for the attainment of the aims and objectives of the Academy;
- ix. to correlate and assist in correlating the efforts of other scientific bodies;
- x. to do all other lawful things that the Academy may consider conducive to, or necessary for, the attainment of its aims and objectives.

4.5. Membership

- 5(A) The Academy shall comprise of Founding Fellows, Fellows, Members and Foreign Fellows, as described here under:
- i) Founding Fellows shall be persons borne on the Register of the Academy as Fellows immediately prior to the coming in force of this Charter, whose names and photographs are given in the Annexure-I to this Charter;
 - ii) Fellows shall be Pakistani scientists eminent for their original contribution to science, who are elected according to the procedure laid down in the Bye-Laws. Not more than five Fellows may be elected in any one year until the total number of Fellows reaches the limit of one hundred and ten (110*);
(*As amended by G.B. in its meeting held on November 20, 2018)
 - iii) (a) Members shall be Pakistani scientists who have made substantial contributions to science, and who are nominated according to the procedure laid down in the Bye-Laws;
(b) Not more than ten (10) Members may be elected in first year, and not more than three Members may be nominated in any subsequent year until the total number reaches the limit of fifty (50);

- iv) Foreign Fellows shall be scientists who are nationals of countries other than Pakistan, and who are eminent for their contributions to science, and who are elected according to the procedure laid down in the Bye-Laws. Not more than three Foreign Fellows may be elected in any one year until the total number of Foreign Fellows reaches the limit of fifty (50*);

(*As amended by G.B. in its meeting held on November 20, 2018)

- 5(B) Procedures for the election of Fellows, Members and Foreign Fellows shall be laid down in the Bye-Laws.

4.6. Administration

- (A) The administration, direction and management of the affairs of the Academy shall be entrusted to a Council comprising of the following office-bearers and other members:
 - i. President;
 - ii. Two Vice-Presidents;
 - iii. Secretary General;
 - iv. Treasurer;
 - v. Associate Secretary-General;
 - vi. Four Secretaries (one for each Province);
 - vii. Four other members from amongst the Fellows of the Academy elected by the General Body;
 - viii. One member from amongst the Fellows of the Academy nominated by the Ministry of Education;
 - ix. One member from amongst the Fellows of the Academy nominated by the Ministry of Science and Technology;
 - x. *One member from amongst the Fellows of the Academy nominated by the Higher Education Commission;

(*As decided by G.B. in its meeting held on October 26, 2016)

- xi. Immediate past President to be a “member” of the Council for one term.
- (B) *The term of office of the Office Bearers and other members of the Council shall be three (3) years. The retiring office bearers and other members in future shall then not be eligible for re-election to any position of the Council for the subsequent three-year term.

(*As amended by G.B. in its meeting held on November 25, 2013)

- (C) The Quorum for meetings of the Council shall be fifty per cent of its members, fractions to be ignored.



- (D) The procedure for the election of Office Bearers and other members of the Council shall be laid down in the Bye-Laws.
- (E) If the name of one Fellow has been proposed for more than one office, he shall be required to choose only one office for which he agrees to be a candidate.

4.7. Rights and Privileges of Fellows, Members and Foreign Fellows

- 7(A) Fellows, Members and Foreign Fellows shall be entitled to the following rights and privileges:
 - i. to have personal access to the Library of the Academy and to take out books and journals from the Library, subject to such Regulations as may be prescribed by the Council;
 - ii. to receive gratis copies of the Proceedings and Transactions of the Academy, and of such other publications as the Council may decide from time to time, and to purchase other publications of the Academy at the price decided by the Council;
 - iii. to offer papers and communications to be read at the Meetings of the Academy;
 - iv. to serve on any committees and other bodies appointed by the Council and the General Body;
 - v. to be present and participate in the deliberations at all General Body meetings, provided that the Members and Foreign Fellows shall not be entitled to vote; Fellows shall have the right to vote at all General Body meetings;
 - vi. Fellows shall be entitled to propose and recommend candidates for Foreign Fellowship, Fellowship, and Gold Medals of the Academy;

*7(B)

- i. The Fellowship, Membership and Foreign Fellowship of the Academy, being a recognition of the merit of eminence of the distinguished scientists and a token of honour, shall involve no regular subscription to be paid by them. The General Body may, however, on the recommendation of the Council, determine an amount to be paid by a newly elected Fellow on the occasion of his induction. The Fellows may be required to give donations;
- ii. Any Fellow, Member or Foreign Fellow may withdraw from the Academy by conveying his wish to do so by a letter addressed to the Secretary General of the Academy. Provided that if a Fellow, who had resigned from the Fellowship previously, expresses his desire in writing that he would like to withdraw his resignation, the General Body, on the recommendation of the Council, may allow him to do so;
- iii. Fellows, Members and Foreign Fellows who have withdrawn from the Academy, shall be eligible for re-election.

*7(C)

- i. If it comes direct to the notice of the President or the Secretary General of the Academy or it is brought to their notice by a Fellow of the Academy or through the

media that a Fellow, a Foreign Fellow or a Member of the Academy has willfully violated the rules or decisions of the Academy or of the Council or the conduct of the Fellow, Foreign Fellow or Member is violative of the Charter or injurious to the interest of the Academy or he/she commits willful breach of order at any meeting of the Academy or has committed or persisted in such disobedience or breach of order, the Academy through the President / Secretary General can take suo moto action.

- ii. In such a situation, the Secretary General shall write to the Fellow, Foreign Fellow or Member that a complaint has been received against him or her. The Secretary General shall ask the Fellow, Foreign Fellow or Member to clarify his or her position in person or in writing. If the Secretary General, after consultation with the President of the Academy, feels that the explanation is inadequate or unsatisfactory, he shall bring it to the notice of the Council. If the Council determines by a simple majority vote (through secret ballot) that the Fellow should not remain on the rolls, he/she will be asked to resign. If he or she fails to do so within one month, the Council shall inform the Fellow in writing of its intention to remove the Fellow, Foreign Fellow or Member.
- iii. After intimation to the Fellow, Foreign Fellow or Member, the matter shall be placed at a General Body meeting. If two-third of the Fellows present vote through secret ballot for the removal of the Fellow, Foreign Fellow or Member, provided this number is not less than fifty percent (50%) of the existing number of Fellows, the President shall declare that the person's name be removed from the Register of the Fellows, Foreign Fellows or Members and at the same time pronounce that: "Dr./Prof. -----" ceases to be a Fellow, Foreign Fellow or Member of the Pakistan Academy of Sciences with immediate effect". **(* As decided by G.B. in its meeting held on December 13, 2002)**

4.8. Functions and Powers of the General Body

8(A) The functions and powers of the General Body shall be:

- i. to approve Bye-Laws of the Academy, which shall not be inconsistent with this Charter;
- ii. to approve annual programme and budget of the Academy;
- iii. to sanction the creation, extension, curtailment or abolition of any of the organizations, institutions, committees and posts, paid or otherwise, established and/or maintained by the Academy;
- iv. to elect Fellows, Members and Foreign Fellows of the Academy;
- v. to elect Council of the Academy;
- vi. to consider the reports submitted by the Council and issue directions for further work of the Academy;



- vii. subject to other provisions in this Charter, to exercise generally the residuary powers so far as the affairs of the Academy are concerned;
 - viii. to frame Rules governing the procedure to be followed at the General Body meetings.
- 8(B) The Quorum of meetings of the General Body shall be one-third of the total number of Fellows, fractions to be ignored.

4.9. Functions and Powers of the Council

The functions and powers of the Council shall be:

- i. to manage the property, income, concerns and affairs of the Academy, and for this purpose, to make, with the approval of the General Body, such Bye-Laws as may be necessary for the good administration of the Academy, provided that such Bye-Laws shall not be inconsistent with any provision of this Charter;
- ii. to formulate the annual programme and budget of the Academy and of the institutions maintained by it;
- iii. to direct and control the publication of Proceedings, Journals, Transactions, Monographs and other works published by the Academy, and to appoint an Editor-in-Chief and Editorial Board for this purpose for a term of 4 years, renewable for one more term;
- iv. to control the libraries, laboratories, museums, research institutes and other institutions established by the Academy, and, for this purpose, to appoint, within the sanctioned budget, librarians, superintendents, curators, directors, research officers and other staff, whether paid or honorary;
- v. subject to the powers of the President, Secretary-General and Treasurer, to appoint salaried staff of the Academy as sanctioned in the budget, to define their duties and terms and conditions of service, and to dispense with their services as the occasion may require;
- vi. to prepare and submit to the General Body and the Government, the annual Report on the affairs of the Academy;
- vii. To sanction, in an emergency, extra expenditure not provided for in the budget, provided that funds are available for the purpose;
- viii. To appoint Committees and Boards for specific matters and to take necessary action on the reports submitted by the Committees and Boards;
- ix. To consider and dispose of the proposals received from the members of the Council and Fellows, Members and Foreign Fellows of the Academy, and communications received from the others, except in so far as such proposals and communications require the consideration of the General Body.

4.10. Funds of the Academy

The Treasurer shall receive and hold for the use of the Academy all moneys paid to the Academy; he shall disburse all sums due from the Academy, and shall keep proper accounts of all such receipts and payments:

- i. The procedures for keeping of proper accounts for competent sanction of expenditure, for disbursements and for countersigning cheques, or authorizing payments, shall be laid down in the Bye-Laws;
- ii. The full accounts of Academy shall be audited every year by a Chartered Accountant appointed annually by the Council, and copies of the audited statement shall be submitted to the General Body and the Government;
- iii. All sums received for and on behalf of the Academy shall be regularly deposited by the Treasurer, as soon as possible after the receipt thereof, in a scheduled Bank approved by the Council for this purpose;
- iv. The income and property of the Academy, however derived, shall be utilized exclusively for the promotion of the Aims and Objectives of the Academy, and no portion thereof shall be paid or transferred directly or indirectly by way of dividend, bonus or otherwise.

4.11. Framing of Bye-Laws

A majority of not less than *forty percent (40%) of the total number of existing Fellows of the Academy, either present in person and voting at a General Body Meeting specially called for the purpose, of which due notice has been given, or the like majority of the Fellows voting by means of a postal ballot, shall have the power to make such Bye-Laws which are not inconsistent with this Charter, and are requisites for the proper conduct and management of the affairs of the Academy, and to revoke or amend any Bye-Law previously made.

(*As amended by G.B. in its meeting held on November 25, 2013)

4.12. Amending the Charter

When the introduction of any new clause or the modification or repeal of any existing clause in the Charter is recommended by the Council, or proposed by ten (10) or more Fellows, this shall only be done by a majority of not less than forty percent (40%) of the total number of the existing Fellows of the Academy, either present in person and voting at a General Body Meeting, specially called for the purpose, of which due notice has been given, or the like majority of the Fellows voting by means of a postal ballot.

(*As amended by G.B. in its meeting held on November 25, 2013)

4.13. Duties and Powers of the President

The duties and powers of the president shall be as follows:



- i. To preside at all Meetings of the Academy and of the Council, and to regulate the proceedings at such Meetings;
- ii. To ensure due effect being given to the Rules and to the Bye-Laws, made by the Council and the General Body;
- iii. To check irregularities and to keep all persons to order;
- iv. To call for reports and accounts from all Bodies, Institutions, Officers (paid or otherwise) and Employees of the Academy;
- v. To be ex-officio Member of all Committees, appointed by the Council, and to call for reports and accounts from such Committees;
- vi. In case of doubt as to the interpretation of any of the Rules. to decide on the interpretation. In such case the President's interpretation, shall hold until the next Meeting of the Council, when the interpretation of the Rule should be discussed and finally determined;
- vii. To summon Meetings of the General Body and of the Council.

4.14. Duties and Powers of the Secretary General

The duties and powers of the Secretary General shall be as follows:

- i. To conduct the correspondence of the Academy and of the Council and to sign all letters and papers emanating from the Academy, except in so far as other provision is made in the Rules;
- ii To attend the Meetings of the Academy and of the Council, and to take minutes of the proceedings of such Meetings during the progress; and, at the commencement of every such Meeting, to read the minutes of the previous Meeting, if so desired;
- iii. To prepare for submission to the annual General Body Meeting, a list of Fellows, corrected to the close of the previous year;
- iv. To enter, or cause to be entered, in the Minute-books all the proceedings of the Academy and of the Council before the following Meeting, and to see that all letters and papers and documents of every kind connected with the business of the Academy, except those relating to finance, are properly filed and preserved;
- v. To exercise general supervision over the employees and affairs of the Academy, and to assist in carrying out the Rules, the Bye-Laws, and orders / discussions made by the Council and the General Body;
- vi. To be ex-officio Member of the Committees appointed by the Council;
- viii. To be the custodian of the Files and other property of the Academy.

4.15. *Powers of the Associate Secretary General

If the Secretary General proceeds abroad for a period exceeding three days, or if he is temporarily unable to discharge duties due to indisposition or other reason, then the

Associate Secretary General will be empowered to exercise powers of the Secretary General pertaining to the day to day affairs.

(*As decided by G.B. in its meeting held on December 4, 2014)

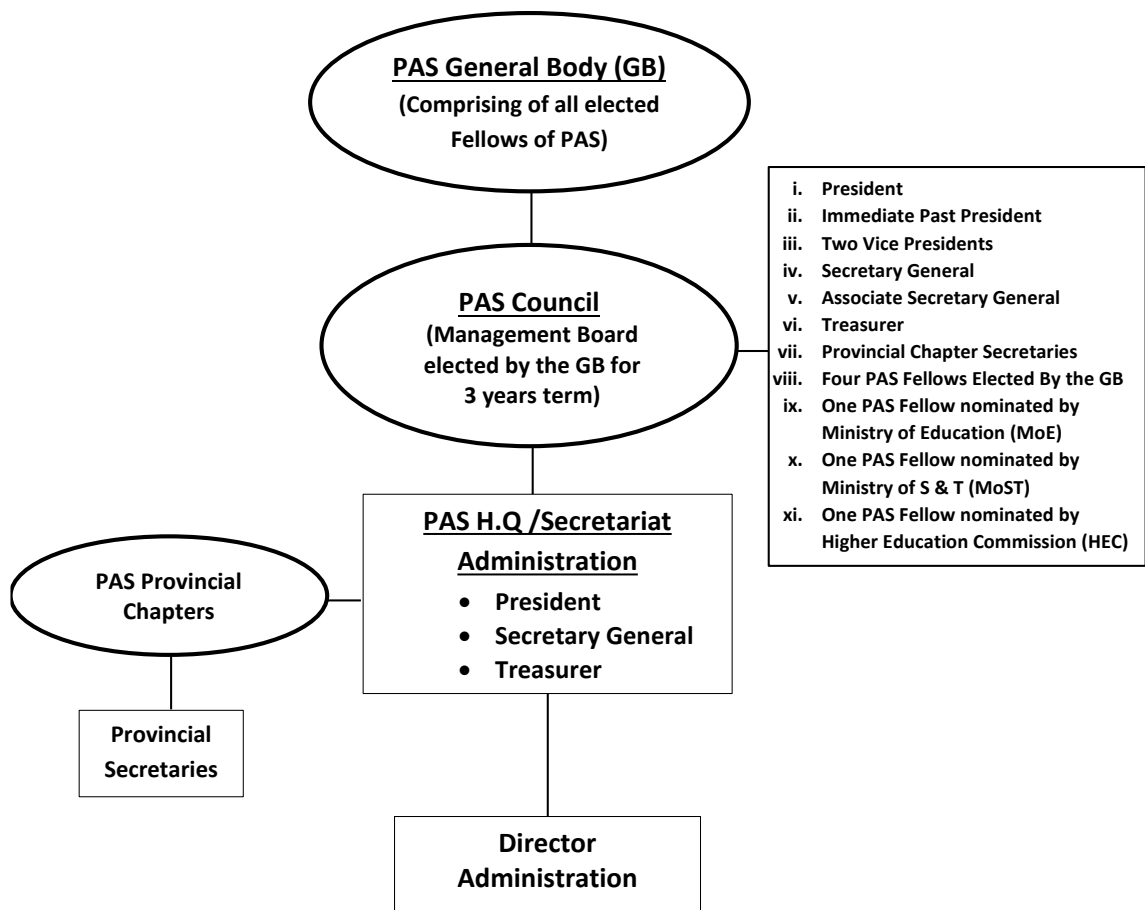
4.16. *Pakistan Academy of Sciences Chapters

The PAS General Body decided that the Pakistan Academy of Sciences Chapters may be named after provinces i.e. Punjab Chapter, Sindh Chapter, KP Chapter and Balochistan Chapter.

(*As decided by G.B. in its meeting held on November 20, 2018)



Organogram of Pakistan Academy of Sciences





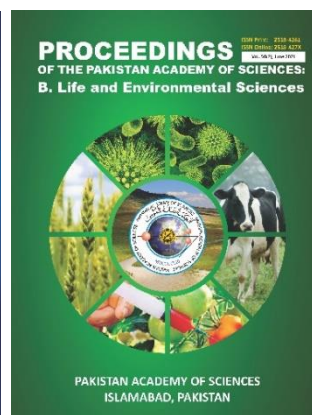
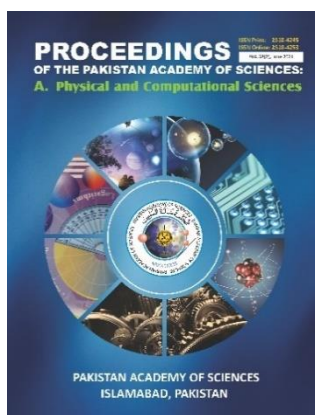
5. FINANCIAL ASSISTANCE TO THE ACADEMY

Historically, the Ministry of Education, Government of Pakistan, and the Pakistan Science Foundation (PSF) have been providing annual grant-in-aid to the Academy to carry out scientific activities. Occasionally, the Ministry of Science and Technology, Government of Pakistan, has also helped the Academy financially. The Fellows also voluntarily make contributions to the Academy. Besides, the Academy receives yearly grants from the Higher Education Commission (HEC).

6. PUBLICATIONS OF THE ACADEMY

6.1. Proceedings of the Pakistan Academy of Sciences

The Academy has been publishing its official journal “Proceedings of the Pakistan Academy of Sciences” since 1964. The Proceedings is an Open Access international journal and is published quarterly since 2004. It publishes original research papers and reviews on a broad range of topics in basic and applied sciences, i.e., Engineering Sciences, Life Sciences, Medical Sciences and Physical Sciences. All papers are written in English and are peer-reviewed. Authors are not required to be Fellows or Members of the Academy or citizens of Pakistan.



Since March 2016, the Proceedings have been bifurcated into two journal;

1. Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences
2. Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences

The affairs of the Proceedings are managed by the Editors, Discipline Editors, and Editorial Advisory Boards. The journals are covered by Print and Online ISSN and are distributed to scientific organizations and universities throughout the country and to international scientific organizations, by subscription and on an exchange basis. These are abstracted in Biological Abstracts, Physical Sciences Abstracts, Chemical Sciences Abstracts, Mathematical Reviews, Scopus, Elsevier products and other many leading abstracting and indexing services.

All correspondence and inquiries about the publication of manuscripts are received by the Editor at the following address:

Editor
Pakistan Academy of Sciences
3-Constitution Avenue, G-5/2
Islamabad, Pakistan
Email: editor@paspk.org



6.1.1. Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences (Online ISSN: 2518-4253; Print ISSN: 2518-4245)

Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences is the official flagship, the peer-reviewed quarterly journal of the Pakistan Academy of Sciences. This open-access journal publishes original research articles and reviews on current advances in the field of Computer Science (all), Materials Science (all), Physics and Astronomy (all), Engineering Sciences (all), Chemistry, Statistics, Mathematics, Geography, Geology. Authors are not required to be Fellows or Members of the Pakistan Academy of Sciences or citizens of Pakistan.

Discipline Editors 2020

i. Chemical Sciences

Peter Langer

University of Rostock, Rostock, Germany

Syed M. Qaim

Universität zu Köln D-52425, JÜLICH, Germany

ii. Computer Sciences

Sharifullah Khan

National University of Science & Technology, Islamabad

iii. Engineering Sciences

Fazal A. Khalid

Punjab Higher Education Commission, Lahore, Pakistan

iv. Mathematical Sciences

Jinde Cao

Southeast University, Nanjing, Jiangsu, China

Muhammad Sharif

University of the Punjab, Lahore

v. Physical Sciences:

Stanislav N. Kharin

59 Tolebi, Almaty, Kazakhstan

M. Aslam Baig

National Center for Physics,
Quaid-i-Azam University Campus, Islamabad

Discipline Editors 2021

i. Chemical Sciences

Guo-Xin Jin

Fudan University, Shanghai, China

Haq Nawaz Bhatti

University of Agriculture, Faisalabad, Pakistan

ii. Computer Sciences

Sharifullah Khan

Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology (PAF-IAST)
Haripur, Pakistan

iii. Engineering Sciences

Akhlesh Lakhtakia

Pennsylvania State University, University Park, USA

iv. Geology

Peng Cui

Institute of Mountain Hazards and Environment (IMHE),
Chinese Academy of Sciences (CAS), Chengdu, Sichuan, P.R. China

v. Mathematical Sciences

Jinde Cao

Southeast University Nanjing, P. R. China

Ismat Beg

Lahore School of Economics, Lahore, Pakistan

vi. Physical Sciences:

Niemela J. Joseph

The Abdus Salam International Center for Theoretical Physics (ICTP-UNESCO),
Trieste- Italy

Asghari Maqsood

Air University, Islamabad

The following issues of Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences were published during the years 2020 and 2021:

Volume 57 (No. 1), March 2020

Volume 57 (No. 2), June 2020

Volume 57 (No. 3), September 2020

Volume 57 (No. 4), December 2020

Volume 58 (No. 1), March 2021

Volume 58 (No. 2), June 2021

Volume 58 (S), August 2021

Volume 58 (No. 3), September 2021

Volume 58 (No. 4), December 2021

Volume 57 & 58 of Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences are freely accessible on the official website of the Journals i.e. <https://ppaspk.org/index.php/PPAS-A> and the website of the Academy, i.e., <https://www.paspk.org/proceedings/>. In Collaboration with Indonesia, the Pakistan Academy of Sciences published a Special Issue of Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences on Innovation in Electrical Engineering, Information Technology and Renewable Energy for Welfare i.e. [Volume 58 (S), August 2021].



6.1.2. Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences (Online ISSN: 2518-427X; Print ISSN: 2518-4261)

Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences is the official flagship, the peer-reviewed quarterly journal of the Pakistan Academy of Sciences. This open-access journal publishes original research articles and reviews in the field of Agricultural and Biological Sciences (all), Biochemistry, Genetics and Molecular Biology (all), Environmental Science (all), Health Sciences (all). Authors are not required to be Fellows or Members of the Pakistan Academy of Sciences or citizens of Pakistan.

Discipline Editors 2020

- i. Animal Sciences*
Abdul Rauf Shakoori
University of the Punjab, Lahore
- ii. Biological Sciences*
Gary Stein
Vermont Cancer Center, Burlington, VT, USA
- iii. Environmental Sciences*
Zahir Ahmad Zahir
University of Agriculture, Faisalabad
- iv. Food Sciences*
G. Sarwar Gilani
506 Caracole Way, Ottawa, Ontario K4A 0W3, Canada
- v. Health Sciences*
Rumina Hasan
The Aga Khan University, Karachi
Eberhard Nieschlag
Universitäts Klinikum Münster, Münster, Germany
- vi. Plant Sciences*
Muhammad Ashraf
Pakistan Science Foundation, Islamabad
- vii. Pharmaceutical Sciences*
Wolfgang Voelter
Universität Tübingen, Tübingen, Germany

Discipline Editors 2021

- i. Agricultural Sciences*
Kadambot Siddique
The University of Western Australia, Perth, Australia

- ii. **Animal Sciences**
Abdul Rauf Shakoori
University of the Punjab, Lahore
- iii. **Biological Sciences**
Azra Khanum
PMAS Arid Agriculture University Rawalpindi, Pakistan
- iv. **Environmental Sciences**
Bin Chen
Beijing Normal University, China

Zahir Ahmad Zahir
University of Agriculture, Faisalabad
- v. **Food Sciences**
G. Sarwar Gilani
506 Caracole Way, Ottawa, Ontario K4A 0W3, Canada
- vi. **Health Sciences**
Khalid Iqbal
New York State Institute for Basic Research, New York, USA

Anwar-ul-Hassan Gilani
The University of Haripur, Haripur, Khyber Pakhtunkhwa, Pakistan
- vii. **Plant Sciences**
Munir Ozturk
Ege University, Izmir, Turkey

Zabta K. Shinwari
Quaid-i-Azam University, Islamabad, Pakistan
- viii. **Pharmaceutical Sciences**
Ilkay Erdogan Orhan
Gazi University, Ankara, Turkey

The following issues of Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences were published during the years 2020 and 2021:

Volume 57 (No. 1), March 2020	Volume 58 (No. 1), March 2021
Volume 57 (No. 2), June 2020	Volume 58 (No. 2), June 2021
Volume 57 (No. 3), September 2020	Volume 58 (No. 3), September 2021
Volume 57 (No. 4), December 2020	Volume 58 (No. 4), December 2021

Volume 57 & 58 of Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences are freely accessible on the official website of the Journals i.e. <https://ppaspk.org/index.php/PPAS-B> and the website of the Academy, i.e., <https://www.paspk.org/proceedings/>. Special Issue of the Proceedings of the Pakistan

Academy of Sciences: B. Life and Environmental Sciences i.e. [Volume 58 (S), July 2021] related to AASSA-PAS Webinar Series organized by the Pakistan Academy of Sciences (PAS) and the Association of Academies and Societies of Sciences in Asia (AASSA) with the support of Inter Academy Partnership (IAP) is published.

6.2. HEC Journal Recognition System

HEC Journal Recognition System is a collection of research journals that are categorized into three different categories – W, X and Y -- within their respective knowledge areas on the basis of a number of internationally benchmarked and recognized parameters that measure the quality of a journal. The relative position and category of each journal is computed by a proprietary algorithm that is designed with the objective of promoting quality research across various disciplines.

Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences (Online ISSN: 2518-4253; Print ISSN: 2518-4245) and Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences (Online ISSN: 2518-427X; Print ISSN: 2518-4261) have been recognized in Y Category for the year 2021 - 2022 by Higher Education Commission.

6.3. CrossRef Annual Membership for Digital Object Identifier (DOI)

Pakistan Academy of Sciences (PAS) has received the CrossRef Membership through EScience Press for digital object identifier (DOI) for the flagship journals of the PAS i.e. Proceedings of the Pakistan Academy of Sciences A. Physical and Computational Sciences and Proceedings of the Pakistan Academy of Sciences B. Life and Environmental Sciences. A digital object identifier (DOI) is a unique alphanumeric string assigned by a registration agency (the International DOI Foundation) to identify content and provide a persistent link to its location on the Internet. The publisher assigns a DOI when your article is published and made available electronically. DOIs make research outputs easy to find, cite, link, assess and make scholarly communications better. CrossRef is a DOI registration agency that offers different services to its members.

6.4. Newsletter of the Pakistan Academy of Sciences

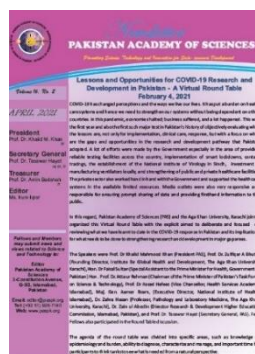
Following issues of quarterly Newsletter of the Pakistan Academy of Sciences were published during the years 2020 and 2021:

Volume 15 (No. 1), January 2020

Volume 15 (No. 2), April 2020

Volume 15 (No. 3), July 2020

Volume 15 (No. 4), October 2020



Volume 16 (No. 1), January 2021

Volume 16 (No. 2), April 2021

Volume 16 (No. 3), July 2021

Volume 16 (No. 4), October 2021

Newsletters, are accessible at official website of the Academy, i.e.,

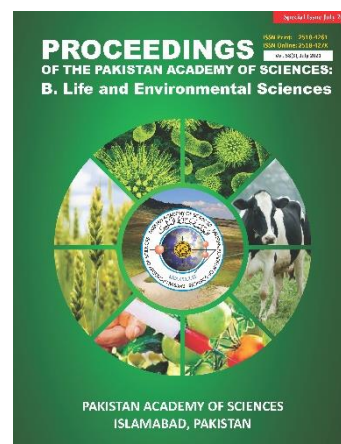
<http://www.paspk.org/all-newsletters/>.



6.5. Proceedings of the AASSA-PAS Webinar Series / Hybrid Workshops 2021 on “Pandemic Preparedness: Science and Countermeasures”

COVID-19 has proved that more work needs to be done for preparedness and countermeasures for possible pandemics. Responding to or planning for a pandemic is a complex process. The most important global pandemic preparedness indicators take into account of prevention, the emergence or release of potential pathogens, early detection and assessing their expansion, emergency response, global risk mitigation, strong healthcare system, commitment to improving national capacity in compliance with the global needs, an overall assessment of country's vulnerability to risk/biological threat. To deliberate upon the gigantic role of scientists, researchers, medical practitioners, policymakers, students, media, etc. and to arrive at possible strategies, the Pakistan Academy of Sciences (PAS) and the Association of Academies and Societies of Sciences in Asia (AASSA) with the support of InterAcademy Partnership (IAP) jointly organized AASSA-PAS Webinar Series 2021 on Pandemic Preparedness: Science and Countermeasures consisting of four (04) webinars each covering a specific theme of the current pandemic scenario/situation scheduled on April 27, 2021, May 4, 2021, May 25, 2021, and June 24, 2021. Selected research and review articles presented by the Speakers and Poster Presenters after a proper review process were published in the Proceedings of the AASSA-PAS Webinar Series / Hybrid Workshops 2021 on “Pandemic Preparedness: Science and Countermeasures. The papers covered the following themes

- SDGs and Pandemics
- Pandemics preparedness, One Health: Lessons Learnt
- How to Counter Infodemics: Role of Scientists & Role of Complementary Medicine in Pandemics
- Diagnosis, Critical Care; Vaccines and Herd Immunity





- COVID-19 and Higher Education: Addressing Food Insecurity through Policy Support and Research

In the culmination of the AASSA-PAS Webinar Series, participants worked together for synthesizing a list of recommendations that would further help in creating a better and more robust pandemic response.

6.6. Other Publications of the Academy

1. Pakistan Academy of Sciences (Introduction, Functions, Achievements, Future Programme).
Pakistan Academy of Sciences, University of Islamabad, Islamabad, 19 pp.
2. Siddiqi, M. Raziuddin (1953) Pakistan Academy of Sciences – Inauguration and Constitution; Lahore, 16 February 1953. Pakistan Academy of Sciences. 37 pp.
3. Pakistan Academy of Sciences (1968) Proceedings of the Symposium on Waterlogging and Salinity, March 17-20, 1968. Pakistan Academy of Sciences, Islamabad, 256 pp.
4. Ahmad, Nazir (1972) Survey of Fuels and Electric Power Resources in Pakistan.
5. Pakistan Academy of Sciences (1973) Human Environment in Pakistan – Report of Seminars held on 5 June 1973 at Islamabad, Lahore & Karachi. Pakistan Academy of Sciences, Islamabad; Public Health Engineering Department, Lahore; Pakistan Association of Scientists & Scientific Professions, Karachi, 13 pp.
6. Pakistan Academy of Sciences (1974) The Investiture Ceremony of the Gold Medals of the Pakistan Academy of Sciences. Karachi, 7 January 1974. Pakistan Academy of Sciences, Islamabad, 12 pp.
7. Pakistan Academy of Sciences (1974) Memorandum Concerning the Organization and Development of the Pakistan Academy of Sciences. Pakistan Academy of Sciences, Islamabad, 14 pp.
8. PSF & PAS (1974) Souvenir “Marconi’s Birthday Century Celebrations”, 11-17 November 1974, Rawalpindi & Islamabad. Organized by Pakistan Science Foundation, Pakistan Academy of Sciences, and Institution of Electrical Engineers, 23 pp.
9. Pakistan Academy of Sciences (1974) Proceedings of the Symposium on Nutritional Deficiencies and Their Remedies (a Brief Report), 23–24 April, 1974, held at Institute of Chemistry, University of the Punjab, Lahore. Pakistan Academy of Sciences, Islamabad, 139 pp.
10. Pakistan Academy of Sciences (1975) International Symposium on “Natural & Man-made Fibres”. Pakistan Academy of Sciences, the Pakistan Central Cotton Committee & Pakistan Central Jute Committee, 30 pp.

11. Pakistan Academy of Sciences (1975) International Conference on the Management of Environment; Part I, Proceedings and Recommendations, February 17-19, 1975; Pakistan Academy of Sciences, Islamabad, 21 pp.
12. Pakistan Academy of Sciences (1975) Joint Panel Discussions on National Science Policy. Vol. I. Food, Agriculture and Minor Forest Industries. 25–27 Jan 1975. Organized by Pakistan Academy of Sciences and National Science Council.
13. Pakistan Academy of Sciences (1975) Joint Panel Discussions on National Science Policy. Vol. II. Mineral Resources. 25–27 Jan 1975. Organized by Pakistan Academy of Sciences and National Science Council.
14. Pakistan Academy of Sciences (1975) Joint Panel Discussions on National Science Policy. Vol. IV. Health and Medicine. 25–27 Jan 1975. Organized by Pakistan Academy of Sciences and National Science Council.
15. Pakistan Academy of Sciences (1975) Joint Panel Discussions on National Science Policy. Vol. V. Irrigation and Reclamation. 25–27 Jan 1975. Organized by Pakistan Academy of Sciences and National Science Council, Islamabad.
16. Pakistan Academy of Sciences (1975) Joint Panel Discussions on National Science Policy. Vol. VIII. Nutrition. 25–27 Jan 1975. Organized by Pakistan Academy of Sciences and National Science Council.
17. Afzal, Muhammad (1975) Farming in Pakistan. Pakistan Academy of Sciences, Islamabad, 277 pp. Shah, M.H. (1976) An Evaluation of Ibn Sina's Concept of Temperament & Constitution for Food & Drug Research (Academy's Annual Lecture). Pakistan Academy of Sciences, Islamabad, 51 pp.
18. Siddiqi, M. Raziuddin (1978) History of the Pakistan Academy of Sciences, 1953 to 1978. Pakistan Academy of Sciences, Islamabad, 139 pp.
19. Siddiqi, M. Raziuddin (1978) Proceedings of the Silver Jubilee of the Pakistan Academy of Sciences, 16 February 1978. Pakistan Academy of Sciences, Islamabad, 50 pp.
20. Qurashi, M.M. (1978) The Mechanics of R&D and Technology Transfer. Pakistan Academy of Sciences, Islamabad, Pakistan. 127 pp.
21. Ahmad, Nazir (1979) Tubewell: Theory and Practice; PAS Monograph No. 4. Pakistan Academy of Sciences, Islamabad.
22. Kazi, M.A. (1979) Address of Welcome to Professor Abdus Salam, by Dr. M. A. Kazi on the occasion of The Award of the 1979 Nobel Prize for Physics, 19 December 1979. Pakistan Academy of Sciences, Islamabad, 6 pp.
23. Pakistan Academy of Sciences (1979) Pakistan Academy of Sciences Headquarters Building at Constitution Avenue, Islamabad: Perspective View. Pakistan Academy of Sciences, Islamabad.



24. Qurashi, M.M., Karimullah, M. Aslam, A.H. Chotani, and S.M. Moghni (1981) *Appropriate Technology & Development (with special reference to Pakistan)*. Appropriate Technology Development Organization, Government of Pakistan, in collaboration with Pakistan Academy of Sciences & Pakistan Banking Council, 430 pp.
25. Khattak, G.M. (1981) *The Feasibility of Forestry and Forest Industries in Hazara Division A Socio- economic Study*. Pakistan Academy of Sciences, Islamabad, 96 pp.
26. Karimullah, M.M. Qurashi, M.S.H. Siddiqi, M.K. Bhatti, and A.H. Chotani (1982) *Energy and Its Development (with special reference to Pakistan)*. Pakistan Academy of Sciences, Islamabad, 136 pp.
27. Aslam, M., and A.H. Khan (1983) *Post-Harvest Loss Reduction in Fruits and Vegetables - A review with special reference to Pakistan*. Pakistan Academy of Sciences & Pakistan Council of Scientific & Industrial Research, 87 pp.
28. Qurashi, M.M., and A.H. Chotani (1986) *Renewable Sources of Energy in Pakistan*. Pakistan Academy of Sciences, Islamabad, 87 pp.
29. Aslam, M. (1987) *Ethanol Production for Motor Vehicles & Feedstock*. Pakistan Academy of Sciences, Islamabad, 80 pp.
30. Qurashi, M.M. (1988) *Directory of Scholars Engaged in Studies on Science in Islamic Polity*, 3rd Ed. Pakistan Science Foundation, and Pakistan Academy of Sciences, Islamabad, 99 pp.
31. Ali, S.M., M.H. Quazi, M.M. Qurashi, M.A. Rahim, and F.H. Shah (1989) *Food & Nutrition Problems of the Muslim Ummah*. Pakistan Science Foundation and Pakistan Academy of Sciences, Islamabad, 244 pp.
32. Karimullah, and A.R. Ghani (1989) *Biographical Notes on Eminent Muslim Scientists of South Asia in the 14th Century Hijra, Vol. I. (d. 1877–1979 A.D.)*. Pakistan Science Foundation and Pakistan Academy of Sciences, Islamabad, 131 pp.
33. Aslam, M. (1990) *Polymers as Soil Conditioners & Sealing Agents, Part I*. Pakistan Academy of Sciences, Islamabad, 66 pp.
34. Shami, M.D. (1990) *Report on High-Level S&T Manpower – Its Training and Utilization*. Pakistan Academy of Sciences, Islamabad, 116 pp.
35. Shami, M.D. (1991) *Charter & Bye-Laws of Pakistan Academy of Sciences, as revised up to 1.1.1991*. Pakistan Academy of Sciences, Islamabad, 32 pp.
36. Karimullah, and A. R. Ghani (1991) *Biographical Notes on Eminent Muslim Scientists of South- Asia in 14th Century Hijra. Vol. II. (d. 1891–1991 A.D.)*. Pakistan Science Foundation and Pakistan Academy of Sciences, Islamabad, 84 pp.
37. Burney, M.I. (1991) *Proceedings of Seminar and Policy Briefings on Environmental Pollution and Climate Change, 21-22 October, 1991, Islamabad; Sponsored by*

- Climate Institute, Washington DC; PAS; PAEC; and PCSIR. Pakistan Academy of Sciences, Islamabad, 38 pp.
38. Qurashi, M.M., and A.Q. Kazi (1992) Research & Development in Pakistan: Review (1947-89) and Future Perspectives. Pakistan Academy of Sciences, Islamabad, 394 pp.
 39. Pakistan Academy of Sciences (1992) Year Book of Pakistan Academy of Sciences (1992). Pakistan Academy of Sciences, Islamabad, Pakistan. 44 pp.
 40. Anwar-ul-Haq (1993) Proceedings of the Federation of Asian Scientific Academies and Societies (FASAS) Symposium “New Materials and Contemporary Applications”, 28 November to 1 December 1992, Islamabad, Pakistan. Pakistan Academy of Sciences, Islamabad, Pakistan. 152 pp.
 41. Qurashi, M.M., and S.S.H. Rizvi (1996) History & Philosophy of Muslim Contributions to Science & Technology. Pakistan Academy of Sciences, Islamabad, Pakistan. 188 pp.
 42. Chughtai, M.I.D., and Khurshid Ahmed (1996) Wastewater Reuse in Urban Agriculture in Arid & Semi-arid Regions. Pakistan Academy of Sciences, Islamabad, Pakistan. 90 pp.
 43. Pakistan Academy of Sciences (1996) Year Book of Pakistan Academy of Sciences (1992). Pakistan Academy of Sciences, Islamabad, Pakistan. 56 pp.
 44. PAS (1997) First National Symposium on “Current Trends in Developmental and Reproductive Biology”, 22–23 November, 1997. Pakistan Academy of Sciences, Islamabad, 28 pp.
 45. Hafiz, Abdul (1997) Lahay-e-Amal (Action Plan): Celebrate Year of Wheat, Increase Production, and Make the Country Prosperous (Urdu). Sponsored by Pakistan Academy of Sciences, 24 pp.
 46. Ilyas, Muhammad (1998) Islami Qammeri Calendar (Urdu). Pakistan Science Foundation and Pakistan Academy of Sciences, Islamabad, 284 pp.
 47. Pakistan Academy of Sciences (1998) Proceedings of Seminar on “Emerging Environmental Issues in Pakistan”. Organized by Pakistan Academy of Sciences, in collaboration with Energy and Environment Society of Pakistan, 91 pp.
 48. Karimullah, and A.R. Ghani (1999) Biographical Notes on Eminent Muslim Scientists of South- Asia in 14th Century Hijrah. Volume II (d. 1891–1991). Pakistan Association for History & Philosophy of Science, and Pakistan Academy of Sciences, Islamabad, 84 pp.
 49. Ismail, Shoaib (2000) Abstracts “International Seminar “Prospects for Saline Agriculture”. Pakistan Academy of Sciences, Pakistan Agricultural Research Council, and COMSTECH, Islamabad, 96 pp.



50. Ahmad, Rafiq, and Kauser A. Malik (Eds.) (2002) Prospects for Saline Agriculture. Kluwer Academic Publishers, Dordrecht, The Netherlands. 460 pp.
51. Hafeez, M.A. (Ed.) (2002) Year Book of the Pakistan Academy of Sciences 2002. Pakistan Academy of Sciences, Islamabad, 79 pp.
52. Shami, M.D. (2003) Education, Science & Industry in the Muslim World. Institute of Policy Studies, and Pakistan Academy of Sciences, Islamabad, 160 pp.
53. Hafeez, M.A. (Ed.) (2003) Year Book of the Pakistan Academy of Sciences 2003. Pakistan Academy of Sciences, Islamabad, 87 pp.
54. Jafar, S.M., and Maulana Misbah-ur-Rahman Yousufi (2004) Genetic Principles and Islam. Pakistan Academy of Sciences, Islamabad. 39 pp.
55. Anwar-ul-Haq, and Athar Naeem (2004) Biographical Notes on Eminent Muslim Scientists of South-Asia in the 14th Century Hijra. Vol. III.
56. Jafar, S.M., and M.M. Qurashi (2005) Science, Islam and Education.
57. Khan, Khalid Mahmood, and Mushtaq Ahmad Khan (Eds.) (2005) Sanitary and Phytosanitary Measures in the Wake of Trade Liberalization: Challenges to Agriculture in Developing Countries. University of Agriculture, Rawalpindi, Pakistan, 150 pp.
58. Muhammed, Amir, and S. Sajidin Hussain (Eds.) (2005) Global Change Perspective in Pakistan: Challenges, Impacts, Opportunities and Prospects; organized by APN CAPABLE, Agro-Dev International, and Pakistan Academy of Sciences, Islamabad, 248+xiii pp.
59. Nasim, Ghazala, Rukhsana Bajwa, and Amir Muhammed (2005) Kurrah-e Arz ki Tabdili aur Nizam-e Arzi (a Summary; Urdu). Sponsored by Pakistan Academy of Sciences, 60 pp.
60. Kazi, A.Q. and Maulana Misbah-ur-Rehman Yusufi (2005) Human Cloning and Its Implications.
61. Jafar, Syed Muhammad (2005) Papers on Science, Islam and Education, Vol. III. Islam: The Knowledge-based Religion. Pakistan Association for History & Philosophy of Science, and Pakistan Academy of Sciences, 50 pp.
62. Hafeez, M.A. (Ed.) (2006) Year Book of Pakistan Academy of Sciences, 2004–2005. Pakistan Academy of Sciences, Islamabad, 88 pp.
63. Siddiqui, M.M., and Muhammad Jafar (2006) Family Planning in the Light of Islamic Directives and Principles of Genetics. Pakistan Academy of Sciences, and Pakistan Association for History & Philosophy of Science, Islamabad, 41 pp.
64. Jafar, S.M., and M. Tufail (2006) Genetic Principles of inbreeding & Islamic Marriage Prohibitions. Pakistan Academy of Sciences, and Pakistan Association for History & Philosophy of Science, Islamabad, 37 pp.

65. Hussain, Tajammul, and M. Tufail (2006) Deleterious Impacts of the Internet & Possible Remedies. Pakistan Academy of Sciences, and Pakistan Association for History & Philosophy of Science, Islamabad, 56 pp.
66. Siddiqui, M. Mian, and S. Muhammad Jafar (2006) Family Planning in the light of Islamic Directives and Principles of Genetics. Pakistan Academy of Sciences, and Pakistan Association for History & Philosophy of Science, Islamabad, 41 pp.
67. Pakistan Academy of Sciences (2006) Abstracts of International Seminar on "Intellectual Property and Innovation: Value Creation in the Knowledge Economy", 12-13 December 2006. Pakistan Academy of Sciences, Islamabad.
68. Ali, Mahbub (2007) Cotton Research & Development: Memoranda till 60's. Pakistan Academy of Sciences, Islamabad, 345 pp.
69. Pakistan Academy of Sciences (2007) Abstracts of "National Research Conference". Pakistan Academy of Sciences, Islamabad.
70. Hafeez, M.A. (Ed.) (2008) Year Book of Pakistan Academy of Sciences 2006–2007. Pakistan Academy of Sciences, Islamabad, 106 pp.
71. Pakistan Academy of Sciences (2008) Abstracts "International Research Conference: Life Sciences, Earth Sciences, Management Sciences, Social Sciences, Computer Sciences, and Economics". Higher Education Commission, University of South Asia, and Pakistan Academy of Sciences, 18 pp.
72. Butt, N.M., and K. Yaldrum (Eds.) (2009) The Excitement of Science: Reflections of some eminent Pakistani scientists on why they chose science as a career. Pakistan Academy of Sciences, Islamabad, 145 pp.
73. Hafeez, M.A. (Ed.) (2009) Year Book of Pakistan Academy of Sciences 2008–2009. Pakistan Academy of Sciences, Islamabad, 103 pp.
74. NASIC (2010) International Seminar "Alternate Sources of Energy: Prospects and Options", 14–15 October 2010, Islamabad, Pakistan. Organized by Network of Academies of Sciences in Islamic Countries (NASIC), Pakistan Academy of Sciences (PAS), OIC Standing Committee on Scientific & Technological Cooperation (COMSTECH), The Academy of Sciences in the Developing World (TWAS), and The Global Network of Science Academies (IAP). Pakistan Academy of Sciences, Islamabad, Pakistan, 231 pp.
75. Akhter, M. Salim, M.W. Akhter, N.S Akhter, and K. Mahmood (2011) Essentials of Perinatal and Neonatal Medicine. Pakistan Academy of Sciences, Islamabad, and HMR Publishing Company, Lahore, Pakistan, 120+v pp.
76. NASIC (2011) Proceedings of "International Seminar on Poverty Alleviation through Sustainable Resource Management", 8–10 March 2011, Islamabad, Pakistan. Organized by Network of Academies of Sciences in Islamic Countries (NASIC), Pakistan Academy of Sciences (PAS), OIC Standing Committee on



Scientific & Technological Cooperation (COMSTECH), The Academy of Sciences in the Developing World (TWAS), and The Global Network of Science Academies (IAP). Pakistan Academy of Sciences, Islamabad, Pakistan, 201 pp.

77. Pakistan Academy of Sciences (2012) Pakistan's Energy Crisis – Recommended Solutions. The Pakistan Academy of Sciences, in association with The Corporate Advisory Council (CAC) Secretariat, and National University of Sciences and Technology (NUST), Islamabad, 51 pp.
78. Subhan-ud-Din (Ed.) (2012) Year Book of Pakistan Academy of Sciences, 2010-2011. Pakistan Academy of Sciences, Islamabad, 116 pp.
79. Pakistan Academy of Sciences (2012) National Science Conference: Roadmap of Cutting Edge Technologies, 10–12 January 2012, PMAS Arid Agriculture University, Rawalpindi. Pakistan Academy of Sciences, Islamabad, Pakistan, 358 pp.
80. Rashid, Abdul (Editor) (2012) PAS-CAS Conference: Abstracts and Resume of Speakers, 16 July, 2012, Islamabad, Pakistan. Pakistan Academy of Sciences, Islamabad, Pakistan, 96 pp.
81. NASIC (2012) Proceedings of Biodiversity in the Desert Areas: Present Status, Threats and Remediation, 13–14 September 2012, Rabat, Morocco. Organized by Network of Academies of Sciences in Islamic Countries (NASIC), Pakistan Academy of Sciences (PAS), Islamic Educational, Scientific and Cultural Organization (ISESCO), and The Global Network of Science Academies (IAP). Pakistan Academy of Sciences, Islamabad, Pakistan, 273 pp.
82. Rashid, Abdul (Ed.) (2014) Year Book of Pakistan Academy of Sciences, 2012-2013. Pakistan Academy of Sciences, Islamabad, 122 pp.
83. Subhan-ud-Din and Rashid, Abdul (Eds.) (2014) Charter and Bye-Laws of the Pakistan Academy of Sciences. Pakistan Academy of Sciences, Islamabad, 25 pp.
84. Rashid, Abdul (Ed.) (2014) 3rd PAS-CAS Bi-National Conference: Abstracts and Resume of Speakers, 22 December (2014), Islamabad, Pakistan. Pakistan Academy of Sciences, Islamabad, Pakistan, 40 pp.
85. Rashid, Abdul (Ed.) (2014) 60 Years of Pakistan Academy of Sciences: Milestones and Salient Activities. Pakistan Academy of Sciences, Islamabad, 92 pp.
86. Shinwari, Zabta Khan (Ed.) (2015) Dual-Use Education Concerns in Biotechnology: Pakistani Perspective. Department of Biotechnology, Quaid-i-Azam University and Pakistan Academy of Sciences, Islamabad, Pakistan, 63 pp.
87. Rashid, Abdul (Ed.) (2015) Proceedings of the Scientists Meeting, 23-27 August, 1965. Pakistan Academy of Sciences, Islamabad, 40 pp.
88. Rashid, Abdul (2016) Abstract Book of AASSA-PAS Regional Workshop on Challenges in Water needs to meet the Growing Food Requirement, 35 pp.

89. Rashid, Abdul (2016) Proceedings of AASSA-PAS Regional Workshop on Challenges in Water needs to meet the Growing Food Requirement, 291 pp.
90. Rashid, Abdul (2016) Abstract Book of a Joint Pakistan-U.S. Workshop on “Strengthening and Sustaining a Network of Public and Animal Health Clinical Laboratories in Pakistan”, 39 pp.
91. Rashid, Abdul (Ed.) (2016). Year Book of Pakistan Academy of Sciences, 2014-2015. Pakistan Academy of Sciences, Islamabad
92. Rashid, Abdul and Iqar, Irum (Eds.) (2018). Year Book of Pakistan Academy of Sciences, 2016-2017. Pakistan Academy of Sciences, Islamabad
93. Ikram, Aamer., Guenther, Rita and Rusek, Benjamin (2019). Good Clinical Laboratory Practices in Pakistan. Pakistan Academy of Sciences, Islamabad
94. Qureshi, Riaz Hussain and Ashraf, Muhammad (2019). Water Security Issues of Agriculture in Pakistan. Pakistan Academy of Sciences, Islamabad
95. Qureshi, Riffat Mahmood and Iqar, Irum (Eds.) (2019). Abstract Book AASSA-PAS Regional Workshop on Complementary Medicine as an Answer to Challenges faced in Achieving Sustainable Goals in Health, Pakistan Academy of Sciences, Islamabad
96. Qureshi, Riffat Mahmood and Iqar, Irum (Eds.) (2019). Proceedings of AASSA-PAS Regional Workshop on Complementary Medicine as an Answer to Challenges faced in Achieving Sustainable Goals in Health, Pakistan Academy of Sciences, Islamabad
97. Iqar, Irum (Ed.) (2020). Year Book of Pakistan Academy of Sciences, 2018-2019. Pakistan Academy of Sciences, Islamabad
98. Iqar, Irum (Ed.) (2021). Proceedings of the AASSA-PAS Webinar Series / Hybrid Workshops 2021 on “Pandemic Preparedness: Science and Countermeasures”. Pakistan Academy of Sciences, Islamabad



7. 2020-2021 ACTIVITIES OF THE ACADEMY

7.1. Projects Executed

7.1.1. Projects Executed by Fellows of the Academy

1. Microbiome profiling of the cotton plant under Cotton Leaf Curl Disease attack; **Dr. Kauser A. Malik**
2. Potential anti-inflammatory agents from local medicinal plants for treatment of inflammation associated with various diseases; **Dr. Bina Shaheen Siddiqui**
3. Facile preparation of binder free Prussian blue analogue based electrodes for enhanced water oxidation activity; **Dr. Saqib Ali**
4. Anti-adipogenic potential of *Cissus quadrangularis*: Molecular Evidence; **Dr. A. R. Shakoori**
5. Biosynthesis of recombinant laccase from bacterial source for textile industry and waste water treatment; **Dr. Ikram ul Haq**
6. Heteropolyacids immobilized on mesoporous silica as heterogeneous catalysts for one-step transesterification process of low cost triglycerides and related feedstock; **Dr. Amin Badshah**
7. To determine the Genetic Risk Factors for Stroke and Database establishment for personalized Medicine in Pakistan; **Dr. Azra Khanum**
8. Physical Viability and Stability of some Cosmological Models in Modified Gravity; **Dr. M. Sharif**
9. Development of a reliable, cost-effective and high throughput serodiagnosis method for tuberculosis; **Dr. M. Waheed Akhtar**
10. Petrographic and Petrologic studies in Kohistan magmatic arc (northern Pakistan) and Nagar Parkar igneous complex (southeastern Pakistan); **Dr. M. Qasim Jan**
11. Nonlinear modeling of Nano fluids with entropy generation; **Dr. Tasawar Hayat**
12. Oxidative Stress in Severely Obese Children and its Impact on Metabolic Dysfunction; **Dr. M. Arslan**
13. Fabrication of glucose sensor based on Metal Organic Frameworks interconnected by CNTs and decorated with metallic nanoparticles; **Dr. M. Aslam Baig**

7.1.2. Projects Executed by Members of the Academy

1. Molecular Understanding of Fluorosis using Metabolomics-Mass Spectrometry Approach; **Dr. Syed Ghulam Musharaf**
2. Comparative Assessment of Biological Potential of some Novel Medicinal Plants of Gilgit-Baltistan; **Dr. Tariq Mahmood**

3. Mechanism for synergic removal of antibiotic and ARG in livestock wastewater using laccase immobilized by composited/modified graphene oxide materials; **Dr. M. Zaffar Hashmi**
4. CNTs encapsulated FeIII/II-CeIV and FeIII/II-InIII based Prussian Blue analogues as electrode materials for rechargeable ion batteries; **Dr. Ali Haider**
5. Nutraceutical Analysis of Precious wild edible Fruits Diversity in Lesser Himalayas Pakistan; **Dr. Mushtaq Ahmad**

7.2. Conferences, Seminars, Workshops, Webinars, Symposium and Meetings Organized

7.2.1. Conferences/Workshops/Symposium/Meeting Organized by Fellows of the Academy

1. International Symposium of Plant Life of South Asia at University of Karachi - February 24-27, 2020; **Dr. Muhammad Qaiser**
2. International School on Physics and Allied Disciplines (ISPAD) at National Center for Physics, Islamabad - March 9-13 2020; **Dr. Hafeez R. Hoorani**
3. 4th International Conference on Biosciences at Dr. A. Q. Khan Institute of Biotechnology & Genetic Engineering (KIBGE), University of Karachi - March 31-April 02, 2020; **Dr. Ikram ul Haq**
4. 4th International Conference on Applied Zoology (ICZA-2021) at Quaid-i-Azam University, Islamabad - November, 24-25, 2021; **Dr. Zabta Khan Shinwari**

7.2.2. Conferences/Workshops at PAS Headquarters

S. No.	Topic	Organizers	Date
1.	Webinar on COVID-19 and Open Science	Pakistan Academy of Sciences (PAS) & United Nations Educational, Scientific and Cultural Organization (UNESCO)	May 11, 2020
2.	Web-based Seminar on "COVID-19: 2020 and Beyond"	Pakistan Academy (PAS) of Sciences (Sindh Chapter), LEJ National Science Information Center, & International Center for Chemical and Biological Sciences (ICCBS), University of Karachi	September 5, 2020
3.	National Science Day 2021	Pakistan Academy of Sciences	January 29, 2021
4.	Lessons and Opportunities for COVID-19 Research and Development in Pakistan	Pakistan Academy of Sciences (PAS) & Aga Khan University, Karachi	February 4, 2021



S. No.	Topic	Organizers	Date
5.	AASSA-PAS Webinar Series / Hybrid Workshops 2021 "Pandemic Preparedness: Science and Countermeasures" AASSA-PAS Webinar I on SDGs and Pandemics	Pakistan Academy of Sciences (PAS), Association of Academies and Societies of Sciences in Asia (AASSA) & InterAcademy Partnership (IAP)	April 27, 2021
6.	AASSA-PAS Webinar II on Pandemics Preparedness, One Health: Lessons Learnt	Pakistan Academy of Sciences (PAS), Association of Academies and Societies of Sciences in Asia (AASSA) & InterAcademy Partnership (IAP)	May 4, 2021
7.	AASSA-PAS Webinar III / Hybrid Workshop on "How to Counter Infodemics: Role of Scientists & Role of Complementary Medicine in Pandemics" and "Diagnosis, Critical Care; Vaccines and Herd Immunity"	Pakistan Academy of Sciences (PAS), Association of Academies and Societies of Sciences in Asia (AASSA) & InterAcademy Partnership (IAP)	May 25, 2021
8.	Fourth International Conference on Biosciences (ICBS-2021)	Department of Plant Sciences, Faculty Biological Sciences, Quaid-i-Azam University, Islamabad, Biological Society of Pakistan (BSP) & Pakistan Academy of Sciences (PAS)	June 7, 2021
9.	AASSA-PAS Webinar IV / Hybrid Workshop on COVID-19 and Higher Education: Addressing Food Insecurity through Policy Support and Research	Pakistan Academy of Sciences (PAS), Association of Academies and Societies of Sciences in Asia (AASSA) & InterAcademy Partnership (IAP)	June 24, 2021
10.	Reference for (Late) Dr. A. Q. Khan N.I. & Bar, H.I.	Pakistan Academy (PAS) of Sciences	October 21, 2021
11.	PAS-PNS joint Seminar on Afforestation of Global Deserts for Sustainable Future of Earth Environments	Pakistan Academy of Sciences (PAS) and Pakistan Nuclear Society (PNS)	November 24, 2021

7.2.3. Popular Science Lecture

S. No	Topic	Speaker	Date
1.	Caspian Sea, Water Fluctuations and the Effects on the Human History	Prof. Dr. Mustafa ERGUN Executive Director Inter-Islamic Science & Technology Network on Oceanography (INOC), Izmir, Republic of Turkey	January 16, 2020

S. No	Topic	Speaker	Date
2.	Special Lecture on Equality in Education	Dr. Hazir Ullah Associate Professor Sociology & Director ORIC Quaid-i-Azam University Islamabad	February 9, 2021
3.	PAS AI Lecture Series 1 st Talk AI and Deep Learning in Ophthalmology	Dr. Muhammad Usman Akram Associate Professor National University of Science and Technology, Islamabad	December 23, 2021

7.2.4. Conferences, Seminars, Workshops, Webinars, Symposium, and Meetings Organized by PAS during 2020 and 2021

7.2.4.1. Popular Science Lecture by Prof. Dr. Mustafa ERGUN - January 16, 2020

Prof. Dr. Mustafa ERGUN, Executive Director, Inter-Islamic Science & Technology Network on Oceanography (INOC), Izmir, Republic of Turkey delivered a lecture on the Caspian Sea, Water Fluctuations and the Effects on Human History on January 16, 2020, at the Pakistan Academy of Sciences (PAS) auditorium.

Dr. Ergun was specially invited by Dr. M. Qasim Jan, President PAS for this popular talk to benefit scientists and academicians in Pakistan. Prof. Dr. Mustafa ERGUN described the Caspian Sea geography and formation, climate change and Caspian Sea level fluctuations, Noah's floods, civilizations created by the Caspian region, and archeological and language connections.

Over 70 participants including, scientists, engineers, educationists, academicians and students from various Universities and Scientific Organizations attended the lecture.

7.2.4.2. PAS Co-organized a Webinar on COVID-19 and Open Science with the UNESCO, Islamabad - May 11, 2020

The Pakistan Academy of Sciences (PAS) in collaboration with The United Nations Educational, Scientific and Cultural Organization (UNESCO) hosted a webinar on COVID-19 and Open Science (as a follow-up to the UNESCO Virtual Online Ministerial Dialogue on COVID-19 and Open Science) on May 11, 2020. A group of panelists headed the event namely; Ms. Patricia M. Philip, Director of UNESCO; Prof. Dr. M. Qasim Jan, President Pakistan Academy of Sciences (PAS), Islamabad; Dr. Tariq Banuri, Chairman Higher Education Commission (HEC); Maj. Gen. Aamer Ikram, Executive Director (ED) National Institute of Health and Sciences; Prof. Dr. Zabta Khan Shinwari Vice-Chair World Commission on Ethics of Science Knowledge and Technology (COMEST); Dr. Shahbaz Khan, Director UNESCO Jakarta (Regional Science Bureau for Asia and the Pacific) and Prof. Saeed Khan, Focal Person COVID-19, Dow University of Health Science. These experts recommended actionable areas through an engendered, animated, and constructive deliberation. This webinar resulted in producing the "Islamabad Statement for Action on Open Science". The Islamabad Statement for Action reaffirms that Open Science will bring together scientific research and innovation communities across the



nation in strengthening the interface between science and society for evidence-based policy actions for managing major challenges such as COVID-19. World wide, researchers and technology developers, engineers, academia, and innovators, from private and public sectors, have been embracing the open science concept for making data and scientific knowledge more accessible, intending to leave no one behind. Linkages between knowledge systems, the 'hard core science' and citizen science are critical for ensuring that 'no one is left behind' and are steering science to deliver solutions for major challenges facing society. In the case of Pakistan, open science can help bridge divides between advanced research institutes and emerging centers of excellence in the academic and private sectors. It can also bring much-needed emphasis on south-south cooperation for sustainable development through better accreditation of qualifications and peer-reviewed research. The unique mobilization of the world's scientific community during COVID-19 is a testimony of the increasing value of 'open science' without borders through political leadership. The implementation of the open science approach enforces the basic human right of access to scientific knowledge.

7.2.4.3. World Science Day for Peace and Development 2020 - November 10, 2020

UNESCO Islamabad in collaboration with the Commission on Science and Technology for Sustainable Development in the South (COMSATS), the Organization of Islamic Cooperation Standing Committee on Scientific and Technological Cooperation (COMSTECH), the Economic Cooperation Organization Science Foundation (ECOSF), the Pakistan Science Foundation (PSF) and the Pakistan Academy of Sciences (PAS), celebrated World Science Day for Peace and Development, at the COMSTECH Secretariat, Islamabad. Since 2001, World Science Day for Peace and Development is celebrated to highlight the important role of science in society and the need to engage the wider public in debates on emerging and important contemporary issues relevant to science. As this year has been marked by the COVID-19 pandemic, the theme of the 2020 celebration is Science for and with Society.

Mr. Fawad Ahmad, Federal Minister for Science and Technology remarked that now exists an opportunity to renew our resolve for the noble purpose of advancing scientific knowledge and its practical application so that globally all people can live their lives in peace and freedom in a dignified manner. He emphasized the need for free and equal availability of vaccines on a global level.

Ms. Patricia McPhillips, Representative, and Director UNESCO Islamabad, Dr. M. Iqbal Choudhary, Coordinator General COMSTECH, Prof. Dr. Zabta Khan Shinwari, Professor Emeritus, Quaid-i-Azam University, Dr. Manzoor Soomro, President ECO Science Foundation, Dr. M. Aslam Baig, Secretary General Pakistan Academy of Sciences, Dr. Mirza Habib, Pakistan Science Foundation, Ambassador Fauzia Nasreen, COMSATS University, Ms. Kasak Bather, a student from Nawabshah and Mr. Aun Azhar, a student from Sargodha, addressed the importance of science from different aspects of the theme.

The speakers talked about the role of science for society, key issues concerning people and nature interactions, the impact of science for and with society from the youth perspective, science communication, the importance of sharing in-time knowledge and data, and the strengthening international scientific cooperation. The talks provided relevant information and food for thought for the audience that included scientists, students, teachers, researchers, science communicators who work in science centers and science museums, independent science communicators, and science journalists.

7.2.4.4. National Science Day - January 29, 2021

Pakistan Academy of Sciences (PAS) celebrated "National Science Day (NSD)" for the first time on January 29, 2021. Prof. Dr. Tasawar Hayat, Secretary General PAS, started the event and welcomed all the guests. Prof. Khalid Mahmood Khan, President PAS, welcomed all the distinguished guests and speakers.

He appreciated all the scientists, fellows, and students for attending the event physically or virtually. He informed that the first NSD was dedicated to the achievements and contributions of Dr. Abdus Salam, the first Nobel Laureate of the Islamic World. PAS will continue withholding these high-level conferences in the coming years and would invite a larger number of participants. Each event will be dedicated to a distinguished scientist of Pakistan.

Major (Retd.) Dr. Malik Qaiser Majeed, Additional Secretary, Ministry of Science and Technology, was the Chief Guest of this event. In his remarks, he expressed gratitude for having been invited as Chief Guest. He threw a brief light on the contributions of the Ministry for the promotion of Science, Technology, Innovation, policy formulation, capacity building, and popularization of science in Pakistan.

He further added that such events, including World Science Day, are also celebrated by, the Ministry of Science and Technology (MoST) and MoST- PAS can join hands for future activities. Three talks were delivered by Fellows of the PAS: Prof. Dr. Iftikhar Ahmad (VC Gomal University) talked on "Growing shadows of uncertainties in Higher Education Sector of Pakistan", Prof. Dr. Hafeez-ur- Rehman Hoorani (Director-General, National Centre for Physics, Quaid-i-Azam University (QAU)) spoke on "Unification of fundamental forces", and Prof. Dr. Ghulam Murtaza (Emeritus Professor of Physics at QAU) delivered an engaging talk on "Abdus Salam-- Journey from Jhang to Royal Palace Stockholm".

In the end, Prof. Dr. Tasawar Hayat, Secretary General PAS, thanked the invited speakers for their impressive presentations and the attendees for taking time out of their busy schedules. He informed that NSD will be a permanent feature of PAS activities in the future. The idea behind this event is to popularize science in Pakistan through lectures and seminars from the platform of PAS, as well as to provide opportunities for scholars and scientists to interact.



7.2.4.5. Lessons and Opportunities for COVID-19 Research and Development in Pakistan - A Virtual Round Table - February 4, 2021

Background to the workshop and format

COVID-19 has changed perceptions and the ways we live our lives. It has put a burden on health care systems and hence we need to strengthen our systems without being dependent on other countries. In this pandemic, economies halted; business suffered, and a lot happened. This was the first year and also the first such major test in Pakistan's history of objectively evaluating what the lessons are, not only for implementation, clinical care, response, but with a focus on what are the gaps and opportunities in the research and development pathway that Pakistan adopted. A lot of efforts were made by the Government especially in the area of providing reliable testing facilities across the country, implementation of smart lockdowns, contact tracings, the establishment of the National Institute of Virology in Sindh, investment in manufacturing ventilators locally, and strengthening of public and private healthcare facilities. The private sector also worked hand in hand with the Government and supported the healthcare systems in the available limited resources. Media outlets were also very responsive and responsible for ensuring prompt sharing of data and providing firsthand information to the public.

Despite limited resources, Pakistan was among the first countries to be tested. There has been widespread and global praise for Pakistan for the way it organized and implemented Covid-19 strategies and Pakistan is fortunate not to have paid huge prices for not doing the right things at the right times, like other countries. The challenges, however, are ahead of us. Challenges like changing strains of the coronavirus, absence of integrated communication network amongst public and private sectors, varying efficacies of the recently developed vaccines; limited testing facilities, and others.

Pakistan Academy of Sciences and the Aga Khan University jointly organized this Virtual Round Table with the explicit aim to deliberate and focus on reviewing what we have learnt to date in the COVID-19 response in Pakistan and its implications for what needs to be done to strengthening research and development in major gap areas. The Speakers were Prof. Dr Khalid Mahmood Khan (President PAS), Prof. Dr. Zulfiqar A. Bhutta (Founding Director, Institute for Global Health and Development, The Aga Khan University, Karachi), Hon. Dr Faisal Sultan (Special Assistant to the Prime Minister for Health, Government of Pakistan) Hon. Prof. Dr. Atta ur Rehman (Chairman of the Prime Minister of Pakistan's Task Force on Science & Technology), Prof. Dr Assad Hafeez (Vice Chancellor, Health Services Academy, Islamabad), Maj. Gen. Aamer Ikram, (Executive Director, National Institute of Health, Islamabad), Dr. Zahra Hasan (Professor, Pathology and Laboratory Medicine, The Aga Khan University, Karachi), Dr. Zain ul Abedin (Director Research & Development Higher Education Commission, Islamabad, Pakistan), and Prof. Dr. Tasawar Hayat (Secretary General, PAS). Few Fellows also participated in the Round Table discussion.

The agenda of the round table was divided into specific areas, such as knowledge of epidemiology and burden, ability to diagnose, characterize and manage, and important time for participants to think tanks to see what is needed from a natural perspective.

Epidemiology and response

According to the national statistics, a total of 8 million plus tests to screen covid-19 have been conducted nationwide since the inception, with about half a million positive cases, and an encouraging recovery rate of 91.88% (data as of Feb 4, 2021). The Country experienced a cumulative mortality of about 12,000 people.

At the initial stages, it has observed that the frequency of positive cases in the Country was more than the number of tests done, however with the multi-sector investments, the testing capabilities have been significantly enhanced over the past one year. The maximum number of corona positive cases have been reported in the month of June 2020 for the first wave, and in the month of December 2020 for the second wave. The rates of mortality also corroborate with this, with highest number of deaths in June 2020 for the first wave and in Dec 2020 for the second. A kind of third wave has also been observed in the data for the month of Feb 2021. Like other countries, Pakistan was also faced with tremendous challenges. Challenges like the devolved health governance structure, weak health systems surveillance, pressing economies, limited availabilities of medicines required for treatment, balancing the prevention with the societal impact and others.

Despite all these, Pakistan was fortunate to have been able to contain the spread with a mix of efforts from all sectors of the Country. Pakistan invested over US \$ 150 million in screening facilities since the pandemic hit the Country and is continuing to allocate resources to this. The Health Department is also establishing a Center of Disease Control under the recently reformed National Institute of Health (NIH, Pakistan) which will strengthen the capacities of national response to such emergencies. Likewise, Pakistan's Health Research Institute is also being formed under NIH Pakistan to augment the national research and infrastructure initiatives. Special efforts are being made to strengthen the ties between the academia and the business communities to beef up nation's indigenous capacities in drug and vaccine manufacturing, and to enhance digital innovation initiatives to increase the preparedness for health security challenges. Additionally, a bio-tech park is also being established within NIH to lure in companies from private sector for indigenous production of supplies and consumables.

Government's Science Response

Besides the immediate and much needed response from the Health Department, the Government's Science Division was equally prompt in taking initiatives to address this global pandemic.

The Science Division augmented the national initiatives of expanding testing facilities (through a grant from the British Government) and undertaking various clinical trials, specially to ascertain the changing strain of the corona virus, which is now the recent



most challenge. It is believed that the available vaccines will have moderate effect on the mutating virus as the extent of efficacies is still unknown. To get a clearer picture we need to further expand the testing facilities, across the nation; and to be better positioned to fight, we need to develop indigenous facilities of vaccine development. This will not increase decrease the projected financial burden of vaccinating the masses, but also will encourage national manufacturers into developing the required infrastructures.

Conclusions and Way Forward

It is imperative that Pakistan must strengthen its national capacities not only for surveillance but also for monitoring. This can be achieved through a concerted effort and development of a national strategy and an action plan whereby there is active collaboration amongst the public, private, researchers, and academia. It is also important to provide universities and colleges with supportive research opportunities so that research advancement can happen in the Country especially in the area of STEM education. Pakistan does need investments in indigenous vaccines development with an equal focus on biotechnology to safeguard its national security. The roles of national oversight bodies need to be relooked for the Country to be better positioned to support and be prepared for any such pandemic in the future. The Pakistan Academy of Sciences can play an important role in helping bridge the science to policy chasm and act as a platform for honest and transparent debate on the subject. A major next step would also relate to pandemic planning and this workshop could serve as a stepping stone for that planning process.

7.2.4.6. Special Lecture on Equality in Education - February 9, 2021

Pakistan Academy of Sciences (PAS) organized a special lecture on “Equality in Education” on February 09, 2021, in the PAS Auditorium. Dr. Hazir Ullah, Associate Professor Sociology & Director ORIC, Quaid-i-Azam University Islamabad was invited as a Guest Speaker. He spotlighted the existing education inequities in Pakistan. He stressed that education is a basic human right and must be equally accessible to all citizens, irrespective of social class, gender, ethnicity, race, or rural and urban divide as a public good. He argued that the government of Pakistan should focus on the equity of education in society.

Dr. Hazir Ullah stressed Fair and Inclusive education for the welfare of our society. A fair and inclusive educational system ensures access to high-quality education and provides opportunities for personalized learning, personal and social development. He emphasized that the government should respond to the needs of disadvantaged categories (girls, students from lower socioeconomic and rural backgrounds). He demanded a single School System of high quality in addition to a single national curriculum.

In the end, Prof. Dr. Tasawar Hayat, Secretary General PAS, thanked the invited speaker for his impressive presentation.

7.2.4.7. Pakistan Academy of Sciences, Islamabad Holds Reference for (Late) Dr. Abdul Quadeer Khan (N.I. & BAR, H.I.) - October 21, 2021

Pakistan Academy of Science (PAS) held a hybrid Reference Meeting for (Late) Dr. Abdul Quadeer Khan (N.I. & Bar, H.I.), Founding Chairman, Dr. A.Q. Khan Research Laboratories, Kahuta & Fellow Pakistan Academy of Sciences who breathed his last on October 10, 2021 and was buried in H-8 Graveyard, Islamabad.

The Reference Session was well attended by the Fellows and Members of the Academy both physically in the PAS Auditorium as well as virtually (on line). The main objective of the meeting was to pay homage and tributes to this great Nuclear Scientist and Metallurgist of Pakistan who made valuable scientific contributions and achievements in the process of making Pakistan an Atomic Power, the 7th in the entire World and the 1st among the Muslim nations.

Prof. Dr. Tasawar Hayat, Secretary General, Pakistan Academy of Sciences presented Introductory Welcome to the audience. He informed the audience that Dr. A.Q. Khan was elected as Fellow of the Academy in the year 1988. Throughout his association with the Academy and specially during his six years' tenure as President of the Pakistan Academy of Sciences from 1997-2002, Dr. Khan made all out efforts and support for the upgradation and sustainability of scientific and academic activities of the Academy.

Nine Fellows and one Member of the Academy who happened to be close associates of Dr. A.Q. Khan spoke at the occasion and shared their memories and views on the scientific and social life of this highly celebrated nuclear scientist of Pakistan. It was reflected that throughout his scientific career, Dr. A.Q. Khan remained a strong source of encouragement and support for his fellow colleagues, associated scientific community including scientists, engineers and researchers at the Academy and within the strategic scientific institutions, as well as students with in universities, colleges and schools and above all the common masses.

In his closing address, Dr. Khalid Mahmood Khan, President Pakistan Academy of Sciences lauded Dr. A.Q. Khan for his high grade technical and management skills that enabled Pakistan to achieve wonders in the field of defense and cutting-end technology. His intellectual contributions to Pakistan were enumerable and his determination remained unmatched throughout his scientific & professional career. He praised Dr. Khan for his significant contributions for the uplift of the Academy and recommended that the Academy may initiate yearly Award of A.Q. Khan Gold Medal to an acclaimed researcher in the field of science & technology in Pakistan.

The meeting concluded that as one of the most highly decorated scientist of Pakistan, (Late) Dr. A.Q. Khan has left behind a rich harvest of sweet memories and marvelous achievements as inspiration for all those who know him and for the generations to come. The nation will always remember him as Mohsin-e-Pakistan.



7.2.4.8. PAS-PNS Joint Seminar on “Afforestation of Global Deserts for Sustainable Future of Earth Environments” - November 24, 2021

Pakistan Academy of (PAS) and Pakistan Nuclear Society (PNS) jointly organized a One-day Seminar on “Afforestation of Global Deserts for Sustainable Future of Earth Environments”, on November 24, 2021. Prof. Dr. M. Aslam Baig, Former Secretary General PAS, on behalf of PAS gave the welcome Address. Dr. Yusuf Zafar, Ex Chairman, PARC was the Chief Guest of the Event. Renowned scientists and from academia and relevant governmental organization attended the event.

7.2.4.9. PAS Artificial intelligence (AI) Lecture Series

With the aspiration to give a future vision and research direction in Artificial Intelligence (AI) and Internet of Things (IoTs) to our young scientists, the Pakistan Academy of Sciences (PAS) is organizing a lecture series on Artificial Intelligence and Internet of Things (AI & IoTs 2021-22) from Dec 2021 to June 2022 in collaboration with Quaid-i-Azam University, Islamabad and Network of Academies of Science in Countries of the Organization of Islamic Conference (NASIC). The lecture series is facilitated by a Member of the Academy, Dr. Muazzam A. Khan Khattak (Tenured Associate Professor at the Department of Computer Science, Quaid-i-Azam University, Islamabad, Pakistan).

7.2.4.9.1. PAS AI Lecture Series 1st Talk on AI and Deep Learning in Ophthalmology - December 23, 2021

PAS AI Lecture Series 1st Talk was delivered by Dr. Muhammad Usman Akram working as an Associate Professor at the National University of Science and Technology, Islamabad on the topic AI and Deep Learning in Ophthalmology on December 23, 2021. Prof. Dr. Tasawar Hayat, Secretary General PAS introduced the Speaker and thanked all the participants for attending the lecture either virtually and physically. Prof. Khalid Mahmood Khan, President Pakistan Academy of Sciences presented the welcome address. He emphasized on the importance of Artificial Intelligence (AI) and the Internet of Things (IoTs). The Speaker covered Artificial Intelligence (AI) and Machine Learning (ML) applications in the area of ophthalmology and what are the ways forward in this area. Fellows and Members also attended the lecture.

7.3. Visit of Federal Secretary, Ministry of Science and Technology (MoST) to Pakistan Academy of Sciences

Mr. Nadeem Irshad Kayani, Federal Secretary, Ministry of Science and Technology (MoST), Government of Pakistan visited the Pakistan Academy of Sciences (PAS) on June 30, 2021, to discuss the PAS's functions and constructive dialogue between the Ministry of Sciences and Technology and the Pakistan Academy of Sciences for Science, Technology and Innovation based development in the country. Prof. Dr. Tasawar Hayat, Secretary General PAS welcomed the Federal Secretary MoST and his colleagues Mr. Zahir Shah (Joint Secretary MoST) and Dr. S. Zaheer Hussain (Dir. Policy Wing, MoST). Prof. Dr. Anwar ul Hasan Gilani (Fellow PAS & VC, University of Haripur) was also present in the meeting. Dr. Riffat M. Qureshi (Director Administration, PAS) gave an overview of the PAS scientific and academic activities. There was valuable discussion among participants to streamline the mechanism for S & T development and innovation.

Secretary MoST appreciated PAS for the establishment of “Scientific Advice to Government Unit/Policy Unit” and the effort of its official/experts in reviewing and up-gradation of policy documents including S & T policy 2021. He also appreciated the idea of the PAS policy unit to join hands with Industrial stakeholders to upgrade policy documentation in a professional manner. Secretary General assured Secretary MoST of his utmost and timely cooperation and collaboration in matters related to Science, technology, and Innovation.

Furthermore, Secretary MoST elaborated that PAS hosts a very useful think tank of its Fellows in almost all domains of interest to the Ministry. Therefore, officials of MoST and PAS must meet frequently in matters related to S & T for proper solutions and advice to Government.

7.4. Inauguration of Pakistan Academy of Sciences Lahore Office in the University of Punjab, Lahore

With the efforts of President and Secretary General, PAS, Prof. Dr. Niaz Ahmad Akhtar, Vice Chancellor of University of the Punjab, Lahore very kindly allocated suitable space (room) for establishment of PAS Lahore Office at the First Floor of the School of Physical Sciences (Undergraduate Block), Quaid-i-Azam Campus, Lahore. The PAS Lahore Office was formally inaugurated on December 2, 2021 by Prof. Dr. Khalid Mahmood Khan, President PAS and Prof. Dr. Niaz Ahmad Akhtar, Vice Chancellor, University of the Punjab. The inauguration ceremony of the Pakistan Academy of Sciences (PAS) Office at the University of Punjab, was held on December 2, 2021. Prof. Dr. Niaz Ahmad Akhtar and Prof. Dr. Khalif M. Khan chaired the inaugural session. Prof. Dr. Khalid Mahmood Khan, President PAS and Prof. Dr. Tasawar Hayat, Secretary General PAS presented the shield to the Vice Chancellor of University of the Punjab, Lahore. A large number of PAS Fellows attended the inaugural ceremony for the PAS Lahore Office.



PAS Lahore Office was formally inaugurated by Prof. Dr. Khalid Mahmood Khan, President PAS and Prof. Dr. Niaz Ahmad Akhtar, Vice Chancellor of University of the Punjab along with Prof. Dr. Tasawar Hayat (Secretary General, PAS). A large number of PAS Fellows attended the inaugural ceremony for the PAS Lahore Office – December 02, 2022



After Inauguration, President PAS, Secretary General PAS, VC University of the Punjab along with PAS Fellows visited the PAS Lahore Office. Photographs of PAS Founding Fellows, all Presidents and all Secretary Generals of the Academy were present in PAS Lahore Office

7.5. PAS Chapters Activities

7.5.1. Pakistan Academy of Sciences, Punjab Chapter Organized a Series of On-line Webinars on Agriculture (July- December 2020)

The Pakistan Academy of Sciences (PAS), Punjab Chapter in collaboration with the Partner Organizations organized a series of online Webinars on Agriculture. A webinar series was initiated to compensate for the lack of activities due to COVID19 which has become a success story. Prof. Dr. Iqar A. Khan, Secretary PAS (Punjab Chapter), led these webinars. The objectives of organizing the webinars on Agriculture in Pakistan were to identify the issues and challenges in the yield of the crops and negotiations with stakeholders, policymakers, and experts for the possible way outs to improve these challenges. The series had collaborations with several national and international partners and the Chinese Embassy in Islamabad.

The events were chaired by current and former Federal and Provincial Ministers, Governors, and corporate leaders (Syed Babar Ali, Mr. Sartaj Aziz, Gen Khalid Maqbool, Syed Fakhar Imam, Syed Yawar Ali, Hussain Jahania Gardezi, Sardar Husnain Dreshak, to name a few) along with academics from all parts of the world. The international partners included FAO, IFAD, Chinese Academy of Sciences, ACIAR-Australia, COMSTECH, ICBA-Dubai, and numerous universities. The events were viewed in more than 30 countries. The Fellows and Members of the Academy participated actively in the webinars.

The keynote speakers (>50) were resourced from across the globe in 20 of the 22 events. They were top names in their respective fields, including the 2020 winner of the World Food Prize (Prof. Ratan Lal, Ohio State University). The total participation in 22 events has exceeded 3500, as well as registrations exceeding 6000. Certificates of participation were issued to those wanting to have one.

The following Zoom PAS Agriculture Webinar Episodes were conducted during July – December as follows:

Episode 1: Prevailing Wheat Crises and Future Pathways/Policy Brief

Episode 2: Precision Agriculture and Sustainable Solutions/Policy Brief

Episode 3: Genetic Improvement of Dairy Cattle-American and Pakistani Experiences

Episode 4: A Review of Agriculture Policies of Pakistan

Episode 5: Wheat Seed Supply Chain Analysis

Episode 6: Valuing Zinc Nutrition for Better Crop Production and Human Health

Episode 7: Balanced Fertilizer Application in Wheat

Episode 8: Agricultural and Livestock Innovation System

Episode 9: Animal Nutrition and Fodder Science

Episode 10: Saline Agriculture and Global Food Security

Episode 11: Pulses & Chickpeas: The Peoples Protein in Pakistan

Episode 12: World Food Day Webinar - Grow Nourish & Sustain Together



Episode 13: Citrus Genetic Improvement: Seedlessness and Greening Disease

Episode 14: Weeds Ecology and Management

Episode 15: Vegetable Seed Production and Supply Chain

Episode 16: Oilseed Crop Production and Supply Chain

Episode 17: World Science Day for Peace and Development - Recarbonization of Global Soils: Challenges & Opportunities

Episode 18: Potential of CRISPR/CAS Technology for Improving Agricultural Productivity

Episode 19: World Soil Day

Episode 20: Genome Editing in Crops and Livestock Improvement and Human Health

Episode 21: A Virtual Seminar on One Health in collaboration with COMSTECH

The series is very popular among the industry stakeholders, political leadership, students and academia. A Chinese media house has covered all the events. There is sufficient planning in place to run this work for another year. The academic participants were encouraged to revisit the online/hybrid education model and to learn novel research ideas. The possibilities of collaboration were explored.

It is to be mentioned that proceedings of two events on CRISPR/CAS Nobel Prize of 2020 became part of an S&T project proposal/feasibility (PC-1 by PCSIR/UAF) which has been approved for funding @1800 Million PKR. The academic participants were encouraged to revisit the online/hybrid education model and to learn novel research ideas. The possibilities of collaboration were explored. The YouTube visitation runs into 1000s. Policy briefs (5-10 pages each) were also prepared on all events which are ready for publication as PAS papers or as a compilation in a report form.

All events were recorded and posted on YouTube. The YouTube visitation runs into 1000s. A Chinese Media House covered all events (<https://www.gwadarpro.pk/>; <http://cen.ce.cn/more/>). Policy briefs (5-10 pages each) were also prepared on all events which are ready for publication as PAS papers or as a compilation in a report form.

The series is very popular among the industry stakeholders, political leadership, students, and academia. A Chinese media house has covered all the events. There is sufficient planning in place to run this work for another year.

Pakistan Academy of Sciences appreciates the efforts of Prof. Dr. Iqar A. Khan as he continued the scientific activities through on-line webinars during COVID-19.

7.5.2. Pakistan Academy of Sciences, Sindh Chapter Organized a Web-based Seminar on “COVID-19: 2020 and Beyond” - September 5, 2020

Pakistan Academy (PAS) of Sciences (Sindh Chapter) and LEJ National Science Information Center, International Center for Chemical and Biological Sciences (ICCBS), University of Karachi, Karachi jointly organized a web-based seminar on September 5, 2020 to discuss the impact of previous and current pandemics in human history. The

discussion was also being carried out on impact of COVID-19 on mental health, and economic.

This webinar was held as the initiative of Prof. Dr. Mohammad Wasay, led by Secretary PAS (Sindh Chapter), Prof. Dr. Khalid Mohammed Khan. Prof. Dr. M. Qasim Jan, President PAS greeted the invited speakers and participants in his welcome remarks. Eminent Speakers and the Senior Health Experts including, Dr. Ejaz Shafi Gilani, Chairman Gallup Pakistan; Maj. Gen. Aamer Ikram, National Institute of Health, Islamabad; Prof. Dr. Faisal Mehmood, Aga Khan University, Karachi and Prof. Dr. M. Wasay, Fellow PAS delivered presentations on the taxonomy, immune response, neurotrophic and historic impact of COVID-19 on humans chaired by Rabia Hassan, Fellow PAS. While Prof. Dr. Zulfiqar A. Bhutta FRS, Fellow PAS; Prof. Dr. Faisal Sultan, Special Adviser to Prime Minister on National Health Services, Regulation, and Coordination; Prof. Dr. Muhammad Iqbal Afridi, President Pakistan Psychiatry Society and Prof. Dr. M. Iqbal Choudhry, Coordinator General COMSTECH, Fellow PAS discussed the economic and mental impacts and the present and future trends of Pakistan to tackle this pandemic. This event was attended by the faculty members, staff members, research officers, and students across Pakistan.

The webinar was concluded by Prof. Dr. M. Aslam Baig, Secretary General PAS, with a vote of thanks to the speakers and the participants.

7.5.3. Activities of the KP Chapter

Pakistan Academy of Sciences (KP Chapter) Fellows initiated Lecture Series at newly established universities at Khyber Pakhtunkhwa.

The Khyber Pakhtunkhwa has seen an unprecedented increase in number of public-sector universities reaching to 32 in 2020 and several being in pipeline. The students and faculty at these universities have no exposure to senior faculty members, especially in sciences. In order to motivate the young faculty and students of these universities, the Peshawar Chapter has started a lecture program to be delivered by eminent scientists preferably, fellows of the Pakistan Academy of Sciences on popular science topics. The following is the summary of this activity ongoing in Khyber Pakhtunkhwa.

7.5.3.1. International Chemistry Workshop for Young Scientists - January 23-24, 2020

National Centre of Excellence in Physical Chemistry, ORIC- University of Peshawar and Pakistan Academy of Sciences KP Chapter jointly organized a two day workshop on “International Chemistry Workshop for Young Scientists” in National Centre of Excellence in Physical Chemistry, University of Peshawar from January 23-24, 2020.

Eminent scientists from Pakistan and Turkey presented their research work on the topics in Chemistry including Additive Manufacturing, Biomedical Applications, Biocompatible Alloy Development Applications, Magnetic Materials Applications, Semiconductor Materials Applications, Semiconductor Materials Applications,



Theoretical Superconductor Material Research, Additive Manufacturing Technologies, and Sintered Titanium-Hydroxyapatite Biocomposite for Bone Implants.

The workshop was attended by participants including scientists and research students. This workshop was inaugurated by the Vice Chancellor, University of Peshawar, Prof. Dr. Muhammad Asif Khan.

7.5.3.2. PAS Fellow Invited Lecture at the Bacha Khan University, Charsadda - February 3, 2020

The event was organized by the PAS KP Chapter at Bacha Khan University Charsadda on February 3, 2020. Prof. Muhammad Sharif gave a popular talk on “Black Holes and Gravastars”. The honorable speaker briefly described Einstein's theory of general relativity and relate it to the classification, formation, and characteristics of black holes and gravastars. This seminar was attended by a large of number students and faculty members of the university.

7.6. Scientific Advice to Government (SAG) Unit / PAS Policy Unit at the Pakistan Academy of Sciences

In Pakistan, there is a felt gap between challenges being faced by the country and the policy response to these challenges. During the year 2020, the Planning Commission/ Ministry of Planning Development and Reform (GoP) approved the PC-I based development project of the Academy titled: Upgradation and Capacity Building of Pakistan Academy of Sciences (Natural and Social Sciences) as PSDP Project # 302 for a duration of 3 years. Through the PSDP Project, the Pakistan Academy of Sciences offered creation of a Scientific Advice to the Government (SAG)-Unit/Policy Unit at the Academy Secretariat in Islamabad to facilitate compilation of impartial policy reviews/recommendations for upgrades of existing policy documents of various ministries/institutions of the Government of Pakistan and /or fresh policy documents on issues and concerns as referred to the Academy by the government of Pakistan from time to time. Accordingly, an appreciable financial share of the PSDP Project # 302 has been allocated for creation of offices, ITC related infrastructure for officials of the Policy Unit, salary component for Policy Unit related human resource and Honorarium/Travel Allowances for the Members of the Advisory Committee for the Policy Unit.

The idea behind creation of Scientific Advice to the Government Unit or Policy Unit at the Pakistan Academy of Sciences was initially floated by Dr. Athar Osama, the then Member Science of the Planning Commission in Jan, 2019 before the Pre-CDWP Meeting for the PAS/HEC PC-I titled: Upgradation and Capacity Building of Pakistan Academy of Sciences. It was considered as a new developmental initiative for the Pakistan Academy of Sciences to strengthen exchange/sharing of the scientific thought(s) among a knowledgeable active pool of Fellows & Members of the Pakistan Academy of Sciences and the experts/technocrats working within various ministries of the GoP to develop viable strategies/policies for scientific, educational, technological,

industrial, and agricultural development, etc. leading to socioeconomic development in this country. The Pakistan Academy of Sciences profoundly welcomed this concept in line with its aims and objectives. In March 2020, the Planning Commission approved the above mentioned project as PSDP Project # 302. Under this project, the Pakistan Academy of Sciences has established a “Scientific Advice to the Government (SAG) Unit”/Policy Unit of experts for provision of scientific advice to the government, in preparing policy documents on issues of national interest and concerns as and when required by the Government of Pakistan in line with the national Sustainable Development Goals (SDGs).

The “Scientific Advice to the Government Unit (SAG-Unit)/ PAS Policy Unit” comprises of four furnished offices (occupied by experts, resource persons, and interns) which are equipped with working desks, state of the art advance level computing, printing and scanning facilities, internet facilities, etc. A versatile “Video Conferencing Facility (Capacity: ~30-35 participants)” is also associated with the Policy Unit.

The SAG Unit/Policy Unit will initially focus on review/development of Policy Documents related to Science-Technology and Innovation, Educational Reforms, Conventional and Renewable Energy, Industrial Growth and its Linkage with Academia and Scientists, Science Diplomacy & International Affairs, Peace and Security, Ethics for Socioeconomic Development, Water Security, Preservation of Clean Drinking Water Resources, Small and Large Dam Safety Issues, Agriculture Security, Food Security, Environment and Climate Change, Clean Air, Sustainable Management for Flood Controls, Disaster Management, etc. for the stability and prosperity of Pakistan. As such, the creation of Scientific Advice to the Government Unit / Policy Unit at the Academy will certainly strengthen the capacity of the Academy to provide high quality scientific advice and policy documents to the GoP on matters of national concern and to perform projects related to cutting edge research for industrial and socioeconomic development in Pakistan.

Aim - SAG Unit

“Play a vital role in the review of existing policies and/or developing new policies in relation to national Sustainable Development Goals (SDGs)”

Scope - SAG Unit

Initially focus on review/development of Policy Documents related to Science and Technology, Educational Reforms, Conventional and Renewable Energy, Industrial Growth and its Linkage with Academia and Scientists, Economics, Water Security, Preservation of Clean Drinking Water Resources, Small and Large Dam Safety, Agriculture Security, Food Security, Industrial Growth, Environment and Climate Change, Clean air, Science Diplomacy & International Affairs, Peace and Security, Disaster Management, etc. for the stability and prosperity of the country.



Goal - SAG Unit

- 5-6 “Policy Briefs/Outputs” per year on issues of vital national concern to be indicated/assigned by the GoP and in the domain of natural sciences and social sciences
- Collaboration with HEC, set-up an Advisory Committee to advise the Academy and the Director SAG-Unit on establishing processes and norms for operation of the “SAG-Unit

Policy reviews/recommendations

Pakistan Academy of Sciences offered impartial Policy reviews/recommendations for upgrades of existing policies and / or compilation of fresh policy documents to the Government of Pakistan through the SAG-Unit and in collaboration with PAS Fellows and also on issues and plans referred to the Academy by the government of Pakistan from time to time. In this regard Policy unit had meetings and collaboration with different ministries/ Organizations. The detail of these collaborations has been given in the following table.

Relevant Ministry and Policy Title	Remarks
Ministry of Science and Technology 1. National Science, Technology and Innovation Policy 2012-2013	Collaborated and Policy Upgraded
Ministry of Climate Change 2. Framework for Implementation of Climate Change Policy 2014	Collaborated and Policy Upgraded
Ministry of Federal Education and Professional Training 3. National Education Policy Framework 2018 4. National Curriculum Framework Pakistan 2017 5. Minimum Standards for Quality Education in Pakistan 2017	Collaboration Under Progress
Ministry of Water Resources 6. National Environmental Policy 2005 7. National Drinking Water Policy 2009 8. National Water Security Policy	Collaboration Under Progress
Ministry of National Food Security and Research 9. National Food Security Policy -29 May 2018	Collaboration Under Progress

i. Ministry of Climate Change

National Climate Change Policy (NCCP)

Pakistan Academy of Sciences SAG unit joined hand with Ministry of Climate Change for upgradation of National Climate Change Policy. Dr. Riffat Mahmood Qureshi (Rtd. Chief Scientist PINSTECH) reviewed NCCP draft documents. On 24

March 2021 PAS SAG – Unit forwarded amended draft to advisor Climate Change, Ministry of Climate Change Dr. Qamar Zaman Chaudhry.

ii. Ministry of Science and Technology (MoST)

National Science, Technology and Innovation Policy 2022

PAS SAG-Unit collaborated with the Ministry of Science and Technology for review and up-gradation of National Science, Technology and Innovation Policy 2022. Visit of Federal Secretary, MoST to PAS on 30th June 2021, to discuss PAS functions and constructive dialogue between PAS and MoST for Science, Technology and Innovation based development in the country.

Another a consultative meeting was held at MoST on 12 July 2021, and Secretary General of PAS participated along with the write up written/compiled by the PAS Policy Unit. Secretary MoST appreciated PAS for the establishment of “Scientific Advice to Government Unit/Policy Unit” and the effort of its official/experts in reviewing and up-gradation of policy documents, including S & T policy 2021. He also appreciated the idea of the PAS policy unit to join hands with Industrial stakeholders to upgrade policy documentation in a professional manner. Secretary General assured Secretary MoST of his utmost and timely cooperation and collaboration in matters related to Science, technology and Innovation.

iii. Ministry of Water Resources

Groundwater Data Accumulation for the Country

Ministry of Water Resource requested Pakistan Academy of Sciences, Policy unit for provision of Groundwater Data Accumulation of Pakistan vide letter No. 2(18)/2018-Water dated September 16, 2021. PAS Policy unit submitted a compiled report to Ministry for further submission to Senate Standing Committee on Water Resources. Fellow of Pakistan Academy of Sciences Prof. Dr. M. Qasim Jan (HI. SI. TI), also attended the standing committee meeting on November 4, 2021 on subject matter.

Pakistan Academy of Sciences SAG unit collaborated with the below mentioned departments for **“Scientific Advice for Sustainable Implementation of Nation Water Policy”**.

1. Ministry of Water Resources
2. Ministry of Planning, Development & Special Initiatives (Water Resources Section)
3. Pakistan Council of Research in Water Resources (PCRWR)

Through the PSDP Project#302, the Pakistan Academy of Sciences (PAS) offers **impartial policy reviews/recommendations for upgrades of existing policies and /or compilation of fresh policy documents** for the Government of Pakistan.



7.7. International Liaison

The Pakistan Academy of Sciences has been signing MoUs with different science academies of the world from tie to tie since its establishment. When PAS signs MoU with an academy then the premier objective for signing the formal document is to promote joint scientific and technological pursuits by effectively involving both the academies.

7.7.1. Goals of Collaboration

The objectives of scientific collaboration with other academies of sciences are:

1. Coordination of joint research projects
2. Participation of scientist in bilateral symposia, seminars, researcher training courses and workshops
3. Exchange visits by the scientist
4. Exchange of scientific publication, information, and expertise on evaluation of science and funding procedures

7.7.2. MoUs with Other Academies of Sciences

Recognizing the importance of scientific cooperation, the PAS has signed Memoranda of Understanding (MoUs) with the following Academies:

S. No.	Academy	Date of Signing MoU	Coordinator
1.	Chinese Academy of Sciences	March 30, 2000	Prof. Dr. M. Iqbal Choudhary
2.	Nigerian Academy of Sciences	March 17, 2004	Prof. Dr. M. Ajmal Khan
3.	Bangladesh Academy of Sciences	April 5, 2002 (Renewed on April 20, 2005)	Prof. Dr. Kauser A. Malik
4.	Indian National Sciences Academy	January 07, 2006	Prof. Dr. G. A. Miana
5.	Khorezm Mamun Academy	July 12, 2006	Prof. Dr. M. Qasim Jan
6.	International Academy of Sciences, Austria	April 11, 2007	Prof. Dr. M. Aslam Baig
7.	International Academy of Sciences, Azerbaijan Section	April 11, 2007	Prof. Dr. M. Asif Khan
8.	The Academy of Sciences of the Czech Republic	May 10, 2007	Prof. Dr. Khalid M. Khan
9.	The Royal Society of Edinburgh	November 8, 2007 (Renewed on January 15, 2016)	Prof. Dr. N. M. But

S. No.	Academy	Date of Signing MoU	Coordinator
10.	National Academy of Exact, Physical and Natural Sciences of Argentina	November 20, 2008	Prof. Dr. M. Ashraf
11.	TWAS, the Academy of Sciences for the Developing World	March 10, 2011	Prof. Dr. Tasawar Hayat
12.	Nepal Academy of Science and Technology	September 8, 2012	Dr. Anwar Nasim
13.	Sri Lankan Association for Advancement of Science	November 11, 2014	Dr. Anwar Nasim
14.	Turkish Academy of Sciences (TUBA)	February 17, 2015	Dr. Anwar Nasim
15.	National Academy of Sciences of Belarus (NASB)	May 27, 2015	Dr. Anwar Nasim
16.	Latvian Academy of Sciences	March 22, 2016	Dr. Anwar Nasim
17.	Regional Information Center for Science and Technology (RiCeST), Iran	July 19, 2016	Prof. Dr. Zabta Khan Shinwari
18.	Bulgarian Academy of Sciences (Memorandum of Cooperation)	November, 2016	Dr. Anwar Nasim
19.	International Silk Road Academy of Sciences (ISRAS)	May 16, 2017	Prof. Dr. Khalid Mahmood Khan
20.	Alliance of International Science Organization in the Belt & Road Region (ANSO)	November 3, 2018	Prof. Dr. M. Qasim Jan

7.7.3. Implementation of MoUs

Some of the MoUs are viable, whereas others are dormant. Very genuinely, therefore the Council and the General Body of the Academy have stressed upon for execution of the MoUs. Consequently, the Council of the Academy is striving for follow-up actions regarding the MoUs with various Academies. In the interest of rigorous follow-up of activities regarding the MoUs, the President of the Academy has nominated Fellows of the PAS as Coordinators, as given in the above Table. The Coordinators have been mandated to get materialized the MoUs between the counterpart academies for achieving the stipulated goals, by working jointly.



7.7.4. Alliance of International Science Organization in the Belt & Road Region (ANSO)

ANSO is a non-profit, non-governmental international scientific organization founded in 2018 by the Chinese Academy of Sciences and 36 other international science and education institutions from around the world. ANSO came into being under the principles of "joint consultation, joint effort and joint sharing" championed by the Chinese "Belt and Road Initiative".

ANSO is committed to promoting shared development, sustainable development and the advancement of the UN SDGs through catalyzing and implementing concrete international cooperation initiatives in Science, Technology & Innovation and Capacity Building (STIC). It is envisaged that ANSO will focus attention on the investigation and addressing of the most urgent regional and global scientific challenges. This focus includes supporting the needs and scientific capacity building of the Global South through partnerships and cooperation with the member countries and institutions. ANSO is an international organization designed to win global recognition and support through continuous activity, sound scientific programs and actions and success in addressing global needs and challenges.

7.7.4.1. Strategic Plan 2020-2022 - ANSO

Prof. Dr. Qasim Jan (President PAS) and focal person ANSO Prof. Dr. Zabta Shinwari (Fellow, PAS) were Lead Authors of "Strategic Plan 2020-2022" of Alliance of International Science Organizations (ANSO), a project of the Belt and Road Initiative of the Chinese Academy of Sciences.

7.7.4.2. ANSO Collaborative Research

ANSO collaborative research jointly initiated and supported by ANSO members, institutes, universities and international organizations focusing on hotspots and urgent issues related to environmental change, green development, human well being and sustainable development. ANSO approved The following two ANSO Collaborative Research Projects

1. Collaborative project on "Food Security" – Prof. Dr. Iqar A. Khan (Fellow, PAS)
2. Molecular detection and characterization of bat-borne viruses from Pakistan – Dr. Muhammad Ali (Member, PAS)

7.8. Visit of Foreign Delegations to the Academy

7.8.1. Visit of Yunnan Academy of Sciences and Technology Development (YASTD) Delegates to Pakistan Academy of Sciences - January 06, 2020

A 3-member delegation from Yunnan Academy of Science and Technology Development (YASTD) led by the Deputy Dean (YASTD), Pu Weidong, visited the Pakistan Academy of Sciences (PAS) on January 06, 2020, and had a meeting with the PAS Officials and Fellows. Dr. M. Aslam Baig, Secretary General, PAS welcomed and

briefed the delegation about PAS. They had a meeting on the following five aspects: 1) Disciplinary layout of various scientific and technological fields in Pakistan; 2) The role and influence of the Pakistan Academy of Sciences in Pakistan's development; 3) Major research results of the Pakistan Academy of Sciences; 4) Specific introduction of cooperation with other countries; and 5) The areas that Pakistan Academy of Sciences hope to cooperate with China; Suggestions on cooperation methods and channels. The delegation appreciated the progress made by the Pakistan Academy of Sciences and hoped to work in collaboration in the future.

7.8.2. Visit of Delegate from the Embassy of the Republic of Uzbekistan - September 30, 2020

A three members' delegation from the Embassy of the Republic of Uzbekistan visited the Pakistan Academy of Sciences (PAS) Headquarters, Islamabad. Prof. Dr. Qasim Jan (President, PAS) and Prof. Dr. Aslam Baig (Secretary General, PAS) led the PAS side. On behalf of the Pakistan Academy of Sciences, Dr. Qasim Jan warmly welcomed the Embassy of the Republic of Uzbekistan delegation.

The meeting discussed two collaborative aspects between Uzbekistan and Pakistan: (1) Joint projects and research activities between Uzbekistan and Pakistan; and (2) Signing of MoU with Pakistan Academy of Sciences in future.

In the end, President PAS thanked the participants of the meeting and assured lasting support of PAS for scientific collaboration between Uzbekistan and Pakistan.

7.8.3. Ambassador of the Republic of Bulgaria visited Pakistan Academy of Sciences June 24, 2021

The Ambassador of the Republic of Bulgaria, H.E. Mrs. Irena Gancheva visited Pakistan Academy of Sciences on June 24, 2021. Prof. Dr. Khalid Mahmood Khan (President, PAS) and Prof. Dr. Tasawar Hayat (Secretary General, PAS) welcomed the Ambassador and discussed the opportunities for future cooperation with the Bulgarian Academy of Sciences (BAS).

7.9. International Collaborative Projects/Events

7.9.1. Prof. Dr. M. Qasim Jan, President PAS represented the Pakistan Academy of Sciences in the International Association for Disaster Risk Reduction (IADRR)

The Chinese Academy of Sciences has recently taken a new initiative, that is, the establishment of "International Association for Disaster Risk Reduction (IADRR)". IADRR is an international, non-governmental, professional body of individual membership, devoted to the development of global disaster risk reduction (DRR) endeavors with an emphasis on:

1. Interdisciplinary, multi-sector, and multi-stakeholder cooperation among all categories of Disaster Risk Reduction (DRR) professionals.



2. Exchanging knowledge and ideas, research outputs and practical experiences, establishing a trans-disciplinary science and technology application interface.
3. Promoting disciplinary development of disaster risk sciences and engineering, increasing risk awareness and education among the general public for resilient communities.

Needless to say that this is a very important initiative for the Chinese Belt & Road activities and, particularly, for the China-Pakistan connectivity via the land route of the Karakoram Highway (KKH). Major on-land trade activity is critically dependent on smooth and uninterrupted transport along the KKH which, unfortunately, passes through a terrain with frequent and major natural disasters, such as earthquakes, landslides, floods, etc. The establishment of IADDR and China-Pakistan joint Earth Sciences Centre in Islamabad are expected to play an important role in addressing these issues.

The IADDR hosts have invited Dr. M. Qasim Jan to accept the Founding Membership of the IADDR on behalf of the Pakistan Academy of Sciences as well as because of his knowledge and interest in natural disasters. Dr. M. Qasim Jan was asked for the assurance of the Council in accepting the offer and informed that in the long run the Founding Members would be expected to constitute local chapters of the IADDR.

7.9.2. Commonwealth Academy Teleconference - April 28, 2020

The Royal Society is the science academy of the UK that draws its Fellows from across the Commonwealth. The Society and its partners support scientific collaboration across the Commonwealth through participation in a number of activities, including an informal network of Commonwealth science academies, and two Commonwealth Science Conferences (in 2014 and 2017, with a third to follow in 2021). The Pakistan Academy of Sciences has joined science leaders from around the globe to call on the Commonwealth Heads of Government to use the best available science to guide action on **“Climate change, biodiversity and sustainable energy”**.

Prof. Dr. M. Aslam Baig (Secretary General, PAS) and Prof. Dr. M. Qasim Jan (President, PAS) participated in the commonwealth academy teleconference on April 28, 2020. In the meeting, discussed about the COVID-19, Commonwealth Science Conference 2021, and Commonwealth academies statement on Climate Change, Biodiversity and Sustainable Energy. Commonwealth academies statement on climate change, biodiversity and sustainable energy mark an important point of reference and as we go forward into an important year for action on climate and biodiversity, they would wish to continue to highlight the issues in the statement in the run-up to the climate change and biodiversity COPs.

In order to address these critical challenges, the Commonwealth and its member countries will need to work with the other countries of the world – particularly those

with the highest political and economic influence such as China, the USA and others – and to call on them to support these essential endeavors. The academies of the Commonwealth stand ready to assist in these crucial efforts, through using our collective knowledge, experience, expertise and convening power to support the necessary action required.

7.9.3. Commonwealth Academies Statement on Climate Change, Biodiversity and Sustainable Energy - June 5, 2020

Prof. Dr. M. Aslam Baig (Secretary General, PAS) and Prof. Dr. M. Qasim Jan (President, PAS) participated in the commonwealth academy teleconference on April 28, 2020. As a follow up, the Commonwealth academies statement on climate change, biodiversity and sustainable energy was published on World Environment Day on Friday June 5, 2020, which mark an important point of reference and as we go forward into an important year for action on climate and biodiversity. The statement is as follow;

COVID-19 has had a profound impact across the globe, affecting health and health services, impacting the global economy, and exacerbating social and economic inequalities. Global cooperation and effective policy are essential for tackling the virus and for ensuring a successful economic recovery. But the global pandemic does not change the fact that the world also continues to face an ever-growing environmental emergency. Indeed, COVID-19 has highlighted the importance of governments working together and we must build on this global response to address the climate crisis.

On the occasion of World Environment Day, and in a month when Commonwealth leaders would have gathered in Kigali for the Commonwealth Heads of Government Meeting (CHOGM), we therefore call on governments to continue to address the joint challenges of climate change and biodiversity loss, and to ensure that global economic recovery from the pandemic is environmentally sustainable across the Commonwealth and globally. Delivering action on the urgent and interlinked challenges of climate change, biodiversity loss and sustainable energy provision present economic, social and environmental opportunities for the whole Commonwealth. We call on Commonwealth Heads of Government to:

1. Use the opportunities of COP26 and COP15 to coordinate discussions on the joint challenges of climate change and biodiversity and recognise their inherently interlinked nature.
2. Work with the global research community to identify scientific and holistic approaches for addressing climate change and biodiversity without causing unintended damage.
3. Grasp the opportunity of a decarbonised economy and its benefits for people and life on Earth.
4. Ensure a resilient and environmentally sustainable recovery from COVID-19.



The well-being of people across the world has improved significantly over the last century. In particular, a reduction in poverty levels, improved technological advancements, and expanded educational and economic opportunities have increased living standards for many – both across the Commonwealth and globally.

However, these improvements in human development have come at a cost and there has been a huge impact on climate change and biodiversity. Global temperature increases are now predicated to be significantly higher than 1.5°C above pre- industrial levels on current emissions trajectories. Governments face additional challenges in seeking to limit additional warming beyond these levels.¹ These increases in global temperature will be associated with an increase in the occurrence of extreme weather events at the local, regional and global scales. Current extinction rates of known species are at an all-time high, and the abundance of wild organisms is declining worldwide across all observed groups, including fish, corals, birds, mammals, insects, amphibians and plants. This has both a significant impact on ecosystems, the services they provide to humanity, such as food, pollination, and water purification, and to resilience to climate change hazards, such as the prevention of flooding, the mitigation of storms and resistance to novel pests and diseases.

These changes are already well underway. Failure to tackle these combined challenges in the increasingly narrowing timescale required will pose significant risks to human development and welfare, societal inequalities, and impact all Commonwealth countries, particularly those that are most vulnerable. Governments must therefore take urgent action to address these issues.

Taking these actions now creates strong opportunities for human development within Commonwealth countries. These include: delivering sustainable economic growth in high-productivity sectors and providing cheap, clean energy to off-grid communities; improving public health by addressing the adverse impacts of climate change and biodiversity loss; and greater public engagement through empowering local communities and future generations.

In all cases, careful planning and action is needed and this requires movement now, including further research to narrow uncertainties where they remain large; work to translate research and development solutions into policy; and global leadership - which has been clear, but not yet met with the necessary scale of action – across the Commonwealth and beyond.

This decade, the Commonwealth has the opportunity to capitalize on its diversity and scale, and the potential of its young and growing population, to deliver a sustainable and prosperous future. In order to address these critical challenges, the Commonwealth and its member countries will need to work with the other countries of the world – particularly those with the highest political and economic influence such as China, the USA and others – and to call on them to support these essential endeavours. The academies of the Commonwealth stand ready to assist in these crucial efforts, through

using our collective knowledge, experience, expertise and convening power to support the necessary action required.

7.9.4. Representation of Pakistan Academy of Sciences in AASSA Working Group Meeting on Climate Change and Health

7.9.4.1. First Regional Meeting of AASSA Working Group in Kuala Lumpur, Malaysia - February 24-25, 2020

Prof. Dr. Mohammad Perwaiz Iqbal, FPAS, represented the Pakistan Academy of Sciences in the First Regional Meeting of the AASSA Working Group on “Climate Change and Health” held in Kuala Lumpur, Malaysia from February 24-25, 2020. He delivered a presentation on Climate Change and Health in Pakistan in which he emphasized on a serious threat to food security, water and vectorborne diseases in the people of Pakistan and effects of a climate change including, melting of glaciers, decertification, intrusion of sea water, flooding and land sliding due to unseasonal rains. In addition, he discussed the adaptation and mitigation strategies and their emergency to protect future health of the future and current generations of Pakistan.

7.9.4.2. AASSA Working Group Meeting on Climate Change and Health - June 17, 2020

The AASSA Working Group on Climate Change and Health met by zoom on June 17, 2020 and included participation from Malaysia, Australia, China, India, Korea, Nepal, Pakistan and New Zealand. Last year, Pakistan Academy of Sciences (PAS) nominated Prof. Dr. M. Perwaiz Iqbal (Fellow PAS and Professor, Department of Life Sciences, University of Management and Technology, Lahore) to represent the Pakistan Academy of Sciences (PAS) in the Inter Academy Partnership (IAP) and the Associations of the Academies and Societies of Sciences in Asia (AASSA) project titled Climate Change and Health.

7.9.4.3. Report on the Effect of Climate Change on Health in Pakistan

In the first meeting of Kuala Lumpur, Malaysia held on Feb 24-25, 2020, Prof. Dr. M. Perwaiz Iqbal was assigned with the task to write a country report on the Effect of climate change on health in Pakistan. Excerpts from this report would be used in the final report of IAP that is expected to be published in the year 2021.

The report highlights the emerging global issue of climate change, that has been in the lime light for more than 4 decades and response of the world bodies including the World Health Organization (WHO, Inter-Academy Partnership (IAP) to aware the member countries in order to save the future generations from the devastating effects of climate change.

Pakistan, is listed among the top 10 most affected countries of South Asia due to climate change. The adverse effects due to this has resulted into erratic weather patterns, reduction in availability of clean water per capita, melting of glaciers, desertification of



fertile cultivable land, flooding, land sliding and drought leading to food insecurity, water-borne diseases.

It is hoped that the world during the post-pandemic period would be more conscious of the mitigation steps to be taken to prevent the future generations from the ill-effects of climate change. In other words, the world needs a “climate smart” stimulus to provide a safe and healthy environment to future generations.

7.9.5. Representation of Pakistan Academy of Sciences in Special Committee for Women in Science and Engineering (AASSA-WISE Committee) - STEM Women Database

To promote women participation in STEM education and career, AASSA is playing a lead role by constituting Special Committee for Women in Science and Engineering (AASSA-WISE Committee) Prof. Dr. Azra Khanum (nominated member from the PAS) represented Pakistan Academy of Sciences in Special Committee for Women in Science and Engineering (AASSA-WISE Committee).

7.9.6. Representation of Pakistan Academy of Sciences in AASSA Webinar on National Academy's Response to COVID-19 - July 10, 2020

The Associations of Academies and Societies of Sciences in Asia (AASSA) Secretariat, in collaboration with the Korean Academy of Science and Technology (KAST) held a virtual webinar on National Academy's Response to COVID-19, on July 10, 2020. Prof. Dr. Yoo Hang Kim, President AASSA welcomed the participants in his opening remarks and appreciated the participation of the panelists from various science academies. He further, added the objective of this gathering as an experience to share their efforts and initiatives in devising a successful exit strategy.

Being a member of the National Academies of Sciences (NAS), the Pakistan Academy of Sciences (PAS) nominated Prof. Dr. Zabta Khan Shinwari, Fellow PAS to present a list of activities performed by the Academy during this global pandemic. Prof. Dr. Zabta Khan Shinwari presented a paper to highlight these activities including; International liaisons, Relief efforts to the humanitarian victims, suggestions to the Government in policy documents for COVID-19, usage, and importance of traditional medicine to combat the virus, and awareness training, sessions, and seminars with stakeholders, experts, and researchers within Pakistan and outside the country.

7.9.7. Inter-Academy Partnership (IAP) Working Groups on Open Science and Biosecurity

Pakistan Academy of Sciences is on Inter-Academy Partnership working groups on Open Science and Biosecurity to promote responsible/ethical research practices in the biosciences and related fields, to engage with international organizations and conventions by feeding information into their discussions on the latest scientific

developments and providing recommendations, and to engage more IAP member academies in the work of the Biosecurity Working Group (BWG).

Prof. Zabta Shinwari (Fellow PAS) was selected as a member of both the working group. He participated in the IAP- International Biosecurity Working Group and expressed his opinion and views over Anti-social social media: Infodemic in pandemics” on December 2, 2020.

7.9.8. China-Pakistan High-level Webinar on Earth Science Cooperation March 18, 2021

China-Pakistan Joint Research Center on Earth Science (CPJRC) in collaboration the Pakistan Academy of Sciences (PAS) successfully held "China- Pakistan High-level Webinar on Earth Science Cooperation" on March 18, 2021 with the theme of Sustainable Development of CPEC: Vision for China- Pakistan Science and Technology Cooperation in Earth Sciences. As the co-organizers of this meeting, Institute of Tibetan Plateau Research (ITP), Chinese Academy of Sciences (CAS) hosted the on-sight venue in Beijing with the Institute of Mountain Hazards and Environment (IMDE) of CAS. More than 300 participants from both countries attended the meeting by attracting over one thousand audiences via live stream.

Prof. Dr. Qasim Jan, Immediate Past President of Pakistan Academy of Sciences (PAS), delivered a welcome address and presided over the Opening Ceremony. Prof. Dr. Zhang Yaping, Vice president of CAS, expressed his wishes that the scientists from China and Pakistan could work together to address the important and urgent regional environment issues and better serve for the development of China-Pakistan Economic Corridor (CPEC) through CPJRC platform. Mr. Nong Rong, Chinese Ambassador to Pakistan, Mr. Ruan Xiangping, Senior Counsel of Department of International Cooperation of MOST, Dr. Tariq Banuri, Chairman of HEC and Dr. Arshad Mahmood, Secretary for MOST, Pakistan delivered their warm addresses and expressed their hopes that CPJRC will contribute to the regional and local sustainable development through S&T cooperation. Prof. Dr. Tasawar Hayat, Sec. Gen. PAS offered vote of thanks.

Two keynote talks are from ITP/CAS. Prof. Dr. CHEN Fahu, Director of ITP/CAS gave a presentation titled “Changing in Climate, glacier and hydrology and their impacts in Upper Indus Basin (UIB)”, introducing the joint research on glacier and water cycle change in Pakistan. Prof. DING Lin, Deputy Director of ITP/CAS, talked about the progresses and challenges in geoscience collaboration between China and Pakistan.

Prof. Dr. CUI Peng, Director-General of CPJRC, emphasized that CPJRC would push forward the Sino- Pakistan S&T cooperation to a new level by carrying out practical cooperation and supporting the regional sustainable development from the earth science aspect, in order to celebrate the 70th anniversary of diplomatic relations between the two countries.



7.9.9. AASSA-PAS Collaborative Webinar Series / Hybrid Workshops 2021 on “Pandemic Preparedness: Science and Countermeasures”

Throughout human history, there have been several pandemics that caused a huge loss to humanity. Most famous of these include the 14th century black death (estimated 75-200M deaths), 1918 Spanish flu (~50M), 1957-58 Asian Flu (estimated 2M), 1968 Hong Kong flu (estimated 1M), 2009-10 Swine flu (~150,000-500,000) etc. Responding to or planning for a pandemic is a complex process. The most important global pandemic preparedness indicators take account of prevention for the emergence or release of the potential pathogens, early detection and assessing their expansion, emergency response, global risk mitigation, strong healthcare system, commitment to improving national capacity in compliance with the global needs, an overall assessment of country's vulnerability to risk/biological threat. The COVID-19 has proved that more work needs to be done for preparedness and countermeasures of possible pandemics. At the same time, in the era of information technology, one has to use social media for the good of humanity. Unfortunately, the use of social media has been counterproductive in the current pandemic.

UNESCO estimates that over 1.5 billion students in 165 countries are out of school due to COVID-19. The pandemic has forced the global academic community to explore new ways of teaching and learning, including distance and online education. This has proven challenging for both students and educators, who have to deal with the emotional, physical, and economic difficulties posed by the illness while doing their part to help curb the spread of the virus. The future is uncertain for everyone, particularly for millions of students scheduled to graduate this year who will face a world crippled economically by the pandemic.

To deliberate upon the gigantic role of scientists, researchers, medical practitioners, policymakers, students, media, etc. and to arrive at possible strategies, AASSA-PAS Webinar Series 2021 on Pandemic Preparedness: Science and Countermeasures was organized jointly by the Pakistan Academy of Sciences (PAS) and the Association of Academies and Societies of Sciences in Asia (AASSA) with the support of InterAcademy Partnership (IAP) consisting of four (04) webinars each covering a specific theme of the current pandemic scenario/situation and scheduled on April 27, 2021, May 4, 2021, May 25, 2021, and June 24, 2021. The webinar series has provided an opportunity to share lessons learnt among the participating countries and scientists about the COVID-19 and its relation to sustainable development goals; Strategy of the current issues, challenges while facing pandemics; and the increasing awareness about the preparedness of the future pandemics. Use of emerging technologies like Artificial Intelligence Applications in Tracking Health Behaviors during Disease Epidemics and Encouraging the use of ICT technologies and social media for tackling the spread of misinformation regarding different aspects of the pandemic were discussed besides Pandemic: Bio-safety & Biosecurity and Ethics.

The webinar series has also focused on educators and researchers in different parts of the world to find out how COVID-19 has affected them and how they are coping with the changes. We will also be able to highlight lessons learned and potential positive outcomes of the global lockdown for higher education. In total, 48 lectures were delivered in the AASSA-PAS Webinar series 2021 by leading experts. Of these, eighteen (18) lectures were presented by the international speakers and thirty (30) lectures were presented by the Pakistani speakers. The resource persons in the Webinars were leading foreign experts from different countries i.e., Australia, Bangladesh, China, Indonesia, Iran, Japan, Korea, Kyrgyzstan, Malaysia, Nepal, Pakistan, Russia, Turkey, United Arab Emirates (UAE), USA, and Vietnam. More than 2000 national and international participants registered for participation in the AASSA-PAS Webinar series 2021. These include 748 participants in Webinar I, 760 participants in Webinar II, 428 participants in Webinar III, and more than 300 in Webinar IV.

7.9.9.1. AASSA-PAS WEBINAR I on SDGs and Pandemics - April 27, 2021

Pakistan Academy of Sciences (PAS) and the Association of Academies and Societies of Sciences in Asia (AASSA) with the support of InterAcademy Partnership (IAP) organized an AASSA-PAS Webinar I on “SDGs and Pandemics” on April 27, 2021, in the Pakistan Academy of Sciences. H.E. Senator Shibli Faraz, Federal Minister for Science and Technology inaugurated the Webinar.

Prof. Khalid Mahmood Khan, President Pakistan Academy of Sciences presented the welcome address. He emphasized the importance of media and sharing of data to counter the emerging pandemic potential. He mentioned that many lives were lost as a result of this pandemic. He highlighted the importance of follow-up of SOPs and the adoption of measures dictated by the local government and health regulatory bodies to cope with the issue of the spread of the pandemic.

In his online address, the Minister of Science & Technology, Senator H.E. Shibli Faraz appreciated the efforts of PAS and AASSA for timely taking up the important issue of Pandemics. He inaugurated the webinar and mentioned that among the most pressing issues in preparing for the global response to a pandemic situation are the design, development, manufacture, and dissemination of vaccines. The response to this pandemic has shown that when leading vaccine manufacturers are fully engaged in a global response, it might be possible for them to manufacture substantial doses of vaccine on timelines faster than envisioned previously.

Prof. Dr. Tasawar Hayat, Secretary General, PAS Islamabad paid gratitude to the Federal Minister, H.E. Senator Shibli Faraz on behalf of the organizing committee, AASSA, and the - PAS. He thanked Senator Shibli Faraz for his virtual (online) participation in the webinar. He appreciated the efforts of Prof. Khalid Mahmood (President PAS), Prof. Yoo Hang Kim (President AASSA) Prof. Zabta Khan Shinwari (Chief Organizer of the Webinar), resource persons, speakers, and the whole organizing committee. He thanked all the speakers and participants for their inputs & contributions and



announced that PAS will soon publish a special issue on the proceedings of the current webinar series and a policy document as to how to respond to pandemics.

Under the sub-theme “SDGs and Pandemics”, a total of 10 lectures were presented by the leading experts, of which three (03) lectures were presented by international speakers from three countries namely Turkey, Dubai, and Nepal, and seven (07) lectures by Pakistan speakers. Prof. Dr. Masoom Yasinzai (Rector IIUI), Islamabad served as the moderator for this webinar.

All the speakers stressed “Building the Global Vaccine Manufacturing Capacity” to respond to Pandemics”. Prof. Zabta Khan Shinwari spoke about the way forward to combat COVID-19. He remarked that what emerges next will partly depend on the ongoing evolution of SARS-CoV-2, on the behavior of citizens, on the government's decisions about how to respond to the pandemic, on progress in vaccine development and treatments, and also in a broader range of disciplines in the sciences and humanities that focus both on bringing this pandemic to an end and learning how to reduce the impacts of future zoonosis, and on the extent to which the international community can stand together in its efforts to control COVID-19.

7.9.9.2. AASSA-PAS Webinar II on Pandemics Preparedness, One Health: Lessons Learnt - May 4, 2021

Pakistan Academy of Sciences (PAS) and the Association of Academies and Societies of Sciences in Asia (AASSA) with the support of InterAcademy Partnership (IAP) organized an AASSA-PAS Webinar II on “Pandemics Preparedness, One Health: Lessons Learnt” on May 4, 2021, in the Pakistan Academy of Sciences. Speakers from Pakistan, Bangladesh, China, Indonesia, Japan, Turkey, and Sri Lanka delivered talks. Dr. Fazal e Hadi, Chairman Islamabad Healthcare Regulatory Authority inaugurated the Webinar. Dr. Fazal e Hadi noted that the Islamabad Healthcare Regulatory Authority (IHRA) is an autonomous health regulatory body enacted under the Islamabad Health Regulation Act, 2018, and discussed the efforts of the IHRA for educating and making people aware to follow standard operating procedures (SOPs) and standardize their living to counter this pandemic. He stressed the need to provide evidence for awareness. He recommended that strengthening of leadership and provision of vaccines to everybody is the only way forward to combat the pandemic.

Prof. Khalid Mahmood Khan, President of the Pakistan Academy of Sciences welcomed all the speakers, guests, and organizers of the webinar. He appreciated the efforts of PAS and AASSA for arranging these webinars in this difficult time of the COVID-19 pandemic. Prof. Yoo Hang Kim, President AASSA, appreciated the collective efforts of various stakeholders in organizing the webinar for the awareness and strengthening of SOPs across the world. He recommended inviting more people in the future to speak about this epidemic. He emphasized making people aware of this pandemic. Prof. Zabta Khan Shinwari, Chief Organizer of the Webinar, thanked all the speakers of the Inaugural Session and the Chief Guest for being part of the Webinar Series. He explained

scientific reasons as to why to observe social distancing. Coronavirus drifts through the air in microscopic droplets: the science of the infectious aerosols. Wearing masks and practicing social distancing can, in large part, prevent people from spreading or inhaling aerosols. Prof. Muhammad Ali (Vice Chancellor, Quaid-i-Azam University, Islamabad, Pakistan) and Prof. Zabta Khan Shinwari (Chief Organizer of the Webinar) served as the moderators of this webinar. Different countries shared their experiences on COVID-19. Prof. Nariyoshi Shinomi, from Japan, highlighted the current situation of COVID-19 in Japan, while Prof. Zabta Shinwari sensitized the participants about biosecurity & neglected aspects of pandemics in Pakistan. The keynote address by Prof. Jinghua Cao (Executive Director, Alliance of International Science Organizations, ANSO) discussed the efforts of ANSO members to counter the COVID-19 epidemic. He emphasized the role of ANSO to bring people together and promote solidarity and unity within ANSO to oppose the spread of this epidemic collectively. Prof. Dr. Mehmet Bulut (Member, TUBA) emphasized the importance and role of social finance in achieving SDGs objectives.

He expressed the need for sustainable development that incorporates meeting the needs of the present and future.

While giving concluding remarks Prof. Zabta K. Shinwari, emphasized collective working to share data and lead the research on the pandemic to reduce the overall impact of this epidemic. All the stakeholders and researchers should work together to collaborate and find out how epidemics can be controlled and the economy can be improved. He gave recommendations on regulating media, proper law enforcement, and handling misinformation to support each other against this pandemic.

7.9.9.3. AASSA-PAS Webinar III / Hybrid Workshop on “How to Counter Infodemics: Role of Scientists & Role of Complementary Medicine in Pandemics” and “Diagnosis, Critical Care; Vaccines and Herd Immunity” - May 25, 2021

The Pakistan Academy of Sciences (PAS) and the Association of Academies and Societies of Sciences in Asia (AASSA) with the support of InterAcademy Partnership (IAP) organized an AASSA-PAS Webinar III/Hybrid Workshop on May 25, 2021, in the Pakistan Academy of Sciences. The webinar/Hybrid Workshop covered specific themes i.e. “How to Counter Infodemics: Role of Scientists & Role of Complementary Medicine in Pandemics” and “Diagnosis, Critical Care; Vaccines and Herd Immunity”. In total, 13 lectures were delivered by leading experts, of which five were delivered by international speakers from Iran, Korea, Russia, USA, and Vietnam and eight by Pakistani speakers. H.E. Zartaj Gul, Minister of State for Climate Change, Government of Pakistan (GoP) was the Chief Guest of the Webinar. The concluding session of the Workshop was chaired by H.E. Masood Khan, President AJ&K. Prof. Dr. Shahid Mahmood Baig (Chairman, PSF) and Maj. Gen. Aamer Ikram (Executive Director, NIH) were the moderators of the Technical Sessions. Lessons learnt from Canada, Korea, Pakistan, Russia, USA, and Vietnam and were shared. Prof. Khalid Mahmood Khan, President-PAS, welcomed the guests and participants and appreciated the endeavours



of PAS, AASSA, IAP, the organizers, participants and webinar attendees to cooperatively organize these webinar series and discussed the role of these webinars for improving the situation in this epidemic. Prof. Yoo Hang Kim, President-AASSA, appreciated the efforts of AASSA, PAS, Prof. Zabta Khan Shinwari, the organizers, participants (both at the venue and online), and all the people who contributed to the webinar. He gave various recommendations for COVID-19 that included global coordination, global organization, and adoption of all the safety and biosecurity measures suggested by the World Health Organization (WHO).

Prof. Tasawar Hayat, Secretary General PAS gave a brief account of the Pakistan Academy of Sciences in terms of its aims and objectives and key success stories. Prof. Zabta Khan Shinwari, Chief Organizer of the webinar, appreciated the efforts of ASSAA and young scientists at PAS in arranging this webinar.

Finally, at the conclusion of the webinar series, Prof. Tasawar Hayat, PAS Secretary General, announced the gold, silver, and bronze medals for the best posters by young graduates in the Poster Competition. The prize money was donated by the AASSA President. A partial contribution was also made by the organizers of the workshop. He expressed his special gratitude to Prof. Dr. Yoo Hang Kim (President AASSA), and Prof. Dato Dr. Khairul Anuar Bin Abdullah (President-Elect, AASSA) for provision of valuable technical and financial support and guidance to the Pakistan Academy of Sciences to organize this Webinar series in a successful and productive manner. He also thanked Prof. Dr. Khalid Mahmood Khan, (President PAS), and Prof. Dr. Zabta Khan Shinwari, (Chief organizer of the Webinar Series) for their continuous and gracious support & patronage to organize the webinar series at the Academy. In the end, Shields were distributed among dignitaries, Speakers, and Organizers.

7.9.9.4. AASSA-PAS Webinar IV / Hybrid Workshop on COVID-19 and Higher Education: Addressing Food Insecurity through Policy Support and Research - June 24, 2021

The Pakistan Academy of Sciences (PAS) and the Association of Academies and Societies of Sciences in Asia (AASSA), with the support of the InterAcademy Partnership (IAP), organized an AASSA-PAS Webinar VI/Hybrid Workshop on COVID- 19 and Higher Education: Addressing Food Insecurity through Policy Support and Research: 24 June 2021, in the Pakistan Academy of Sciences. In total, 13 lectures were delivered by leading experts, of which four were delivered by international speakers from Australia, Canada, China, and the UK, and eight lectures by Pakistani speakers. H.E. Syed Fakhar Imam, Federal Minister, National Food Security, and Research, Government of Pakistan, inaugurated the webinar and highlighted the impact of the pandemic on people. Mrs. Farah Hamid Khan, Federal Secretary, Education, and Professional Training, Chief Guest of the Concluding Session, expressed her views about misinformation in the epidemic. Prof. Dr. Iqar A. Khan (VC-UAF), Prof. Dr. Kausar A. Malik (Fellow, PAS), and Prof. Dr. Zia Ul-Qayyum (VC, AIOU) were the moderators of the Technical Sessions.

Prof. Khalid M. Khan, President Pakistan Academy of Sciences (PAS), welcomed the guests, speakers, organizers, and webinar participants to the fourth workshop of this series on Pandemic Preparedness, Science, and Countermeasures. Prof. Zabta Khan Shinwari, Treasurer AASSA, and Fellow PAS recognized the participation of all in this webinar and emphasized arranging other similar webinars in the future with the collaboration of AASSA and IAP. He thanked all the eminent personalities and other participants from various ministries of the Government of Pakistan for their physical presence to participate in this webinar. Prof. Viktor Bogatov, Academician of Russian Academy of Sciences and Chief Academic Secretary of Far Eastern Branch of Russian Academy of Sciences, discussed the imbalance in COVID-19 cases across the world and emphasized the role of science and technology in tackling the pandemic.

In the concluding session, Prof. Yoo Hang Kim, President-AASSA, appreciated the efforts of the AASSA-PAS webinar organizers, participants, and speakers to make this event a success. Prof. Zabta Khan Shinwari gave recommendations for countering this epidemic. He suggested the realization of the needs of students' learning and encouraged universities to revive their policies for providing education in this epidemic as students face internet connectivity issues in far-off places..

Prof. Dr. Tasawar Hayat, Secretary General, PAS thanked Prof. Dr. Zabta Khan Shinwari (Chief organizer of the Webinar Series) for his contributions to the organization of the webinar. Towards the end of the concluding session, Medals/Cash Prizes were distributed among the winners of a poster competition.

7.9.10. Representation in AASSA Executive Board and General Assembly Meeting

The 5th AASSA General Assembly and AASSA Executive Board Meeting was held on October 15, 2021. Prof. Dr. Tasawar Hayat (Sec. Gen, PAS) and Prof. Dr. Zabta Shinwari (Former Treasurer, AASSA & Fellow PAS) participated in the meeting. Prof. Dr. Zabta Shinwari as representative from the Academy presented report on activities of Pakistan Academy of Sciences carried out during 2020-2021 on Climate Change and Health (CC&H), STEM women database, Open Science, and Pandemic, respectively at the EB meeting and the GA. In the new AASSA Executive Board Member election held at the General Assembly for 2021 – 2024, Prof. Dr. Tasawar Hayat (Sec. Gen. PAS) has been elected as Member-at-Large.



8. GOLD MEDALS AND AWARDS

Currently, the PAS is conferring the following Awards/Prizes/Gold Medals:

1. PAS Gold Medals and Prizes in the following areas:
 - i. Agricultural Sciences, including Veterinary Sciences and Forestry;
 - ii. Biological Sciences, including Botany, Zoology, Microbiology, and Biochemistry;
 - iii. Chemical Sciences, including Pharmaceutical Sciences;
 - iv. Earth and Environmental Sciences;
 - v. Emerging Technologies, including Biotechnology, Nanotechnology, Molecular Biology, and Bioinformatics;
 - vi. Engineering Sciences, including Information Technology;
 - vii. Mathematical Sciences, including Mathematics, Statistics and Computer Sciences;
 - viii. Health Sciences;
 - ix. Physics
 2. Dr. Atta-ur-Rahman Gold Medal in Chemistry for Scientists under 40;
 3. Dr. M. Raziuddin Siddiqi Prize for Scientists under 40;
 4. Dr. M. N. Azam Prize in Computer Science (Software);
 5. PAS-COMSTECH Prize in Computer Science (IT);
 6. Dr. Shah Jahan Prize for Scientists under 40;
 7. Prof. Zabta K. Shinwari Gold Medal in Biotechnology for Scientists under 50.
 8. *TWAS Abdus Salam Prize in Basic Sciences for Scientists under 40;
 9. *TWAS Salimuzzaman Siddiqui Prize in Applied Science-Technology for Scientists under 40;
- *(Since the funding from the TWAS has been stopped, the Council decided to continue this award with monetary benefit comparable to PAS Gold Medals & Prizes in it is meeting held on October 12, 2019 approved by the G.B on December 03, 2019).***

In the past, the Academy had been conferring the following Awards as well:

1. PAS Open Gold Medal;
2. PAS Gold Medal (under 40);
3. PAS/Infaq Foundation Agha Hasan Abedi Gold Medal;
4. PAS/Infaq Foundation Agha Hasan Abedi Prize for Scientist of the Year;
5. TWAS Cash Prize (under 40);
6. Distinguished Scientist of the Year Award;
7. Meritorious Service Award (Special Medal);
8. World Science Day for Peace and Development Award;
9. TWAS Abdus Salam Prize in Basic Sciences (under 40);
10. TWAS Salimuzzaman Siddiqui Prize in Applied Science & Technology (under 40).

8.1. PAS Open Gold Medal

S. No.	Award Winner	Discipline	Year
1	Prof. Mukarram Hussain Khundker, University of Dhaka, Dhaka	Physical Sciences	1967
2	Prof. Afzal Hussain Qadri, University of Karachi, Karachi	Biological Sciences	1968
3	Prof. Kamaluddin Ahmad, University of Dhaka, Dhaka	Physical Sciences	1969
4	Dr. Mohammad Abdul Ghani, Commonwealth Institute of Biological Control (C.I.B.C.), Rawalpindi	Biological Sciences	1970
5	Dr. M. M. Qurashi, Pakistan Council for Scientific & Industrial Research (PCSIR), Lahore	Physical Sciences	1971
6	Prof. Majeed Ahmad University of Islamabad, Islamabad	Biological Sciences	1972
7	Dr. M.K. Bhatti, Pakistan Council for Scientific & Industrial Research (PCSIR), Lahore	Physical Sciences	1973
8	Prof. M.I.D. Chughtai, University of the Punjab, Lahore	Biological Sciences	1974
9	Mr. M. Aslam, Pakistan Council for Scientific Industrial Research (PCSIR), Karachi	Technology	1974
10	Dr. M. Aslam Khan, Defense Science & Technology Organization (DESTO), Rawalpindi	Physical Sciences	1975
11	Dr. S. Riaz Ali Shah, Pakistan Council for Scientific Industrial Research (PCSIR), Peshawar	Engineering & Technology	1975
12	Mr. A.H. Chotani, Pakistan Council for Science Industrial Research (PCSIR), Karachi	Technology	1976
13	Dr. Riazuddin, Pakistan Atomic Energy Commission (PAEC), Islamabad	Physical Sciences (Shared)	1978
14	Dr. Fayyazuddin, Quaid-i-Azam University, Islamabad	Physical sciences (Shared)	1978



S. No.	Award Winner	Discipline	Year
15	Dr. Muzaffar Ahmad, University of the Punjab, Lahore	Biological Sciences	1979
16	Dr. M. Safdar, University of the Punjab, Lahore	Technology	1979
17	Dr. Mahbub Ali, Central Cotton Research Station, Multan	Agriculture	1980
18	Dr. Fazal Ahmad Faruqi Pakistan Council for Science Industrial Research (PCSIR), Lahore	Engineering & Technology	1980
19	Dr. S.A. Qureshi, Ayub Agricultural Research Institute (AARI), Faisalabad	Agriculture	1980
20	Prof. Iqbal Hussain Shah, University of Peshawar, Peshawar	Energy	1980
21	Dr. S.M.H. Bokhari, Min. of Water & Power, Lahore	Water Management	1980
22	Prof. M. Ata-ur-Rahman, Jinnah Postgraduate Medical Center (JPMC), Karachi	Biological Sciences	1981
23	Dr. Hesham ul Haque, Pakistan Central Cotton Committee, Karachi	Agriculture & Allied subjects	1982/83
24	Dr. Atta-ur-Rehman, H.E.J. Research Institute of Chemistry, University of Karachi, Karachi	Physical Sciences	1982/83
25	Dr. M. Arshad Ali Beg, Pakistan Council for Science Industrial Research (PCSIR), Lahore	Engineering & Technology	1982/83
26	Prof. Imtiaz Ahmad, University of Karachi, Karachi	Biological Sciences	1985
27	Dr. Arshad Mohammad Khan, Pakistan Atomic Energy Commission (PAEC), Islamabad	Energy	1985
28	Dr. Nazir Ahmad, P.I.H.R., Lahore	Water Management	1985
29	Prof. Ghulam Murtaza, Quaid-i-Azam University, Islamabad	Physics (Shared)	1985
30	Prof. Viqar Uddin Ahmad, University of Karachi, Karachi	Chemistry (Shared)	1986

S. No.	Award Winner	Discipline	Year
31	Dr. Ashhad Mehdi, Pakistan Council for Science Industrial Research (PCSIR), Lahore	Engineering & Technology	1987
32	Prof. N.M. Awan, University of Engineering & Technology, Lahore	Water Management	1989
33	Dr. Iqbal Hussain Qureshi, Pakistan Atomic Energy Commission (PAEC), Islamabad	Physical Sciences	1988
34	Dr. Khushnood Ahmad Siddiqi, AEARC, Tandojam	Agriculture	1988
35	Dr. M.S. Bukhari, Defense Science & Technology Organization (DESTO), Rawalpindi	Engineering & Technology	1988
36	Dr. Abdul Quadeer Khan, KRL, Rawalpindi	Engineering & Technology	1989
37	Dr. Syed Irtifaq Ali, University of Karachi, Karachi	Biological Sciences	1989
38	Dr. Abdul Wahab Khan, Food & Agriculture Organization (FAO) of the United Nations	Agriculture	1989
39	Dr. N. M. Butt, Pakistan Atomic Energy Commission (PAEC), Islamabad	Physical Sciences	1990
40	Dr. A. D. Choudhry, University of Agriculture, Faisalabad	Engineering Sciences	1990
41	Mr. Mushtaq Ahmad, Irrigation Research Institute (IRI), Lahore	Water Management	1990
42	Dr. Agha Ikram Mohyuddin, CIBC, Rawalpindi	Agriculture	1990
43	Dr. Shah Mohammed, University of Agriculture, Faisalabad	Earth Sciences	1990
44	Dr.S.H.M.Naqvi, Nuclear Institute for Agriculture & Biology, Faisalabad	Biological Sciences	1991
45	Dr. M. Shabbir, Pakistan Atomic Energy Commission (PAEC), Islamabad	Engineering & Technology	1991



S. No.	Award Winner	Discipline	Year
46	Dr. Izhar-ul-Haq, WAPDA, Lahore	Water Management	1991
47	Dr. Manzur A. Bajwa, Ayub Agricultural Research Institute (AARI), Faisalabad	Agriculture (Shared)	1991
48	Dr. M. Hanif Qauzi, Pakistan Agriculture Research Council (PARC), Islamabad	Agriculture (Shared)	1991
49	Dr. Naeem Ahmed Khan, COMSTECH, Islamabad	Physics	1992
50	Dr. M. Anwar Waqar, The Aga Khan University, Karachi	Chemistry	1992
51	Mr. Bashiruddin Mahmood, Pakistan Atomic Energy Commission (PAEC), Islamabad	Engineering & Technology (Shared)	1992
52	Mr. Ghulam Kibria, Bank of Credit & Commerce International (BCCI), Karachi	Engineering & Technology (Shared)	1992
53	Dr. Nisar Ahmad, Pakistan Council for Scientific & Industrial Research (PCSIR), Lahore	Energy	1992
54	Dr. M. Zafar Iqbal, Quaid-i-Azam University, Islamabad	Physics (Shared)	1993
55	Dr. Saleem Asghar, Quaid-i-Azam University, Islamabad	Mathematics (Shared)	1993
56	Dr. Kauser A. Malik, National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad	Botany (Shared)	1993
57	Maj. Gen. (Retd) Iftikhar A. Malik, Armed Forces Institute of Pathology (A.F.I.P.), Rawalpindi	Medicine (Shared)	1993
58	Dr. Shaukat Hameed Khan, PINSTECH, Islamabad	Engineering & Technology	1993
59	Dr. Muhammad Zafar Iqbal, University of the Punjab, Lahore	Chemistry	1993
60	Dr. Darakhshan J. Haleem, University of Karachi, Karachi	Biochemistry	1996

S. No.	Award Winner	Discipline	Year
61	Dr. Ihsan Ilahi, University of Peshawar, Peshawar	Botany	1996
62	Dr. M. Maqsood, 243-A, Shadman-I, Lahore	Medical Sciences	1996
63	Dr. Nisar Ahmad, Applied Physics Division, PINSTECH, Islamabad	Engineering & Technology	1996
64	Dr. Ghulam Jilani, Commonwealth Institute of Biological Control (CIBC), Rawalpindi	Agriculture	1996
65	Dr. M. Qasim Jan, University of Peshawar, Peshawar	Earth Sciences	1996
66	Dr. Asghar Qadir, Quaid-i-Azam University, Islamabad	Mathematics	1996
67	Dr. M. Yar Khawar, University of the Sindh, Jamshoro	Chemistry	1996
68	Dr. M. Afzal, Quaid-i-Azam University, Islamabad	Chemistry	1997
69	Dr. M. Zakria Butt, Government College, Lahore	Physics	1997
70	Dr. Muhammad Ashraf, Bahauddin Zakria University, Multan	Botany	1997
71	Col. Dr. M. Aslam, Army Medical College, Rawalpindi	Medical Sciences	1997
72	Dr. Aijaz Karim, PINSTECH, Islamabad	Engineering & Technology	1997
73	Mr. Ali Hamza Kazmi, Geological Survey of Pakistan, DHA, Karachi	Earth Sciences	1997
74	Dr. Jamil Ahmad Qureshi, University of Agriculture, Faisalabad	Biochemistry	1999
75	Dr. M. Nawaz Chaudhry, University of the Punjab, Lahore	Earth Sciences	2001
76	Dr. M. Asif Khan, University of Peshawar, Peshawar	Earth Sciences	2002
77	Dr. Atiya Abbasi, H.E.J. Research Institute of Chemistry, University of Karachi, Karachi	Biochemistry	2002



S. No.	Award Winner	Discipline	Year
78	Dr. Azra Khanum, University of Arid Agriculture, Rawalpindi	Biochemistry	2003
79	Dr. Khalid Mohammed Khan, H.E.J. Research Institute of Chemistry, University of Karachi, Karachi	Chemistry	2004
80	Prof. Dr. Ahmed Saeed, Gomal University, DI Khan	Biochemistry	2004
81	Dr. Hamid Saleem, PINSTECH, Islamabad	Physics	2004
82	Dr. Muhammad Ayub, Quaid-i-Azam University, Islamabad	Mathematics	2004
83	Dr. Mohammad Qaiser, University of Karachi, Karachi	Botany	2004
84	Dr. Maqsood A. Chotani, DHA, Karachi	Medical Sciences	2004
85	Engr. Dr. Riazuddin Abro, OLC, Hyderabad	Engineering & Technology	2004
86	Dr. Muhammad Bashir, National Agricultural Research Center (NARC), Islamabad	Agriculture	2004
87	Dr. Sabira Begum, HEJ Research Institute of Chemistry, University of Karachi, Karachi	Chemistry	2005
88	Dr. Sheikh Ahmed Saeed, University of Karachi, Karachi	Biochemistry	2005
89	Dr. Bilquees Gul, University of Karachi, Karachi	Botany	2005
90	Dr. M. Sarwar Khan, National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad	Agriculture	2005
91	Prof. Dr. Tahir Shah, University of Peshawar, Peshawar	Earth Sciences	2005
92	Dr. Wasim Ahmed, Quaid-i-Azam University, Islamabad	Biochemistry	2006
93	Dr. M. Zakaullah, Quaid-i-Azam University, Islamabad	Physics	2006

S. No.	Award Winner	Discipline	Year
94	Dr. Tasawar Hayat, Quaid-i-Azam University, Islamabad	Mathematics	2006
95	Dr. Muhammad Yasin Ashraf, Nuclear Institute for Agriculture and Biology (NIAB), Faisalabad	Botany	2006
96	Dr. Azhar Mubarik, Army Medical College, Rawalpindi	Medical Sciences	2006
97	Dr. Muhammad Abid, GIK Institute of Sciences and Technology, Topi, Swabi, KPK	Engineering & Technology	2006
98	Dr. Muhammad Sarwar, University of Agriculture, Faisalabad	Agriculture	2006
99	Dr. Muhammad Kaleem Abbasi, University of Azad Jammu & Kashmir, Muzaffarabad	Agriculture	2006

8.2. PAS Gold Medal

S. No.	Award Winner	Discipline	Year
1	Dr. Muhammad Shaiq Ali, University of Karachi, Karachi	Chemistry	2007
2	Dr. Amer Jamil, University of Agriculture, Faisalabad	Biochemistry	2007
3	Dr. Zafar Iqbal, Dr. A.Q. Khan Research Labs, Rawalpindi	Physics	2007
4	Dr. Dilshad Ahmed Khan, Army Medical College, Rawalpindi	Medical Sciences	2007
5	Dr. Muhammad Sayab, University of Peshawar, Peshawar	Earth Sciences	2007
6	Prof. Dr. Ismat Beg, Lahore University of Management Sciences (LUMS), Lahore	Mathematics	2008
7	Dr. Muhammad Iqbal, PCSIR Labs Complex, Lahore	Botany	2008
8	Mr. Aziz Ahmed Qureshi, Pakistan Atomic Energy Commission, Islamabad	Earth Sciences	2008



S. No.	Award Winner	Discipline	Year
9	Dr. Bushra Mirza, Quaid-i-Azam University, Islamabad	Biochemistry	2008
10	Prof. Dr. M. Mansoor Ahmed, M. A. Jinnah University, Islamabad	Engg. & Tech.	2008
11	Prof. Dr. Zafar Iqbal, University of Agriculture, Faisalabad	Agriculture	2008
12	Dr. Ghanzanfer Ali, PMRC Central Research Center, NIH, Islamabad	Biochemistry	2009
13	Prof. Dr. Rasool Bakhsh, Department of Botany, University of Balochistan, Quetta	Botany	2009
14	Dr. Mona Lisa, Department of Earth Sciences, Quaid-i-Azam University, Islamabad	Earth Sciences	2009
15	Prof. Dr. Muhammad Sharif, Department of Mathematics, University of the Punjab, Lahore	Mathematics	2009
16	Dr. Zahir Ahmad Zahir, University of Agriculture, Faisalabad	Agriculture	2010
17	Dr. Muhammad Ansar, Quaid-i-Azam University, Islamabad	Biochemistry	2010
18	Prof. Dr. Asghari Bano, Quaid-i-Azam University, Islamabad	Botany	2010
19	Prof. Dr. Khalid M. Khan, University of Karachi, Karachi	Chemistry	2010
20	Dr. Akhtar Muhammad Kassi, University of Balochistan, Quetta	Earth Sciences	2010
21	Dr. Munir A. Rashid, NUST, Islamabad	Mathematics	2010

S. No.	Award Winner	Discipline	Year
22	Dr. Ambreen Arif, Medical Officer, JPMC, Karachi	Medical Sciences	2010
23	Dr. Nasir Amin, University of Agriculture, Faisalabad	Physics	2010
24	Dr. Abdul Rehman, University of Punjab, Lahore	Zoology	2010
25	Dr. Asma Saeed, Biotechnology & Food Research Center, PCSIR Labs Complex, Lahore	Biochemistry	2011
26	Dr. Mushtaq Ahmad, Department of Plant Sciences Quaid-i-Azam University, Islamabad	Botany	2011
27	Prof. Dr. Haq Nawaz Bhatti, Department of Chemistry & Biochemistry, University of Agriculture, Faisalabad	Chemistry	2011
28	Prof. Dr. Nimatullah Khattak, National Center of Excellence in Geology, University of Peshawar, Peshawar	Earth Sciences	2011
29	Dr. S. F. A. Rafeeqi, Pro-Vice Chancellor, NED University of Engineering & Technology, Karachi	Engineering & Technology	2011
30	Prof. Dr. M. Khaleeq ur Rahman, Chairman, Department of Physics, University of Engineering & Technology, Lahore	Physics	2011
31	Dr. Muhammad Zafar, Department of Plant Sciences, Quaid-i-Azam University, Islamabad	Botany	2012
32	Dr. Farzana Shaheen, H.E.J. Research Institute of Chemistry, International Center for Chemical and Biological Sciences (ICCBBS), University of Karachi, Karachi	Chemistry	2012



S. No.	Award Winner	Discipline	Year
33	Prof. Dr. Muhammad Arif, Department of Geology, University of Peshawar, Peshawar	Earth Sciences	2012
34	Dr. Ghulam Shabbir, GIK Institute of Engineering Sciences & Technology, Topi, Swabi, KPK	Mathematics	2012
35	Dr. Javed Iqbal Akhter, Pakistan Institute of Nuclear Science & Technology (PINSTECH), P.O. Nilore, Islamabad	Physics	2012
36	Prof. Dr. Amin Badshah, Department of Chemistry, Quaid-i-Azam University, Islamabad	Chemistry	2013
37	Dr. Azeem Khalid, Department of Environmental Sciences, Arid Agriculture University, Rawalpindi	Agriculture	2013
38	Dr. Mujahid Abbas, Department of Mathematics, Lahore University of Management Sciences (LUMS), Lahore	Mathematics	2013
39	Prof. Dr. Shahzad Naseem, Centre of Excellence in Solid State Physics, University of the Punjab, Lahore	Physics	2013
40	Dr. Muhammad Shahab, Department of Animal Sciences, Quaid-i-Azam University, Islamabad	Zoology	2013
41	Dr. Abid Mahmood, Ayub Agriculture Research Institute, Jhang Road, Faisalabad	Agriculture	2014
42	Dr. Muhammad Rashid Khan Faculty of Biological Sciences, Department of Biochemistry, Quaid-e-Azam University, Islamabad	Biochemistry	2014

S. No.	Award Winner	Discipline	Year
43	Dr. Mansoor Hameed, Department of Botany, University of Agriculture, Faisalabad	Botany	2014
44	Dr. Irshad Hussain, Department of Chemistry, LUMS, SBA School of Sciences & Engineering (SEE), Lahore.	Chemistry	2014
45	Dr. Rahmat Ali Khan, Dean Faculty of Sciences & Director Quality Enhancement Cell (QEC), University of Malakand at Chakdara, Dir (Lower), KPK	Mathematics	2014
46	Dr. Mahmood Ahmad, Dean, Faculty of Pharmacy & Alternative Medicine, Khawaja Fareed Campus, The Islamia University of Bahawalpur	Medical Sciences	2014
47	Dr. Farhan Saif, Department of Electronics, Quaid-i-Azam University, Islamabad	Physics	2014
48	Dr. Farah Rauf Shakoori, Department of Zoology, University of the Punjab, Lahore	Zoology	2014
49	Dr. Ghulam Murtaza, Institute of Soil and Environmental Sciences, University of Agriculture, Faisalabad	Agricultural Sciences	2015
50	Dr. Naveed Ahmed Khan, Department of Biological Sciences, The Aga Khan University, Karachi	Biological Sciences, including Botany, Zoology, Microbiology and BioChemistry	2015
51	Dr. Shahabuddin Memon, NCE in Analytical Chemistry, University of Jamshoro, Sindh	Chemical Sciences including Pharmaceutical Sciences	2015



S. No.	Award Winner	Discipline	Year
52	Dr. Riffat Nasim Malik, Department of Environmental Sciences, Quaid-i-Azam University, Islamabad	Earth& Environmental Sciences	2015
53	Prof. Dr. Muhammad Wasay, Department of Medicine, The Aga Khan University, Karachi	Health Sciences	2015
54	Dr. Iftikhar Ahmad, Department of Physics, University of Malakand, Chakdara	Physics	2015
55	Dr. Tufail Hussain Shah, University of Sindh, Jamshoro	Chemical Sciences	2016
56	Dr. Qaiser Mehmood, COMSATS Institute of IT, Abbottabad	Earth and Environmental Sciences	2016
57	Dr. Tayyab Husnain, CEMB, University of Punjab, Lahore	Emerging Technologies	2016
58	Dr. Sohail Nadeem, Quaid-i-Azam University, Islamabad	Mathematical Sciences	2016
59	Dr. Shahid Ali, Quaid-e-Azam Campus, Islamabad	Physics	2016
60	Dr. Muhammad Farooq, University of Agriculture, Faisalabad	Agricultural Sciences	2017
61	Syed Sohail Zahoor Zaidi, Virology National Institute of Health, Islamabad, Pakistan	Biological Sciences	2017
62	Dr. Jamshed Iqbal, Department of Pharmacy, CIIT, Abbottabad	Chemical Sciences	2017
63	Dr. Shafaqat Ali, Government College University, Faisalabad	Earth and Environmental Sciences	2017
64	Dr. Muhammad Idrees, Hazara University, Mansehra, KP	Emerging Technologies	2017

S. No.	Award Winner	Discipline	Year
65	Dr. Masood Khan, Quaid-i-Azam University, Islamabad	Mathematical Sciences	2017
66	Dr. Yaseen Iqbal, Materials Research Laboratory, University of Peshawar, Peshawar	Physics	2017
67	Prof. Dr. Jehan Bakht, Khushal Khan Khattak University of Karak, KP	Agricultural Sciences	2018
68	Dr. Muhammad Asgher, Faculty of Sciences Department of Biochemistry University of Agriculture, Faisalabad	Biological Sciences	2018
69	Dr. Aamer Ali Shah, Department of Microbiology Faculty of Biological Sciences Quaid-i-Azam University, Islamabad	Biological Sciences	2018
70	Prof. Dr. Sirajuddin, National Centre of Excellence in Analytical Chemistry, University of Sindh, Jamshoro	Chemical Sciences	2018
71	Dr. Sardar Khan, Department of Environmental Sciences, University of Peshawar	Earth and Environmental Sciences	2018
72	Dr. Muhammad Maroof Shah, Department of Environmental Sciences, CIIT Abbottabad	Emerging Technologies	2018
73	Dr. Rizwan Raza, Department of Physics, CIIT, Islamabad	Engineering Sciences	2018
74	Prof. Dr. Riaz Ahmad, Head of Physics Department, Dean Faculty of Engineering, GC University, Lahore	Physics	2018
75	Dr. Masroor Ellahi Babar, Faculty of Science and Technology, Virtual University, Lahore	Agricultural Sciences	2019



S. No.	Award Winner	Discipline	Year
76	Dr. Habib Ahmad, Islamia College, Peshawar	Biological Sciences	2019
77	Dr. Syed Ghulam Musharraf, Dr. Panjwani Centre for Molecular Medicine and Drug Research, University of Karachi, Karachi	Chemical Sciences	2019
78	Dr. Muhammad Rizwan, Department of Environmental Sciences and Engineering, GC University, Faisalabad	Earth and Environmental Sciences	2019
79	Dr. Iftikhar Ahmed, NARC, Islamabad	Emerging Technologies	2019
80	Dr. M. Sajid Hamid Akash, Department of Pharmaceutical Chemistry, GC University Faisalabad	Health Sciences	2019
81	Dr. Mehboob-ur-Rehman, Plant Biotechnology Division, National Institute for Biotechnology & Genetic Engineering (NIBGE), Faisalabad	Agricultural Sciences	2020
82	Dr. Rahmat Ali Khan, Department of Biotechnology University of Science & Technology Bannu	Biological Sciences	2020
83	Dr. Shahnaz Perveen, Pakistan Council of Scientific & Industrial Research Laboratories Complex, Karachi	Chemical Sciences	2020
84	Dr. Muhammad Afzal, National Institute for Biotechnology & Genetic Engineering (NIBGE), Faisalabad	Earth and Environmental Sciences	2020
85	Dr. Amjad Ali, Atta-ur-Rahman School of Applied Biosciences National University of Sciences and Technology Islamabad	Emerging Technologies	2020

S. No.	Award Winner	Discipline	Year
86	Dr. Muhammad Zahir Iqbal, GIK Institute of Engineering Sciences & Technology, Topi, KP	Engineering Sciences	2020
87	Dr. Yasir Waheed, Foundation University Medical College Foundation University, Islamabad	Health Sciences	2020
88	Dr. Maaz Khan, Physics Division, PINSTECH, Nilore, Islamabad	Physics	2020
89	Dr. Nauman Khalid, School of Food and Agriculture Sciences University of Management & Technology Lahore	Agricultural Sciences	2021
90	Dr. Abdul Nasir Khalid, Department of Botany University of Punjab, Lahore	Biological Sciences	2021
91	Dr. Afzal Shah, Department of Chemistry Quaid-i-Azam University, Islamabad	Chemical Sciences	2021
92	Dr. M. Zia-ur-Rehman, Institute of Soil & Environmental Sciences, University of Agriculture, Faisalabad	Earth and Environmental Sciences	2021
93	Dr. Nasir Ali, Department of Mathematics and Statistics, International Islamic University, Islamabad	Mathematical Sciences	2021
94	Dr. Saira Riaz, Centre of excellence in Solid State Physics University of Punjab, Lahore	Physics	2021



8.3. PAS Gold Medal (Under 40 Years)

S. No.	Award Winner	Discipline	Year
1	Dr. Riazuddin, University of Islamabad, Islamabad	Physical Sciences	1968
2	Dr. Mrs. Nasima M. Tirmizi, University of Karachi, Karachi	Biological Sciences	1969
3	Dr. Mrs. Bilqees Mujib, University of Karachi, Karachi	Biological Sciences	1971
4	Dr. Viqaruddin Ahmad, University of Karachi, Karachi	Physical Sciences	1972
5	Dr. Hameed Ahmed Khan, Pakistan Atomic Energy Commission (PAEC), Islamabad	Physical Sciences	1974
6	Dr. M. Ijaz, Pakistan Atomic Energy Commission (PAEC), Islamabad	Biological Sciences	1975
7	Dr. Atta-ur-Rahman, H.E.J. Research Institute of Chemistry, University of Karachi, Karachi	Physical Sciences	1976
8	Dr. Qasim Jan, University of Peshawar, Peshawar	Physical Sciences	1979
9	Dr. S. Riazuddin, University of the Punjab , Lahore	Biological Sciences	1980
10	Dr. Arif Ali Zaidi, Quaid-i-Azam University, Islamabad	Biological Sciences	1982/83
11	Dr. Fazl-e-Aleem, University of the Punjab, Lahore	Physical Sciences	1985
12	Dr. Khalid Pervez Lone, University of the Punjab, Lahore	Biological Sciences	1986

S. No.	Award Winner	Discipline	Year
13	Dr. M. Aslam Baig, Quaid-i-Azam University, Islamabad	Physical Sciences	1987
14	Dr. Suhail Zuberi, Quaid-i-Azam University, Islamabad	Physical Sciences	1989
15	Dr. Muhammad Ashraf, Bahauddin Zakria University, Multan	Biological Sciences	1990
16	Dr. S. Kamaluddin, Urdu Science College, Karachi	Biological Sciences	1992
17	Mr. Shoaib Ismail, University of Karachi, Karachi	Biological Sciences	1993

8.4. PAS/Infaq Foundation Agha Hasan Abedi Gold Medal

S. No.	Award Winner	Discipline	Year
1	Dr. Hameed Ahmed Khan, PINSTECH, Islamabad	Physical Sciences	1995
2	Dr. Syed Moosa Hasany, PINSTECH, Islamabad	Chemical Sciences	1995
3	Dr. M. Perwaiz Iqbal, Aga Khan University, Karachi	Biological Sciences	1995
4	Dr. Anwar-ul-Haque, KRL, Rawalpindi	Engineering Sciences	1995
5	Dr. Abdul Malik HEJ Research Institute of Chemistry, University of Karachi, Karachi	Chemistry	1998
6	Dr. Kamaluddin Ahmad, Quaid-i-Azam University Islamabad	Physics	1998
7	Dr. Naseer Shahzad, Quaid-i-Azam University Islamabad	Mathematics	1998
8	Dr. S. Naimul Hasan Naqvi, University of Karachi, Karachi	Zoology	1998



S. No.	Award Winner	Discipline	Year
9	Dr. Mustafa Shameel, University of Karachi, Karachi	Botany	1998
10	Dr. Waheed-uz-Zaman Tariq, AFIP, Rawalpindi	Medical Sciences	1998
11	Dr. Anjum Tauqir, Dr. A.Q. Khan Research Labs, Rawalpindi	Engineering Sciences	1998
12	Dr. Habib-ur-Rahman, A.J.K. University, Muzaffarabad	Chemistry	1999
13	Dr. M. Ajmal Khan, University of Karachi, Karachi	Botany	1999
14	Dr. Anwar-ul-Hassan Gilani, Aga Khan University Medical College, Karachi	Sciences	1999
15	Dr. Fazal A. Khalid, GIK Institute of Engineering Sciences & Technology, Topi, Swabi, KPK	Engineering & Technology	1999
16	Dr. Iftikhar Ahmad, Pakistan Agriculture Research Council (PARC), Islamabad	Agriculture	1999
17	Dr. Asghari Maqsood, Quaid-i-Azam University Islamabad	Physics	2000
18	Dr. Qaiser Mushtaq Quaid-i-Azam University, Islamabad	Mathematics	2000
19	Dr. Muhammad Javed, University of Agriculture, Faisalabad	Zoology	2000
20	Dr. Muhammad Perwaiz Iqbal, Aga Khan University, Karachi	Medical Sciences	2000

S. No.	Award Winner	Discipline	Year
21	Dr. M. Ramzan Sabayo, Mehran University of Engineering & Technology, Jamshoro	Engineering & Technology	2000
22	Dr. Zahid Hussain Chohan, Islamia University, Bahawalpur	Chemistry	2001
23	Dr. Muhammad Ali, B. Zakria University, Multan	Zoology	2001
24	Dr. S. M. Saifullah, University of Karachi, Karachi	Botany	2001
25	Dr. Muhammad Yunus Khan, H. No. 785, St. 6, I-9/1, Islamabad	Medical Sciences	2001
26	Dr. Muhammad Afzaal Malik, NUST, Rawalpindi	Engineering & Technology	2001
27	Dr. Muhammad Arshad, University Agriculture, Faisalabad	Agriculture	2001
28	Dr. Mrs. Tahseen Aman, Pakistan Council for Science and Industrial Research (PCSIR), Lahore	Chemistry	2002
29	Dr. M. Ziad, Quaid-i-Azam University, Islamabad	Mathematics	2002
30	Dr. Aleem Ahmad Khan, Bahauddin Zakariya University, Multan	Zoology	2002
31	Col. Abdul Khaliq Naveed, Army Medical College, Rawalpindi	Medical Sciences	2002
32	Dr. Muhammad Akram Kahlown, PCRWR, Islamabad	Engineering & Technology	2000
33	Dr. Syed Manzoor Alam, Nuclear Institute of Agriculture, Tandojam	Agriculture	2002



8.5. PAS/Infraq Foundation Agha Hasan Abedi Prize for Best Scientist of the Year (Gold Medal and Rs. 200,000/-)

S. No.	Award Winner	Discipline	Year
1	Prof. Dr. Atta-ur-Rahman, HEJ Research Institute of Chemistry, University of Karachi,	Science (Chemistry)	1995
2	Prof. Dr. Abdul Raouf, GIK Institute of Engineering Sciences & Technology, Topi, Swabi, KPK	Engineering & Technology	1998
3	Dr. Syed Qasim Mehdi, KRL, Islamabad	Biotechnology & Genetic Engineering	1999
4	Dr. Riaz Hussain Qureshi, University Agriculture, Faisalabad	Agriculture	2000
5	Dr. Riazuddin, Quaid-i-Azam University, Islamabad	Physics	2001

8.6. Dr. M. Raziuddin Siddiqi Prize for Scientists under 40

S. No.	Award Winner	Discipline	Year
1	Dr. Qaiser Mushtaq, Quaid-i-Azam University, Islamabad	Mathematics	1991
2	Dr. Mohammad Iqbal Choudhry, HEJ Research Institute of Chemistry, University of Karachi,	Chemistry	1992
3	Dr. Hamid Saleem, PINSTECH, Islamabad	Physics	1993
4	Dr. Muhammad Sarfraz, University of the Punjab, Lahore	Mathematics	1994
5	Dr. Muhammad Javed Akhtar, PINSTECH, Islamabad	Chemistry	1995
6	Dr. Arshad Majid Mirza, Quaid-i-Azam University, Islamabad	Physics (Shared)	1996
7	Mr. Muhammad Arshad, PINSTECH, Islamabad	Physics (Shared)	1996

S. No.	Award Winner	Discipline	Year
8	Dr. Muhammad Ayub, Quaid-i-Azam University, Islamabad	Mathematics	1997
9	Dr. M. Masoom Yasinzi, University of Balochistan, Quetta	Biochemistry	1998
10	Dr. Tasawar Hayat, Quaid-i-Azam University, Islamabad	Mathematics	1999
11	Dr. M. Shaiq Ali, HEJ Research Institute of Chemistry, University of Karachi, Karachi	Chemistry	2001
12	Dr. Shahid Qamar, PIEAS, Islamabad	Physics	2001
13	Dr. Muhammad Sharif, University of the Punjab, Lahore	Mathematics	2002
14	Dr. Aamir Saeed Bhatti, Quaid-i-Azam University, Islamabad	Chemistry	2003
15	Dr. Arif Mumtaz, Quaid-i-Azam University, Islamabad	Physics	2004
16	Mr. M. Raheel Mohyuddin, Quaid-i-Azam University, Islamabad	Mathematics	2005
17	Dr. Farzana Shaheen, Quaid-i-Azam University, Islamabad	Chemistry	2006
18	Dr. Sohail Nadeem, Quaid-i-Azam University, Islamabad	Mathematics	2008
19	Dr. Sonia Zulfiqar, Quaid-i-Azam University, Islamabad	Chemistry	2009



S. No.	Award Winner	Discipline	Year
20	Dr. M. Shahid Rafique, University of Engineering & Technology, Lahore	Physics	2010
21	Dr. Mubashir Jamil, NUST, Islamabad	Mathematics	2011
22	Dr. Hassan Imran Afridi, University of Sindh, Jamshoro	Chemistry	2012
23	Dr. Zaheer Abbas Department of Mathematics, The Islamia University of Bahawalpur, Bahawalpur	Mathematics	2014
24	Dr. M. Raza Shah H.E.J. Research Institute of Chemistry, International Center for Chemical and Biological Sciences (ICCBS), University of Karachi	Chemistry	2015
25.	Dr. Rashid Jalil UET, Lahore	Physics	2016
26	Dr. Noreen Sher Akbar National University of Sciences & Technology, College of Electrical and Mechanical Engineering, Rawalpindi	Mathematics	2017
27	Dr. Muhammad Asif Hanif Department of Chemistry University of Agriculture, Faisalabad	Chemistry	2018
28	Dr. Zahoor Hussain Farooqi Department of Chemistry University of Punjab, Lahore	Chemistry	2021

8.7. TWAS Cash Prize (under 40 Years)

S. No.	Award Winner	Discipline	Year
1	Dr. Qaiser Mushtaq, Quaid-i-Azam University, Islamabad	Mathematics (Shared)	1993

S. No.	Award Winner	Discipline	Year
2	Dr. Syed Khurshid Husnain, Quaid-i-Azam University, Islamabad	Physics (Shared)	1993
3	Dr. Mohammad Iqbal Choudhry, HEJ Research Institute of Chemistry, University of Karachi, Karachi	Chemistry	1994
4	Dr. Muhammad Iqbal, PCSIR, Lahore	Biology (Shared)	1995
5	Dr. Bukhtiar Hussain Shah, Aga Khan University, Karachi	Biology (Shared)	1995
6	Dr. Khalid Jamil, PINSTECH, Nilore, Islamabad	Physics	1996
7	Dr. M. Shaiq Ali, HEJ Research Institute of Chemistry, University of Karachi, Karachi	Chemistry	1997
8	Dr. Rehana Asghar, University of Balochistan, Quetta	Botany (Shared)	1998
9	Dr. M. Shahab, Quaid-i-Azam University, Islamabad	Biology (Shared)	1998
10	Dr. Arshad Majid Mirza, Quaid-i-Azam University, Islamabad	Physics (Shared)	1999
11	Mr. Shahid Manzoor, PINSTECH, Nilore, Islamabad	Physics (Shared)	1999
12	Dr. Tasawar Hayat, Quaid-i-Azam University, Islamabad	Mathematics	2000
13	Dr. Amir Azam Khan, GIK Institute of Engineering Sciences & Technology, Topi, Swabi, KPK	Chemistry	2001



S. No.	Award Winner	Discipline	Year
14	Dr. Amer Jamil, University of Agriculture, Faisalabad	Biology	2002
15	Dr. Farhan Saif, Quaid-i-Azam University, Islamabad	Physics	2003
16	Dr. Ghulam Shabbir, GIK Institute of Engineering Sciences & Technology, Topi, Swabi, KP	Mathematics	2004
17	Dr. Shazia Anjum, HEJ Research Institute of Chemistry, University of Karachi, Karachi	Chemistry	2005
18	Dr. Zubair Ahmad, University of the Punjab, Lahore	Biology	2006
19	Dr. Muhammad Sabieh Anwar, Lahore University of Management & Sciences (LUMS), Lahore	Physics	2007
20	Dr. Masood Khan, Quaid-i-Azam University, Islamabad	Mathematics	2008
21	Dr. Muhammad Idrees, National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore	Biology	2009
22	Dr. Syed Munir Hussain, Quaid-i-Azam University, Islamabad	Chemistry	2010

8.8. Dr. M.N. Azam Prize for Pakistani Scientists in Computer Science (Software)

S. No.	Award Winner	Discipline	Year
1	Dr. Muhammad Yaqub, PCSIR, Karachi	Computer Science (Software)	1998
2	Dr. Mohammad Mahboob, Pakistan Atomic Energy Commission (PAEC), Islamabad	Computer Science (Software)	1999

S. No.	Award Winner	Discipline	Year
3	Mr. Ghulam Mustafa, Pakistan Atomic Energy Commission (PAEC), Islamabad	Computer Science (Software)	2000
4	Dr. Salman Iqbal, A.Q. Khan Res. Labs, Rawalpindi	Computer Science (Software)	2001
5	Dr. Sarmad Hussain, University of the Punjab, Lahore	Computer Science (Software)	2002
6	Mr. Zaheer Aziz, International Islamic University, Islamabad	Computer Science (Software)	2003
7	Mr. Ali Nasir, NESCOM, Islamabad	Computer Science (Software)	2004
8	Mr. Ahsan Abdullah, National University of Computer & Emerging Sciences, Islamabad	Computer Sciences (Software)	2005
9	Dr. Asif Masood, National University of Science & Technology (NUST), Islamabad	Computer Sciences (Software)	2009
10	Dr. SiffatUllah Khan, Department of Computer Science and IT University of Malakand, Chakdara	Computer Science (Software)	2015

8.9. PAS-COMSTECH Prize in Computer Science (IT)

S. No.	Award Winner	Discipline	Year
1	Dr. Imdad Ali Ismaili, University of Sindh, Jamshoro	Information Technology	2003
2	Prof. Dr. Arshad Ali, Institute of Information Technology, NUST, Rawalpindi	Computer Science	2004
3	Dr. Hafiz Farooq Ahmad, Institute of Information Technology, NUST, Islamabad	Computer Science/IT	2005



S. No.	Award Winner	Discipline	Year
4	Dr. Asifullah Khan, PIEAS, Nilore, Islamabad	Computer Science/IT	2011
5	Dr. Abdul Majid, Pakistan Institute of Engineering and Applied Science (PIEAS), Nilore, Islamabad	Computer Science/ (IT)	2014
6	Dr. Asim Karim, University of Management Sciences, Sector U, DHA, Lahore	Computer Science/(IT)	2015

8.10. Dr. Atta-ur-Rahman Gold Medal in Chemistry for Scientists under 40

S. No.	Award Winner	Discipline	Year
1	Prof. Dr. Nighat Afza, PCSIR Labs Complex, Karachi	Chemistry	2004
2	Dr. Muhammad Iqbal Bhanger, University of Sindh, Jamshoro	Chemistry	2005
3	Dr. Irshad Hussain, NIBGE, Faisalabad	Chemistry	2007
4	Dr. Zaheer-ul-Haq, University of Karachi, Karachi	Chemistry	2008
5	Dr. Mazhar Hamid, G-11/1, Islamabad	Chemistry	2009
6	Dr. Farooq Anwar, University of Agriculture, Faisalabad	Chemistry	2010
7	Dr. Umar Farooq, CIIT, Abbottabad	Chemistry	2011
8	Dr. Basit Yameen, School of Sciences and Engineering, LUMS, Lahore	Chemistry	2012
9	Dr. Syed Ghulam Musharraf, HEJ Research Institute of Chemistry, International Center for Chemical and Biological Sciences (ICCBS), University of Karachi, Karachi	Chemistry	2013

S. No.	Award Winner	Discipline	Year
10	Dr. Muhammad Balal, University College of Science, Mardan	Chemistry	2014
11	Dr. Itrat Anis, University of Karachi, Karachi	Chemistry	2015
12	Dr. Jameel Ahmed Baig, National Center of Excellence in analytical Chemistry, University of Sindh, Jamshoro	Chemistry	2016
13	Dr. Zia-ur-Rehman, Department of Chemistry, Quaid-i-Azam University, Islamabad	Chemistry	2017
14	Dr. Hassan Imran Afridi, National Centre of Excellence in Analytical Chemistry, University of Sindh, Jamshoro	Chemistry	2018
15	Dr. Muhammad Naeem Ashiq, Institute of Chemical Sciences, Bahauddin Zakariya University (BZU), Multan	Chemistry	2019
16	Dr. Abdul Sadiq Department of Pharmacy University of Malakand Dir (L), KP	Chemistry	2021

8.11. Distinguished Scientist of the Year Award

S. No.	Award Winner	Discipline	Year
1	Dr. Sheikh Riazuddin, National Center of Excellence in Molecular Biology (NCMB), Lahore	Biology	2004
2	Prof. Dr. M. Salim Akhter, University of South Asia, Lahore	Medical Sciences	2005
3	Prof. Dr. Arshad Ali, Information Technology, NUST, Rawalpindi	Computer Sciences	2006



S. No.	Award Winner	Discipline	Year
4	Dr. Muhammad Anwar Waqar, University of Karachi, Karachi	Biochemistry	2007
5	Prof. Dr. M. Ajmal Khan, University of Karachi, Karachi	Botany	2008
6	Dr. M. Qasim Jan, Quaid-i-Azam University, Islamabad	Earth Sciences	2009
7	Dr. Tasawar Hayat, Department of Mathematics, Quaid-i-Azam University, Islamabad	Mathematics	2010
8	Prof. Dr. Abdul Rauf Shakoori, School of Biological Sciences University of the Punjab, Lahore	Zoology	2011
9	Prof. Dr. Muhammad Ashraf, Distinguished National Professor, Director-Quality Enhancement Cell, University of Sargodha, Sargodha	Botany	2013
10	Prof. Dr. Wasim Ahmad, Department of Biochemistry, Quaid-i-Azam University, Islamabad	Biochemistry	2013

8.12. Meritorious Service Award (Special Medal)

S. No.	Award Winner	Discipline	Year
1	Dr. A. Quadeer Khan, KPL, Rawalpindi		1998
2	Dr. Ishfaq Ahmad, Pakistan Atomic Energy Commission (PAEC), Islamabad		1998

8.13. World Science Day for Peace and Development Award

S.No.	Award Winner	Discipline	Year
1	Dr. A. Quadeer Khan, KPL, Rawalpindi		1998

8.14. Dr. Shah Jahan Prize for Scientists under 40

S. No.	Award Winner	Discipline	Year
1	Dr. Muhammad Azim Khan, KPK Agricultural University, Peshawar	Agriculture	2010
2	Dr. Nudrat Aisha Akram, GC University, Faisalabad	Botany	2012
3	Dr. Irfan Ullah Jan, NCE in Geology, University of Peshawar	Earth Sciences	2014
4	Dr. Shamaila Sajjad, International Islamic University, Islamabad	Emerging Technologies	2015
5	Dr. Rafi-ud-din, Materials Division, PINSTECH, Nilore, Islamabad	Engineering Sciences	2016
6	Dr. Zafar Hayat Khan, Department of Mathematics University of Malakand Chakdara, Dir Lower, KP	Mathematics	2018
7	Dr. Faheem Khurshied Butt, Division of Science and Technology, University of Education, Lahore	Physics	2019
8	Dr. Shah Fahad, Department of Agronomy University of Haripur, KP	Agriculture Sciences	2021

8.15. TWAS Abdus Salam Prize in Basic Sciences for Scientists under 40

S. No.	Award Winner	Discipline	Year
1	Dr. Zia ur Rahman, Department of Biochemistry, Quaid-i-Azam University, Islamabad	Chemistry	2011
2	Dr. Sohail Nadeem, Department of Mathematics, Quaid-i-Azam University, Islamabad	Mathematics	2012



S. No.	Award Winner	Discipline	Year
3	Dr. Mubasher Jamil, School of Natural Sciences (SNS) National University of Sciences and Technology (NUST), H-12, Islamabad	Mathematics	2016
4	Dr. Tariq Mahmood, Department of Plant Sciences Quaid-i-Azam University, Islamabad	Biology	2017
5	Dr. Muhammad Tahir, The University of Lahore, Lahore	Physics	2018

8.16. TWAS Salimuzzaman Siddiqui Prize in Applied Science & Technology for Scientists under 40

S. No.	Award Winner	Discipline	Year
1	Dr. Mehboob ur Rehman, National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad	Agricultural Sciences	2011
2	Dr. Sher Jamal Khan, Institute of Environmental sciences and Engineering, NUST, Islamabad	Engineering Sciences	2017

8.17. Prof. Zabta K. Shinwari Gold Medal in Biotechnology for Scientists under 50

S. No.	Award Winner	Discipline	Year
1	Dr. Bilal Haider Abbasi, Department of Biotechnology, Quaid-i-Azam University, Islamabad	Biotechnology	2016
2	Dr. Zulfiqar Ali, Department of Plant Breeding & Genetics, Muhammad Nawaz Shareef University of Agriculture, Multan	Biotechnology	2017
3	Dr. Moazur Rahman, NIBGE, Faisalabad	Biotechnology	2018

S. No.	Award Winner	Discipline	Year
4	Dr. Muhammad Imran Qadir, Institute of Molecular Biology and Biotechnology, Bahauddin Zakariya University (BZU), Multan	Biotechnology	2019
5	Dr. Abdul Rehman, Department of Microbiology & Molecular Genetics, University of Punjab, Lahore	Biotechnology	2020
6	Dr. Muhammad Zafar, Department of Plant Sciences Quaid-i-Azam University, Islamabad	Biotechnology	2021

***8.18. Abdus Salam Prize in Basic Sciences for Scientists under 40**

S. No.	Award Winner	Discipline	Year
1	Dr. Munawar Iqbal, Department of Chemistry, University of Lahore	Chemistry	2019
2	Dr. M. Imran Arshad, Institute of Microbiology University of Agriculture, Faisalabad	Biology	2021

**Since the funding from the TWAS has been stopped, the Council decided to continue this award with monetary benefit comparable to PAS Gold Medals & Prizes in its meeting held on October 12, 2019 approved by the G.B on December 03, 2019.*

***8.19. Salimuzzaman Siddiqui Prize in Applied Science & Technology**

S. No.	Award Winner	Discipline	Year
1	Dr. Muhammad Naveed, Assistant Professor Institute of soil and Environment Sciences, University of Agriculture, Faisalabad	Agricultural Sciences	2019
2	Dr. Usman Akram, National University of Science and Technology, Sector H-12, Islamabad	Engineering Sciences	2021

**Since the funding from the TWAS has been stopped, the Council decided to continue this award with monetary benefit comparable to PAS Gold Medals & Prizes in its meeting held on October 12, 2019 approved by the G.B on December 03, 2019.*



9. PROFILES OF FELLOWS

Pakistan Academy of Sciences
2022



Abbas, Farhat

FELLOW: Elected 2012

Born in Hyderabad, Pakistan on July 15, 1960

Dean, Medical College,
The Hussein Cumber Professor (Urology), The Aga Khan University Stadium Road,
PO Box 3500, Karachi-74800

Tel: (021) 34864 409

Mob: 0300-824 8568

Email: farhat.abbas@aku.edu

Education: MBBS, Dow Medical College, Karachi, 1984; Fellowship in Urologic Oncology, Jackson Memorial Hospital, University of Miami, Florida, USA, 1995; Research and Clinical Fellowship in Urologic Oncology, Baylor College of Medicine, Houston, Texas, USA, 1997; FEBU, 2001; FACS, 2006.

Positions Held: Professor of Urology, The Aga Khan University, Karachi, 2008 to present; Associate Dean, Postgraduate Medical Education, The Aga Khan University, 200–2003; Acting Dean, Medical College, The Aga Khan University, 2002–2003; Medical Director & Associate Dean Clinical Affairs, The Aga Khan University, 2003–2007; Chief Operating Officer, The Aga Khan University Hospital, Karachi, 2007–2009; Interim Dean, Medical College, The Aga Khan University, 2009–2010; Dean, Medical College, The Aga Khan University, 2010–present.

Awards: Development Award, The Aga Khan University, 1993; G.B. Ong Gold Medal, Royal College of Surgeons of Edinburgh, 1993; International Guest Fellowship Award, American College of Surgeons, 2001; Hussain Cumber Endowed Professorship, Aga Khan University, 2002; Tamgha-i-Imtiaz, Government of Pakistan, 2009.

Fellowships/ Memberships: Fellow, College of Physicians and Surgeons of Pakistan (FCPS), 1992; Fellow, Royal College of Surgeons (FRCS), Edinburgh, UK, 1993; Fellow, Royal College of Physicians and Surgeons (FRCS), Glasgow, UK, 1993; Fellow, European Board of Urology, 2001; Fellow, American College of Surgeons, UK, 2006; Member, Pakistan Medical Association; Member, American Medical Association; Member, American Urological Association; Founding and Life Member, Pakistan Association of Urological Surgeons; Member, Urological Association of Asia, Member, Asian Society of Uro-Oncology and Asian School of Urology.

Research Areas: Molecular Research in Prostate Cancer and Urinary Bladder Cancer; Molecular Genetics; Epigenetics in Urological Cancers; Medical Education.



Ahmad, Imtiaz

FELLOW: Elected 1990

Born in Gaya, India on January 3, 1941

Biological Research Center, University of Karachi, Karachi

Tel: (92-21) 3497 9669, 3496 1943

Mob: (92) 323 211 0788

Email: iahmad3141@yahoo.com

Education: University of Karachi, Pakistan: B.Sc., 1958; M.Sc., 1961; Imperial College, London, UK: D.I.C., 1963; London University, UK: Ph.D., 1963; D.Sc., 1984.

Positions Held: University of Karachi: Dean, Faculty of Science, 2000-2001; Meritorious Professor of Zoology, 1999; Professor of Zoology, 1979-1999; Chairman, Department of Zoology, 1974, 1976, 1984, 1987, 1988, 1994, 1997, 2000; Associate Professor, 1971-1979; Postdoctoral Fellow, University of Connecticut, Storrs, USA, 1963-1965; Visiting Scientist, PABIO, Cardiff, University of Wales, UK, 1992-1993; Visiting Professor, Faculty of Agriculture, Ege University, Izmir, Turkey, 1988-1989; Visiting Professor, Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, USA, 1985-1986; Associate Professor, Faculty of Science, University of Mosul, Iraq, 1971-1973.

Awards: Pakistan Academy of Sciences: Open Gold Medal, 1984; Distinguished Scientist of the Year, 1994; National Book Foundation Award, 1997; Izaz-e-Kamal, Govt. of Pakistan, 1998; Presidential Award of Pride of Performance, Govt. of Pakistan, 1999; Lifetime Achievement Award of Zoological Society of Pakistan, 2010; Two dozen Gold Medals from national and international organizations.

Fellowships/ Memberships: Honorary Fellow of Zoological Society of Bangladesh, 1983; Fellow, Royal Entomological Society, London, 1963; Fellow, Environmental Sciences Academy, India, 1996; Fellow, The Academy of Sciences for the Developing World (TWAS), Trieste, Italy, 1996.

Research Areas: Pesticidal Pollution, Genotoxicity, Phytopesticides, Biodiversity, Biosystematics and Bioecology.



Ahmad, Nisar

FELLOW: Elected 1999

Born in Okara, India, on April 2, 1942

House No. 17, Main Double Road,
F-11/1, Islamabad

Mob: (92) 321-516 7697

- Education:** University of the Punjab, Pakistan: B.Sc., 1961; M.Sc., 1963; Queens University, Belfast, UK: Ph.D., 1970.
- Positions Held:** Rafi M. Chaudhary Chair, Govt. College University, Lahore, 2008-2011; Advisor (Technical) and Director Human Resource Development, National Engineering and Scientific Commission (NESCOM), Islamabad, 2001-2008; Pakistan Institute of Nuclear Science and Technology (PINSTECH), Islamabad: Director General, 2000-2001; Associate Director, 1998-2000; Chief Scientist/Head, Applied Physics Division, 1992-1998; Chief Scientific Officer/Head, Laser Development Project, 1988-1992; Principal Scientific Officer, 1976-1988; Senior Scientific Officer, 1971-1976; Scientific/Sr. Scientific Officer, Atomic Energy Centre, Lahore, 1964-1966, 1970-1971; Lecturer, Islamia College, Lahore, 1963-1964.
- Awards:** *Sitara-i-Imtiaz*, Govt. of Pakistan, 1997; Open Gold Medal, Pakistan Academy of Sciences, 1996; Roll of Honor, M.Sc., Govt. College, Lahore.
- Fellowships/ Membership:** Fellow, Pakistan Nuclear Society; President, Pakistan Nuclear Society, 1998-1999; Member, Academic Council, Govt College University, Lahore.
- Research Areas:** Gamma Spectroscopy, Neutron Polarization, Laser-produced Plasmas, Laser Spectroscopy, Laser Isotope Separation, Laser Material Processing, Laser Ablation, Environmental Studies using Proton Induced X-ray Emission (PIXE), Laser Guidance and Fiber Optics Gyro (FOG).



Ahmad, Rafiq

FELLOW: Elected 1990

Born in India, on November 2, 1927

Biosaline Research Program, Department of Botany,
University of Karachi, Karachi-75270

Tel: Office, (92-21) 926 1359

Mob: 0300-266 7415

Email: agrisalt@super.net.pk, biosalinepk@yahoo.com

- Education:** Muslim University Aligarh, India: B.Sc., 1949; University of the Punjab, Lahore, Pakistan: M.Sc., 1952; Ohio State University, Columbus, Ohio, USA: Ph.D., 1959.
- Positions Held:** University of Karachi, Karachi: P.I., Biosaline Research Projects, 1987-present; HEC Consultant and Eminent Scholar, 2004-2008; Dean, Faculty of Sciences, 1979-1981; Chairman, Department of Botany, 1972-1975, 1981-1984; Professor, 1974-1987; Associate Professor, 1964-1974; Assistant Professor, 1956-1964; Convener, Institute of Biological Sciences, 1972-1977; Founder Chairman, Department of Biochemistry, 1962-1963; Lecturer, 1953-1956. Graduate Assistant, Ohio State University, Columbus, Ohio, USA, 1956-1959. Lecturer, F.C. College, Lahore, 1952-1953.
- Awards:** Certificate of Appreciation as Principal Investigator "Glycoalkaloids" Research Project of Pakistan's Potatoes, USDA, 1987; Award by Pakistan Botanical Society (in recognition of contribution in Botany), 1990; Certificate for the Accomplishment of Innovate Research Applications under BOSTID-PARC, U.S. National Academy of Sciences Research Program, 1994; Appreciation Certificate under ACIAR Project "Tree Growing on salt-affected Land in Pakistan, Thailand and Australia", 1996; Award of shield as founder member of Technical Committee for establishment of International Center of Biosaline Agriculture (LCBA) Dubai, UAE, 1993-1998.
- Fellowships/ Memberships:** Fellow, The Academy of Sciences for the Developing World (TWAS), 1996; Visiting Professor, German Academy Exchange Program (DAAD), Hohenheim University, Munchin University & Berlin University, Germany, 1976; Member: Sigma Xi., USA, 1959; Member Award Committee on Agriculture, TWANSO, Trieste, Italy, 1999-2000; Member International Committee of Photobiology, Paris, France, 1968-1970; President, Botanical Society of Pakistan, 1974-1978. Regional Director, Halophyte Biotechnology Centre, University of Delaware, USA since 1995. Secretary, Pakistan Academy of Sciences, Sindh Chapter, 2000-2004.
- Research Area:** Plant Physiology with emphasis on Mineral Nutrition and Growth, Arid Zone Coastal and Biosaline Agriculture.



Ahmed, Wasim

FELLOW: Elected 2010

Born in Charsada, KP, Pakistan, on May 2, 1957

Dept of Biochemistry, Faculty of Biological Sciences,
Quaid-i-Azam University, Islamabad

Tel: (Off) (92-51) 9064 3003; (Res) (92-51) 260 1197

Mobile: 0300-535 7427

Email: wahmad@qau.edu.pk

- Education:** Quaid-i-Azam University, Islamabad, Pakistan: M.Sc. 1981; M.Phil. 1984; University of Cambridge, England: PhD, 1990.
- Positions Held:** Tenured Professor, HEC-Distinguished National Scientist, Department of Biochemistry, Faculty of Biological Sciences, Quaid-i-Azam University, Islamabad, Pakistan.
- Awards:** Distinguished Scientist of the Year in Biochemistry, Pakistan Academy of Sciences, 2013; Pakistan Academy of Science Gold Medal, 2007; Sitara-e-Imtiaz, Govt. of Pakistan, 2002; Dermatology Foundation Award, 1999; HEC Best Teacher Award, 2010; COMCTECH Award in Biology, 2010.
- Fellowships/Memberships:** Member of Syndicate, Quaid-i-Azam University, Islamabad, 2010-2013; Member of American Society of Human Genetics, 2009; Member of Advanced Studies and Research Board, Quaid-i-Azam University, Islamabad, 2008-2014.
- Research Areas:** Identification of Genes Involved in Human Genetic Disorders.



Akhtar, M. Salim

FELLOW: Elected 2001

Born in Lahore, India on July 6, 1936

725, Shadman House, Shadman Colony-I, Lahore 54000

Tel: (Off) (92-42) 3596 0567; (Res): (92-42) 3757 4929

Mob: 0321- 440 4929

Fax: (92-42) 3596 0567

Email: msakhter47@yahoo.com; **URL:** www.ciit.edu.pk

- Education:** University of the Punjab, Lahore, Pakistan: MBBS, 1961; Royal College of Obstetricians and Gynecologists (England): M.R.C.O.G., 1969; Royal College of Physicians and Surgeons, Canada: FRCS, 1973; American College of Obstetricians and Gynecologists: FACOG, 1974; Royal College of Obstetricians & Gynecologists: FRCOG, 1984; The University of Lahore, Lahore, Pakistan: Ph.D. Islamic Studies, 2003; FCPS, 2010.
- Positions Held:** Patron, Shadman General Hospital, Lahore: Director General, Institute of Reproductive Medicine, 2010 to date; Chief Executive, Shadman House, House for Innovative Research Systems, 2010 to date; Editor, Pakistan Journal of History and Philosophy of Science; Editor (Medical Sciences), Proceedings of the Pakistan Academy of Sciences, 2011-2014; University of South Asia: Vice Chancellor, 2006-2011; Dean of Science and Provost, 1999-2004; Dean, Sharif Medical City, Lahore, 1998; Professor of Gynecology, King Edward Medical College, Lahore, 1986-1996; Professor and Director, Department of Gynecology, Postgraduate Medical Institute (PGMI), Punjab and Sheikh Zayed Federal Institute, 1979-1985; Chairman, Academic and Research Cell, PGMI, 1995-96; Associate Professor and Director, Perinatology, Calgary University, Alberta, Canada, 1975-1978; Assistant Professor, Memorial University, Newfoundland, Canada, 1972-1974; Visiting Research Fellow, Uppsala University, Sweden, 1974; Resident Fellow, Dalhousie University, Halifax, Canada, 1970-1972; Senior Registrar, Middlesex Med School and Hospital, 1968-69; Senior Resident, Whips Cross Hospital (London) Somerset and Dorset (England), 1965-68; Patron and CEO, Al-Inayat Secondary School Prem Nagar, Kasur; Amna's Home for God's Children, Prem Nagar, Kasur; Ayesha's Home for the Noble Mothers, Prem Nagar, Kasur.
- Awards:** H.K. Detweiler Award, Royal College, Ottawa, Canada, 1974; Mayor of Lahore Award for Outstanding Contribution in Reproductive Medicine, 1986; *Sitara-i-Imtiaz*, Government of Pakistan, 2001; Distinguished Scientist of the Year (Medical), Pakistan Academy of Sciences, 2005; Gold Medals: Pakistan Academy of Sciences, 2002; Golden Jubilee, Nishtar Medical College, Multan, 2003; Distinguished Academician of the Year, University Shield, USA, 2005.
- Fellowships/Memberships:** Member, Board of Governors, Hamdard University, Karachi; Founder Fellow, Perinatal Society of Pakistan, 1984; Fellow, Pakistan Cancer Foundation, 1980; Fellow (L), Gynecological Society of Pakistan, 1985; Fellow, American College of Obstetricians and Gynecologists, 1974; Fellow, Royal College of Obstetricians and Gynecologists, London, 1984; Fellow, Zoological Society of Pakistan, 1986; Chairman, Reproductive Health Advisory Committee, Govt. of Punjab Health Dept., 2000; Member, National Committee on Equity and Access Issues in Reproductive Health, 2002; Fellow, Association for History and Philosophy of Science, 2011; Vice President, Shadman Education Trust.
- Research Areas:** Reproductive Physiology, Gene Transcription, Curriculum Development, Neo-education Methods, Innovative Research Systems, Dangers and limitations for use of Nano-particles in Environment, History of Pre-Islamic & Islamic Era.



Akhtar, M. Waheed

FELLOW: Elected 1998

Born in Lahore, India on May 1, 1944

School of Biological Sciences, University of the Punjab, Lahore

Tel: (Off) 042-9923 0970

Mob: 0300 410 5823

Fax: 042-9923 0980

Email: director2sbs@pu.edu.pk, mwapu@brain.net.pk

- Education:** University of the Punjab, Lahore, Pakistan: B.Sc. (Hons.), 1965, M.Sc., 1966; University of Strathclyde, Glasgow, Scotland: Ph.D., 1973; Biochemical Separation School, Uppsala, Sweden:
- Positions Held:** University of the Punjab, Lahore; Professor, School of Biological Sciences, December 2013-date; Director, School of Biological Sciences, 2003-2013; Professor Emeritus, 2010 to date; Director, Institute of Biochemistry and Biotechnology, 1996 to 2004; Dean, Faculty of Sciences, 2002-2004; Director, Planning and Development, 1996-2001; Institute of Chemistry: Professor, 1984-1996; Associate Professor, 1982-1984; Assistant Professor, 1970-1982, Lecturer, 1967-1970; Cornell University, Ithaca, USA: Visiting Professor, Department of Biochemistry, Biotechnology Centre, 1989-1990; Visiting Scientist, 1987; United Nations Industrial Development Organization (UNIDO). Consultant, Trinity College, Dublin, Ireland, 1984, Visiting Faculty, 1986, 1988. Diploma in Biochemical Research Methods, 1981.
- Awards:** King Baudouin Award, International Foundation for Science, Sweden, 1993; *Tamgha-i-Imtiaz*, Government of Pakistan, 1999; Senior Fulbright Research Fellowship, 1989-90; British Council Award, 1994; HEC Best Teacher Award, 2003; Meritorious Professor, 2000-2004.
- Fellowships/ Memberships:** Honorary Fellow, Pakistan Society for Biochemistry and Molecular Biology; Member Council, Federation of Asian and Oceanian Biochemists and Molecular Biologists (FAOBMB), 1995 to date; Member Council, International Union of Biochemistry and Molecular Biology; Member FAOBMB Fellowship Award Committee, 2004-2005; Secretary General, Pakistan Society for Biochemistry and Molecular Biology, 1991 to date; Member, Editorial Board, Science, Technology and Development, PCST, Islamabad, 1997 to date; Chairman Organising Committee, 18th FAOBMB Symposium, Nov. 20-23, 2005, Lahore, Pakistan; Member, New York Academy of Sciences.
- Research Area:** Engineering enzymes and other biomolecules for improving properties; Characterization of protein markers for early diagnosis of cancer states; Developing fusion proteins for application in diagnosis and therapeutics of tuberculosis.



Ali, Muhammad

FELLOW: Elected 2021

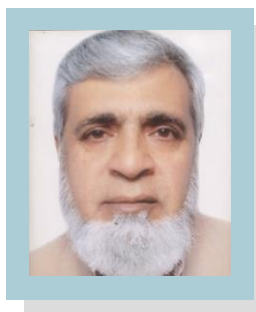
Born in Chiniot, Pakistan November 5, 1964

Vice Chancellor, Quaid-i-Azam University, Islamabad.

Mob: 03336999131

Email: alisam007@hotmail.com mohammad_03ali@yahoo.com

- Education:** University of Punjab, Lahore: MSc. (Zoology) 1987; University of Wales, UK: PhD (Molecular Biology, Fisheries) UM, Columbia, USA: Post Doctorate; (Molecular Biology, Fisheries).
- Positions Held:** Vice Chancellor QAU: (2018), Chairman Vice Chancellors Committee: (2019) Member Board of Governors of Member Selection Board: (50 Institutes, Academic bodies and Universities of Pakistan), VC in GCUF: (2014-2018), Chairman Selection Board, GCUF as Vice chancellor: (2014-2018), Director ORIC: (2013-2014) VC University of Jhang: (2016). Registrar BZU: (2011-13) Member syndicate BZU, University of Engineering and Technology, Lahore, The Government Sadiq College Women University, Bahawalpur, University of Gujrat, Gujrat, University of Azad and Jammu Kashmir, Muzaffarabad, Shaheed Zulfiqar Bhutto University, Islamabad. Member Senate: BZU, Multan. University of Bagh AJK, University of Baltistan. Director Undergraduate studies BZU, (2005-2008) Director, Institute of Molecular Biology and Biotechnology BZU, Multan (2009-2014).
- Awards:** Tamgha-e-Imtiaz (2015). Prof. Dr. Mirza Azhar Beg Gold Medal (2004) Agha Hasan Ali Abidi Gold Medal (2001), Prof. Dr A.R. Shakoori Gold Medal (2002). Best University Teacher by HEC, Pakistan (2002, 2005, 2011).
- Fellowships/ Memberships:** Fisheries Society of British Isles, Biological Society of Pakistan, Life fellow Fisheries Society of Pakistan, Life fellow Zoological Society of Pakistan, Life Fellow, Biotechnology Society of Pakistan. Fellow of Pakistan academy of Science, Pakistan.
- Research Areas:** Molecular Biology and Biotechnology, Fisheries, Biochemistry, Microbiology, Human Genetics, Ecology and toxicology.



Ali, Saqib

FELLOW: Elected 2012

Born in Mardan, KP, Pakistan, on February 6, 1954

Department of Chemistry, Quaid-i-Azam University, Islamabad

Tel: (Off) 051-9064 2130

Mob: 0301-0527 2789

Email: drsa54@yahoo.com, drsa54@hotmail.com

- Education:** University of Peshawar, KP: B.Sc., 1975; M.Sc., 1977; N. Copernicus University Torun, Poland: Ph.D., 1984; University of Bayreuth, Germany: Post-Doc., 1995-1996; 1998-1999; 2001-2002.
- Positions Held:** Department of Chemistry, Quaid-i-Azam University, Islamabad: Professor Emeritus, Professor (on contract), 2015-2017; Visiting Professor, 2014-2015; Tenure Professor, 2007-2014; Chairman, Department of Chemistry, 2009-2012; Professor, (BPS), 2001-2007; Associate Professor, 1999-2001; Assistant Professor, 1988-1999; Lecturer, 1986-1988; Department of Chemistry, University of Peshawar, KP: Lecturer, 1979-1980, 1985-1986.
- Awards:** HEC Distinguished National Professor in Chemistry, 2012; Pride of Performance, 2008; Research Productivity Award, PCST (since its inception).
- Fellowships/Memberships:** Fellow and Life Member, Chemical Society of Pakistan and Pakistan Institute of Chemists; AvH, Gorg Foster Fellow.
- Research Areas:** Chemistry.



Anwar-ul-Haq

FELLOW: Elected 1996

Born in Ujjain, India, on January 1, 1947

Professor & Deputy Vice Chancellor,
Riphah International University, I-14, Islamabad

Tel: 051-222 1940, 051-844 6000, Ext 317

Mob: 0322-575 7397

Email: anwar.haq@riphah.edu.pk

- Education:** University of Karachi, Pakistan: B.Sc. (Hon's.), 1967; M.Sc., 1968; University of Karlsruhe, Germany: Diploma Physics, 1978; Dr.rer.net, 1982.
- Positions Held:** Professor and Deputy Vice Chancellor, Riphah International University, Islamabad, 2012-date; Founding Managing Director, KRL Foundation, Rawalpindi 2007-2008; Director General, Institute of Industrial Control Systems, Rawalpindi, 2005-2008; Chairman, Pakistan Council of Scientific and Industrial Research (PCSIR), 2000-2005; Acting Director General, National Institute of Electronics 2004-2005; Dr. A.Q. Khan Research Labs, Kahuta, 1982-2008: Director General Metallurgy Division, 1998-2000, Director, Metallurgy Division, 1995-1999; Chief Scientist, 1989-1996; Principal Scientific Officer, 1983-1989; Senior Scientific Officer, 1982-1983; Research Fellow, Institute of Applied Nuclear Physics, Nuclear Research Center, Karlsruhe, Germany, 1978-1982; IAEA Fellowship, Institute of Materials Research, 1977-1978; Scientific Assistant, Institute of Microscopy and Cinematography, Karlsruhe, Germany, 1975-1977; Research Officer, Pakistan Institute of Cotton Research and Technology, PCCC, 1969-1975; Senior Research Fellow, PCSIR Labs, Karachi, 1969; Lecturer, Physics Department, University of Karachi, Karachi, 1968-1969;
- Awards:** *Sitara-e-Imtiaz*, 2001; Presidential Award Pride of Performance, 1996; *Tamgha-e-Baqa*, 2001; Coveted "Man of the Year 2003 Award" by South Asia Publications, Pakistan; INFAQ Foundation Gold Medal for Engineering Sciences by Pakistan Academy of Sciences (PAS), 1995; Gold Medal by Pakistan Vacuum Society, 2000; Dr. A.Q. Khan Gold Medal and Cash Prize for outstanding services in the field of Nuclear and Missile Technology, 2000; PAS Golden Jubilee Gold Medal, 2002; Millennium Gold Medal by South Asia Publications, 2003.
- Fellowships/Memberships:** Fellow, Royal Microscopical Society, London, 1990; Fellow, The Academy of Sciences for the Developing World (TWAS); Elected Treasurer/Secretary, PAHPS, 1998-2002; Councilor, ASIAN Crystallographic Association, IUCR, 1990-2000; Member, Pakistan Crystallographic Society, 1990; Editorial Board Member, Pakistan Journal of Scientific and Industrial Research, 1992-2000; Editorial Board Member, Science Development and Technology, Pakistan, 1992-2000; Editorial Board Member, Science Vision, COMSATS, 1995-2005; Member Organizing Committee, FASAS Symposium, 1992; Technical Committee on Engineering Sciences, Pakistan Science Foundation, 1997; Editor, Proc. ISAM 1989/1991/1993/1995/1997/1999; Co-editor, World Directory of Crystallographers, 9th Edition, 1995; FMMM and C. Engg. Institute of Materials, Minerals and Mining, UK, 2013; Professional Engineer, PEC, 2014.
- Research Areas:** Structure-Property relationship of Materials Sciences; X-ray Diffraction, TEM and SEM Techniques; Dental Materials Computer Based Rehabilitation Techniques.



Arslan, Muhammad

FELLOW: Elected 1994

Born in Multan, India, on October 24, 1936

Professor & Dean Faculty of Sciences,
Center for Research in Molecular Medicine, University of Lahore,
km, Raiwind Road, Lahore-53700

Tel: 042-3589 2845; **Mob:** 0331-474 5668

Email: arslan_m2000@yahoo.com

- Education:** University of the Punjab, Pakistan: M.Sc. (Hons), 1958; University of Wisconsin, Madison, WI, USA: Ph.D., 1969; Honorary D.Sc. Degree, University of Karachi, 2000.
- Positions Held:** Professor & Consultant, University of Health Sciences, Lahore, 2004 to date; Visiting Scientist, University of Pittsburgh School of Medicine, USA and Institute of Reproductive Medicine, University of Muenster, Germany, 2000-2004; Editor, Proceeding of the Pakistan Academy of Sciences, 1998-1999; Quaid-i-Azam University, Islamabad: Vice Chancellor, 1994-1997, Meritorious Professor, 1993-1996, Professor, 1976-1993, Chairman, Pakistan Council for Science and Technology, 1990; Associate Professor, 1973-1976; Assistant Professor, University of the Punjab, Lahore, 1970-1973; Lecturer, University of the Punjab, Lahore, 1958-1970.
- Awards:** Ford Foundation Fellow, University of Wisconsin, Madison, WI, USA, 1964-1969; Fellow, Training Program in Reproductive Physiology, Worcester Foundation for Experimental Biology, Shrewsbury, MA, USA, 1963-1964.
- Fellowships/ Memberships:** Fellow, Royal Society, UK, 1980; Member, Council of the Royal Society, 1983-1985; Founding Fellow, The Academy of Sciences for the Developing World (TWAS), 1984; Treasurer & Member, TWAS, 1992-1997; TWAS, Medal Lecturer, 1996.
- Research Areas:** Life Sciences, Endocrinology, and Reproductive Biology with special emphasis on primate gonadotropins and fertility regulation.



Asghar, Saleem

FELLOW: Elected 1998

Born in Gujrat, India, on July 2, 1947

COMSATS Institute of Information Technology, Islamabad

Tel: (92-51) 9258 481-2

Mob: 0300-512 1590

Email: s_asgharpk@yahoo.com, sasghar@comsats.edu.pk

- Education:** University of the Punjab, Lahore, Pakistan: M.Sc., 1969; Quaid-i-Azam University, Islamabad, Pakistan: M.Phil., 1970, Ph.D., 1975.
- Positions Held:** COMSATS Institute of Information Technology (CIIT): Eminent Professor, 2007 to date; Professor, CIIT, 2002 to 2007; Quaid-i-Azam University, Islamabad: Chairman, Department of Mathematics, 1994-1997; Professor, 1993-2002; Associate Professor, 1991-1993; Assistant Professor, 1976-1991; Lecturer, 1973-1976; Visiting Scholar, University of Illinois at Urbana, Champaign, USA, 1996-1997; Visiting Mathematician at ICTP, Trieste, Italy, 1986.
- Awards:** *Sitara-i-Imtiaz*, by Govt. of Pakistan, 2008; Best University Teacher Award by HEC; Member of Task force for Mathematics; *Tamgha-i-Imtiaz*, Govt. of Pakistan, 2000; First Prize for Best Research Work in Mathematics, Govt. of Pakistan, 1987 and 1994; Gold Medal, Pakistan Academy of Sciences, 1993.
- Fellowships/ Memberships:** Fulbright Fellow, University of Rhode Island, Kingston, USA, 1991; Fellow, German Academy Exchange Service (DAAD), University of Stuttgart, Germany, 1995; Member, (Associate), ICTP, Trieste, Italy, 1987-1996; Visiting Mathematician ICTP, Italy, 1986; Member, London Mathematical Society; Member, Acoustical Society of America; Member, All Pakistan Mathematical Association; Member, Punjab Mathematical Society.
- Research Areas:** Mathematics



Ashraf, Muhammad

FELLOW: Elected 2000

Born in Faisalabad, Pakistan on July 15, 1953

Rector, The University of Lahore, Lahore

Tel: (off) (92-51) 920 4522; (Res) (041) 881 1616

Mob: +92-300-667 7472,

Fax: (92-51) 920 2468

Email: ashrafbot@yahoo.com

- Education:** University of the Punjab, Pakistan: B.Sc., 1973; University of Agriculture, Faisalabad, Pakistan: M.Sc., 1980; University of Liverpool, UK: Ph.D., 1986; University of Liverpool, UK: D.Sc., 2011.
- Positions Held:** Rector, The University of Lahore, Lahore; Ex. Vice Chancellor, University of Agriculture Faisalabad; Pro-rector, The University of Lahore, Lahore; Chairman, Pakistan Science Foundation, 2015-2018; Vice Chancellor and Founding Vice Chancellor, Muhammad Nawaz Sharif University of Agriculture, Multan, 2014-2015; University of Agriculture, Faisalabad: Dean, Faculty of Science, 2006-2014; Professor and Chairman, Botany Department, 2002-2006; Associate Professor, 1999-2002; Bahauddin Zakariya University, Multan: Associate Professor, Botany Department, 1997-1999; Assistant Professor, Botany Department, 1989-1997; Post-doc., 1993-94; Lecturer, Botany Department, 1986-1989; Demonstrator, Botany Department, University of Liverpool, 1985-1986; Post-doc. 1986; University of Arizona, USA.
- Awards:** Hilal-e-Imtiaz by President of Pakistan, 2016; Honorary Professor, Lanzhou University, China, 2013; Khwarizmi-Lecture, 2012; HEC Lifetime Achievement Award, 2012; FAO Medal for Excellent Research in Plant Stress Biology, 2012; *Sitara-e-Imtiaz* by President of Pakistan, 2006; HEC Distinguished National Professor, 2005; Honorary Scientist for Rural Development Administration, Government of the Republic of Korea, 2005 to 2008; Dr. Agha G.D. Ahmad Medal, University of Agriculture, Faisalabad, 2003; Best Teacher Award, Higher Education Commission, 2002; Presidential Civil Award, Pride of Performance, 2000; Presidential Award, *Izaz-e-Fazeelat*, 1997; Gold Medal, Pakistan Academy of Sciences, 1997; First Award in Biology (Cash Prize Rs. 25,000/-), National Book Foundation, Ministry of Education, Govt. of Pakistan, 1994; Fulbright Research Award, US Educational Foundation, 1993/94; Cash Prize of Rs. 15000/- (2nd Prize) in Biology, National Book Foundation, Ministry of Education, Govt. of Pakistan, 1992; Salam Prize in Science (Biology), 1992; Gold Medal (Biology, under 40), Pakistan Academy of Sciences, 1990; Golden Star, National Farm Guide Council (Hamdard Foundation), Pakistan, 1988; Medal on 1st Position in M.Sc., University of Agriculture, Pakistan, 1980.
- Fellowships/ Memberships:** Fellow, The Academy of Sciences for the Developing World (TWAS), 2003; Member, HEC National Core Group in Life Sciences; Member, Pakistan Botanical Society; Member, Society for the Advancement of Science in Pakistan; Member, HEC National Curriculum Committee, 1998 to date.
- Research Areas:** Stress Biology.



Atta-ur-Rahman

FELLOW: Elected 1982

Born in Delhi, India on September 22, 1942

President, Network of Academy of Sciences in Countries of Organizations of Islamic Conferences, Islamabad

Tel: 021-34824 924-5; 021 9926 1713, **Fax:** 021-9926 1742; 021-34819018

Mob: 0300-854 3084; 0321-854 3084

Email: ibne_sina@hotmail.com; aurahman786@gmail.com; aurahman1942@gmail.com

Education:

University of Karachi, B.Sc. (Hons) (Chemistry), 1963, M.Sc. (Organic Chemistry), 1964; Cambridge University, UK: Ph.D. (Chemistry), 1968, Sc.D. 1987 (Cantab); Honorary D.Sc./Ph.D.: Sir Syed University of Engineering, 2003; Gomal University, 2004; University of Karachi, 2005; D.Sc., Bradford University, UK, 2010; Asian Institute of Technology, Thailand, 2010; University of Technology, Malaysia, 2011; Dr. Edn, Coventry University, UK, 2007.

Positions Held:

Chairman, Prime Minister's Task Force on Science and Technology, 2019 to date; Vice Chairman, Prime Minister's National Task Force on Knowledge Economy, 2018 to date; and Co-Chair, Prime Minister's Task Force on Information Technology, 2018 to date; Chairman of the Pakistan Advisory Board and Member of the International Advisory Board of the Children's Foundation, 2017; Honorary Professor of Hunan University of Chinese Medicine, Academician of Chinese Academy of Sciences, 2017; Chairman of UN ESCAP Committee on Science Technology & Innovation, March 2016; Consultant, Asia Education Forum, 2015-2020; (Foreign Fellow of Chinese Academy of Sciences, 2015); "Adjunct Distinguished Professor", University Petra, Jordan in recognition of meritorious scientific research, as eminent scholar in the field of Organic Chemistry, November 2015; President, Pakistan Academy of Sciences, 2003-2006, 2011-2014; Coordinator General, COMSTECH 1996/2012; HEC Distinguished National Professor, 2011; Prof. Emeritus, University of Karachi, 2011; Professor, University of Karachi, 1981-2011; Vice-President, Academy of Sciences for Developing World (TWAS), 2010 to date; Patron-in-Chief, International Centre for Chemical and Biological Sciences, University of Karachi, 2008; Chairman, Higher Education Commission (HEC) (Federal Minister), 2002-2008; Director, H.E.J. Research Institute of Chemistry, University of Karachi, 1990-2008; President, The Network of Academies of Science in Countries of the Organization of Islamic Conference (NASIC), 2004 to date; Advisor to the Prime Minister of Pakistan and Federal Minister (in-charge), Ministry of Science & Technology, Govt. of Pakistan, 2003/2004; Federal Minister of Science and Technology, Govt. of Pakistan, 1999-2002; Federal Minister (incharge) of Education, 2002; Visiting Fellow, German Academy Exchange Service (DAAD), University of Tübingen, Germany, 1979; Co-Director, H.E.J. Research Institute of Chemistry, 1977-1980; Associate Professor, 1974-1981; Assistant Professor, 1969-1974; Lecturer, 1964/1969; Visiting Fellow, German Academy Exchange Service (DAAD), University of Tübingen, Germany (1979), Consultant, Asia Education Forum (2015-2020).

Awards:

International Cooperation Award for Science and Technology (2020); 7th Achievement Award on Science and Technology by FPCCI, 2019; "Sandberg Medal for Excellence in Research", 2018; Friendship Award of China, China, 2014; International Cooperation Award, CAS, China, 2014; Einstein Professorship by the Chinese Academy of Sciences, 2013; ENGRO Excellence Award, 2011; TWAS Prize for Building Scientific Institutions, 2009; A High Civil Award "Grosse Goldene Ehrenzeischen am Bande", Austrian Government, 2007; Gold Medal of the Scientific Partnership Charitable Foundation, Inter Bio Screen Ltd., Moscow, Russia, 2004; ISESCO Chemistry Award, 2001; Economic Cooperation Organization (ECO) Prize 2000 by the President of Iran and a Cash Award of USD 7,500/-; UNESCO Science Prize (Budapest, Hungary), 1999; Govt. of Pakistan civil awards: Nishan-i-Imtiaz, 2002; Hilal-i-Imtiaz, 1997; Sitara-i-Imtiaz, 1991; Tamgha-i-Imtiaz, 1983; Award of Federation of Asian Chemical Society, Japan, 1997; Salimuzzaman Siddiqui Gold Medal, Pakistan Intellectual Forum, 1995; Babai-Urdu Award, Baba-i-Urdu Research Center, Karachi, 1994; Gold Medal, Pakistan Academy of Sciences, 1977, 1984, 1996; First Khwarizmi Prize, Govt. of Iran, 1993; Islamic Organization Prize, Kuwait Foundation for the Advancement of Sciences, 1988; Scientist of the Year Award and Prize of Rs. 0.2 million, Govt. of Pakistan, 1987; FPCCI Prize for Technology Innovation, Federation of Pakistan Chamber of Commerce and Industries, 1985; Gold Medal, Govt. of Kuwait, First World Conference on Islamic Medicine, 1980; First Prize for a book on Spectroscopy, Pakistan National Book Council.

Fellowships/ Memberships:

Senior Member "101 Friend of China", A mega strategic think tank of Pakistan, 2015; Member Global Advisory Board of "World Academy of Chemistry" 55/11, Krishna Nagar, Hojai-782435, India, 2015; Honorary Fellowship of the Institute of Chemistry Ceylon, Sri Lanka, 2014; Member of the Board of Governors of Sir Syed University of Engineering, June 2014; Member of the Resource and Advisory committee of Anjuman Urdu Tartaghi Pakistan, 2014; Member Board of Governors of Zia-uddin - University, Karachi, 2014; Chairman, International Organizing Committee Eurasia, 2014; Chairman, Standing Committee on Higher Education Science and Technology of Federation of Pakistan Chambers of Commerce and Industry, 2014; Member, Senior Advisory Council of the International Organization for Chemical Sciences in Development (IOCD), 2013; Chairman, Standing Committee on Higher Education of Federation of Pakistan Chambers of Commerce and Industry, 2013; Vice President (Central & South Asia), TWAS Council, 2009-2012; Honorary Member, Bilim Akademisi, Turkey, 2012; Member, International Advisory Board, ELLTA Conference, 2012; Distinguished Visiting Professor at University of Teknologi Mara, Malaysia, 2012; Life Time Honorary Fellow, Kings College, Cambridge University, 2007; Fellow: Royal Society (London, UK), 2006; (Don) Kings College, Cambridge University, 1969-1973; Royal Society of Chemistry, London, 1981; The World Academy of Sciences (TWAS), 1985; Islamic World Academy of Sciences, 1988; Foreign Fellow, Korean Academy of Sciences, 2004; Vice President, Pakistan Academy of Sciences, 1997-2001; Fitoterapia, 1999; Journal of Asian Natural Products Research, 1998; Member Advisory Board, Journal of Pharmacy of Istanbul University, Turkey, 1998; Spectroscopy, 1996; Scientific Advisor to CIBA Foundation, London, 1995; President, Chemical Society of Pakistan, 1992; Khimiya Prirodnynkh Soedinchii, 1992; Editorial Board Member: Journal of Islamic Sciences, Turkey, 1991; Member, National Commission for Science and Technology, 1985 to date; UNIDO Expert on Panel of Medicinal Plants, 1984; WHO Expert on Vector Biology and Control, 1983; Chairman, National Committee for South and Central Asian Medicinal and Aromatic Plants, UNESCO, 1982/1985; Member, Steering Committee for Establishment of Chemistry Center in Trieste, Italy; Member: American Chemical Society; American Society of Pharmacognosy; Swiss Chemical Society; New York Academy of Sciences; Russian Academy of Sciences; Academy of Natural Sciences; Republic of Uzbekistan; Founding Editor-in-Chief/Executive Editor/Editor of 8 European Chemistry journals, national/international journals and Editor of "Studies in Natural Product Chemistry", Elsevier, Netherlands; Member syndicate, University of Karachi (2018-2021); Chairman, Board of Advisory, PAF-IAST (2020); Member, HEC Commission (2021).

Research Areas:

Organic Chemistry and Phytochemistry with emphasis on Novel Natural Products / Clinical Applications, Modern NMR Spectroscopy.

Badshah, Amin



FELLOW Elected 2013

Born in District Karak, KP, Pakistan, on April 15, 1960.

Treasurer, Pakistan Academy of Sciences
Vice Chancellor, University of Bannu
Professor Emeritus, Department of Chemistry,
Quaid-i-Azam University, Islamabad.

Tel: (Off) 051-90642131, (Res) 051-2601051

Mob: 0300-9780374

E-mail: aminbadshah@yahoo.com; aminbadshah@qau.edu.pk

- Education:** University of Peshawar B.Sc., 1981; Gomal university, D.I. Khan, M.Sc., 1984., Quaid-I-Azam University, Islamabad, PhD., 1994.
- Positions Held:** Dean IWS 2019-2020; Chairman, Department of Chemistry, Quaid-i-Azam University, Islamabad, 2012-2015; Acting dean faculty of Natural sciences; 2016-2017; University of Bayreuth, Germany, Post Doc., 2001-2002.
- Awards:** PAS Gold Medal 2013; Civil award (Tamgha-e-Imtiaz) Govt. of Pakistan 2014; Best Teacher Award, HEC, Pakistan, 2014; HEC Best Paper Award 2016.
- Fellowships/ Memberships:** Fellow, The World Academy of Sciences; Fellow, Pakistan Academy of Sciences, 2013; Fellow, Chemical Society Pakistan, 2011, Member ACS 2017, Member Senate KUST, 2018, Member DTRC, KUST and University of Gujrat.
- Research Areas:** The inorganic aspects of our research are primarily concerned with the syntheses, spectroscopic characterization and biological activities of inorganic compounds, especially organometallic and transition metal complexes with Nitrogen, phosphorus, oxygen and sulfur donor ligands. A new research area recently initiated involves the synthesis of nanomaterials and transition metal complexes having potential application in the field of catalysis and as surfactants.

Baig, M. Aslam



FELLOW: Elected 1996

Born in Karachi, Pakistan, on January 1, 1950

Professor Emeritus, Quaid-i-Azam University, Islamabad
Distinguished National Professor, National Center for Physics,
Quaid-i-Azam University Campus, Islamabad

Tel: 051-207 7315

Mob: 0333-520 5674

Email: aslam@ncp.edu.pk; baig77@gmail.com; baig@qau.edu.pk

- Education:** University of the Punjab, Lahore, Pakistan: B.Sc., 1971; University of Karachi, Pakistan: M.Sc., 1973, M.Phil., 1977; Imperial College, London, UK: D.I.C., 1979; London University, UK: Ph.D., 1979.
- Positions Held:** Distinguished National Professor, National Center for Physics, 2012 to date; Professor Emeritus, Quaid-i-Azam University, Islamabad: Meritorious Professor, 2004–2010, Dean, Faculty of Science, 2009; Professor of Physics, 1991–2009, Associate Professor, 1987–1991; Assistant Professor, 1986–1987; Director Science, UNESCO funded 16 nation collaborative venture, SESAME, Jordan, 2004 – 2006; UNESCO Consultant on SESAME, 2003 –2004; Research Scientist, Physikalisches Institute, Bonn University, Germany, 1982–1986; SERC Research Fellow, Blackett Laboratory Imperial College, London, UK, 1981–1982; Alexander Von Humboldt Fellow, Bonn University, F.R. Germany, 1980 1981; Post-Doctoral Fellow, Blackett Laboratory, Imperial College, London UK, 1979–1979; Research Assistant, Blackett Laboratory Imperial College, London, UK, 1977–1977; Research Officer, Department of Physics, University of Karachi, 1974–1977.
- Awards:** ZA Hashmi Gold Medal, Pakistan Science Foundation, 2012. *Hilal-i-Imtiaz*, Government of Pakistan, 2009, HEC Distinguished National Professor, 2006; Sitara-i-Imtiaz, Government of Pakistan, 2004; Senior ICTP Associate Award, 2004 –2008; Project Director, Masters Trainers in Physics, HEC, 2003–2007; Best University Teacher Award, Higher Education Commission (HEC) 2003; Director, "Preparatory School on Bio-photonics", QAU, Islamabad, 2002; Lecturer, "Synchrotron Radiation Sciences" JAPS, Jordan, 2002; Lecturer, "Winter College on Spectroscopy & Applications", . March 2001, ICTP, Trieste Italy, Lecturer, "Winter College on Quantum Optics", ICTP, Italy March, 1997; Cash Prize, Incentive on Publications, Government of Pakistan, 1997. Tamgha-i-Imtiaz, Government of Pakistan, 1993, Gold Medal, Pakistan Academy of Sciences, 1987.
- Fellowships/ Memberships:** Alexander von Humboldt Fellow, Bonn University, Germany (2008); Fellow, Kaiserslautern University, (1999, 2000, 2001); Fulbright Fellow, Virginia University, USA, (1993); Fellow, Pakistan Nuclear Society; Member, Institute of Physics, UK; Member, German Physical Society, Germany. Member, Pakistan Physical Society.
- Research Areas:** Experimental Atomic, Molecular and Laser Physics, Synchrotron Radiation, Fiber Laser, Pulsed Laser Deposition. Mass Spectrometry.



Beg, Ismat

FELLOW: Elected 2008

Born in Pakistan, on January 4, 1951

Lahore School of Economics, Lahore

Home: House No. 272-A, Phase 5, Defense Housing Authority, Lahore

Office: 042-36560904, Ext. 246

Res: 0345-4651049, **Fax:** 042-36560905

Mob: 0345-422 7511

E-mail: ibeg@lahoreschool.edu.pk; begismat@yahoo.com

Education:

University of the Punjab, Lahore, Pakistan: M.Sc., 1973; University of Bucharest, Bucharest, Romania: Ph.D., 1982.

Positions Held:

HEC Distinguished National Professor, 2017-date; Lahore School of Economics, Lahore: Professor, 2013-date; Honorary Full Professor, Institute for Basic Research, Florida, 2010-date; University of Central Punjab, Lahore: Director, Centre for Applicable Mathematics and Statistics, 2011-2013; Lahore University of Management Sciences (LUMS), Lahore: Scientific Director, Centre for Advanced Studies in Mathematics, 2004-2011; Head, Department of Mathematics, 2001-2004; Professor, 2001-2011; Kuwait University, Kuwait: Professor, 1998-2001; Associate Professor, 1993-1998; Quaid-i-Azam University, Islamabad: Associate Professor, 1991-1993; Assistant Professor, 1984-1991; Lecturer, 1982-1984; Visiting Scholar, Nankai University, Tianjin, P.R. China, 1987; Senior Guest Scientist/ Senior Mathematician/ Visiting Mathematician at ICTP, Trieste, Italy, 2006, 2002, 1997, 1993, 1990.

Awards:

Gold Medal, Pakistan Academy of Sciences, 2008; First Prize, Govt. of Pakistan (Best Research Work in Mathematics), 1986; Academic Roll of Honor, Government College, Lahore, 1972; Member of Task Force for Mathematics; Member first Board of Governors, School of Mathematical Sciences, GC University, Lahore.

Fellowships/ Memberships:

Chartered Scientist, The Science Council, UK; Fellow, Institute of Mathematics and Its Applications (IMA), England; Chartered Mathematician; Member (Group Associate), ICTP, Trieste, Italy, 1991-1996; Chartered Member, Society for Mathematics of Uncertainty; Member: American Mathematical Society, European Mathematical Society, London Mathematical Society, International Federation of Nonlinear Analysts, International Rough Set Society, Research Group in Mathematical Inequalities and Applications; Life Member: Punjab Mathematical Society, All Pakistan Mathematical Association, Allahabad Mathematical Society.

Research Areas:

Multi-criteria group decision making; Artificial intelligence; Big data analysis; Nonlinear functional analysis; Fuzzy mathematics and its applications; Order structure; Best approximation.



Bhatti, Aamer Saeed

FELLOW: Elected 2020

Born in Jhelum, Punjab Pakistan, on September 10, 1964

Professor & Chairman, Quaid-i-Azam University, Islamabad

Home Address: I-10/2 Islamabad

Mob: 0321-5333026

Email: aamer@yahoo.com, asaheed@qau.edu.pk

Education:

B.Sc. University of the Punjab, Lahore (1983) (Grade B); M. Sc (Chemistry) 1986, (Grade B, GPA 3.7); M. Phil (1988), (Grade A, GPA 4.0); Ph. D (Organic Chemistry) 1994 (Grade A, GPA 4.3) (QAU). Alexander Von Humboldt, Post-Doctoral Fellowship Germany (2001 & 2020).

Positions Held:

Tenured Professor and Chairman, Department of chemistry, Quaid-i-Azam University Islamabad.

Awards:

Gold Medal PAS 2003), Dr. M. Raziuddin Siddiqi Prize in Chemistry; Gold Medal (Idara-e-Farough Taleem, Punjab Lahore) (2015); Included in World's Top 2% Scientists (2020) by Stanford University; Highly cited scientists of Pakistani Universities (Ranking list published by Elsevier on 19th October 2021) Elsevier BV - August 2021; RPA awardees from 2004-2017 in category: A by PCST; Alexander von Humboldt Post-Doctoral Fellow Germany (2001, 2019); Highest Impact Factor Award 2018, Chemical Society of Pakistan; TWAS Visiting Expert Award; Certificate of Outstanding Research University Hannover 2019; Ranked 2nd/3RD 4TH in Chemistry (RPA List, PCST; RPA award: Category A-1); Associate Editor: Frontiers in Chemistry (Impact factor 4.62): (2019, 2021).

Fellowships/ Memberships:

Alexander von Humboldt Post-Doctoral Fellow Germany (2001, 2019); Fellow of the Chemical Society of Pakistan; Fellow Pakistan Academy of Sciences (2020); Humboldt Forum & German Alumni Forum Islamabad, Pakistan; Member, Curriculum Committee, National Testing Service Pakistan.

Research Areas:

Synthetic Bioorganic and Medicinal Chemistry; Natural Products, Heterocyclic Chemistry; Stereoselective total synthesis of bioactive Natural Products; Antitumor Polyketides: Callistatin, Ratjadone; Isocoumarins, Dihydroisocoumarins and their nitrogen, sulfur analogues; Acyl thioureas: Synthesis, biological evaluation, heterocyclization, QSAR, vibrational, DFT studies; Design, Synthesis bioevaluation, binding analysis, Molecular docking, pharmacokinetics of heterocycles as enzyme inhibitors using hybrid pharmacophore approach; Carbazole, Fluorene and Perylene Based Materials for Organic Electronic Applications OLEDs; Fluorescent, Rylene and Rylene azo-hybrid, Porphyrin; Aggregate Induced Emission, In vivo Cancer probes for bio imaging, Ions sensors, AIE materials, DSSC materials.



Bhatti, Haq Nawaz

FELLOW: Elected 2014

Born in Nankana Sahib Pakistan, on September 20, 1965

Professor, Department of Chemistry
University of Agriculture, Faisalabad

Tel: 041-9201095; 041-9200161-69/3319

Mob: 0333-6528455; 0300-8387455

Email: hnbhatti2005@yahoo.com; haq_nawaz@uaf.edu.pk

Education:

University of the Punjab, Lahore: B.Sc., 1985; M.Sc., 1987; University of Agriculture, Faisalabad: Ph.D., 2004; University of Winnipeg, Manitoba, Canada: Post-Doc., 2007.

Positions Held:

Professor, Department of Chemistry, University of Agriculture, Faisalabad; Member BOG, National Centre of Excellence in Analytical Chemistry, University of Sindh, Jamshoro, Sindh; Advisor, International Foundation for Science (IFS), Sweden.

Awards:

Gold Medal in M.Sc., University of the Punjab, 1987; Muhammad Ali Gold Medal in M.Sc., University of the Punjab, 1987; Badarud-Din Gold Medal in M.Sc., University of the Punjab, 1987; Productive Scientist of Pakistan, 2006, 2007, 2008 by Pakistan Council for Science and Technology; Star Laureate 2008 in Science and Technology by South Asia Publication; President's Medal for Science and Technology, 2009; HEC University Best Teacher Award, 2010; PAS Gold Medal in Chemistry, 2011; Research Productivity Award by PCST, 2010-2011, 2012-2013, 2013-2014, 2014-2015; Two Top cited papers award for 2012 by UAF of each cash prize Rs. 50,000/-; Top Cited award for 2013 by UAF of cash prize Rs. 50,000/-.

Fellowships/ Memberships:

Life Member, Chemical Society of Pakistan; Member, American Chemical Society; Member Biochemical Society UK; Fellow The Chemical Society of Pakistan. Fellow Pakistan Academy of Sciences

Research Areas:

Production, purification, characterization, and engineering of enzymes; Bioremediation and biosorption of textile dyes and effluents and heavy metals; Development of composites and functional materials for environmental remediation



Bhutta, Zulfiqar Ahmed

FELLOW: Elected 2004

Born in Peshawar, Pakistan, on October 12, 1955

Distinguished University Professor and Founding Director,
Institute for Global Health and Development; Centre of Excellence in Women and Child Health
The Aga Khan University Hospital, Stadium Road, Karachi

Tel: + 92-2-3486 4782

Fax: + 92 -21-3493 4294, 34932095

E-mail: zulfiqar.bhutta@aku.edu, zulfiqar.bhutta@sickkids.ca

Education: MBBS, Khyber Medical College (1977); Diploma in Child Health, Royal College of Physicians and Surgeons, London, UK (1980); MRCP Paediatrics, UK (1981); FCPS (Paediatrics) (1987); PhD (Nutrition), Karolinska Institute, Stockholm (1996).

Positions Held: Distinguished University Professor and Founding Director, Institute for Global Health and Development, The Aga Khan University, Karachi; The Robert Harding Chair in Global Child Health and Policy and Co-Director, The SickKids Center for Global Child Health Hospital for Sick Children, Toronto, and Senior Scientist Research Institute & Professor (Paediatrics), University of Toronto (2013–date); Founding Director, Center of Excellence in Women and Child Health, the Aga Khan University (2013–date); The Noordin Noormahomed Sheriff Professor & Founding Chair, Division of Women & Child Health, Aga Khan University & Medical Center (2009–2013), Department of Paediatrics & Child Health (2005–2008); Professor, 1997; Director Neonatal Services of the University Hospital, Karachi, (1989–2004); The Husein Laljee Dewraj Professor of Paediatrics, 1999; Associate Professor (1994–1995); Assistant Professor (1987–1992); Senior Instructor and Consultant Pediatrician (1986–1987); Consultant Pediatrician and Neonatologist to the Bakhsh Hospitals Group, Jeddah, Saudi Arabia (1983–1986); Adjunct Professor, Family Medicine & Community Health, Tufts University School of Medicine, Boston, USA (2002) & International Health, Boston University, Boston, USA (2006); Visiting Professor, Harvard School of Public Health, Boston, USA (2011–2013); Visiting Professor, Hospital for Sick Children, University of Toronto, Canada (2011–2013); Visiting Professor, London School of Hygiene & Tropical Medicine (2011–2013).

Awards: National Talent Scholarship, Govt of Pakistan (1972–77); Pfizer Gold Medal in Pharmacology, University of Peshawar (1975); Best Graduate of the Year Gold Medal, Khyber Medical College (1977); University of Peshawar Gold Medal (1977); Fellow, Royal College of Paediatrics & Child Health, UK (1997); Fellow (Hon), American Academy of Pediatrics (2009); Fellow (Hon), Royal College of Physicians (London) (2012); Fellow, Royal College of Physicians, Edinburgh (1990); Faculty Development Award, The Aga Khan University (1991, 1995); Scholarship, Swedish Institute, Stockholm, Sweden (1994); Academic Support Scholarship, New England Epidemiology Institute, Tufts University, Boston (1995); Visiting Scientist Support Grant, Swedish Institute, Sweden (1996–98); National Book Foundation Award for Articles in International Journals (1997); Young Investigator Award, International Union of Nutrition Sciences (1997); Nestle Nutrition Research Scholarship (1990, 1999); *Tamgha-i-Imtiaz* by President of Pakistan (2000); Scholarship, Harvard School of Public Health, (2001); President of Pakistan Gold Medal for Services to Child Health (2004); Distinguished Faculty Award for Research, Aga Khan University (2005); Outstanding Paediatrician of Asia Award (2006); HEC Distinguished National Professor (2007); Hillman Memorial Lecturer, University of British Columbia, Vancouver, Canada (2007); Alpert Lecture, Boston University, Boston (2007); Member, Commission for Professional Health Education, Institute of Medicine, USA (2008); Program for Global Pediatric Research, Global Child Health Award (2008); Distinguished Visiting Scholar in Global Health, Boston University (2009); Honorary Fellowship, American Academy of Pediatrics (2009); Windermere Lecturer, Royal College of Pediatrics & Child Health Annual Meeting, University of Warwick (2010); Kenneth Warren Prize for Best Cochrane Review (2011); Global Advocacy Prize, Royal College of Paediatrics & Child Health (UK) (2012); Henderson Lecture, Department of Obstetrics & Gynaecology, University of Toronto (2013); MacDonald Lecture & Professorship, University of Western Australia, Perth, Australia (2013); Christopherson Lectureship, American Academy of Pediatrics, Orlando, USA (2013); WHO Ihsan Dogramaci Prize for Family Health (2014), AAP Samuel J Fomon Award for Lifetime contributions in Nutrition (2014); Harvey Medovy Lectureship, University of Winnipeg, Canada (2014), Professional of the Year Award, Canada Pakistan Business Council (2015). Sam Fomon Award of the American Academy of Pediatrics, 2015; Mc Kinsey Global Health Award 2015; TWAS Science Award in Medical Sciences 2017; ROUX Prize, 2021.

Fellowships/ Memberships: Member: British Paediatric Association & International Child Health Group; Paediatric Research Society (UK); Society for Pediatric Research (USA); Executive Council, Commonwealth Association for Paediatric Gastroenterology and Nutrition (CAPGAN); Central Executive Committee, Asian Conference for Diarrhoeal Diseases; Council, Asian Pan-Pacific Society for Pediatric Gastroenterology & Nutrition; International Society for Infectious Diseases; American Society for Clinical Nutrition & Society for International Nutrition Research; Federation of American Society of Experimental Biologists; Council, Commonwealth Association for Paediatric Gastroenterology & Malnutrition (1994 to date); Steering Committee, Program for Global Paediatric Research (2003); Steering Committee, International Pediatric Association (2004–7); Global Zinc Task Force (2005–2008); Board, Global Alliance for Vaccines & Immunizations (2012–2015); WHO Strategic Advisory Group for Vaccines (2010–2015); Public Health & Population Panel, Wellcome Trust, UK (2010–2014); President, CAPGAN (2003–2006); President (2006–10, 1998–2004); Convener, SAARC Neonatal Forum; Deputy Secretary General, Asia-Oceania Federation of Perinatal Societies (1998–2000); Secretary General & President, Federation of Asia Oceania Perinatal Societies (2002–2006); Treasurer, International Pediatric Association (2008–2010); President, International Pediatric Association (2013–2016); Founding Member, Board of the Partnership for Maternal, Newborn & Child Health (2004–12); Member & Chair, Hilleman Laboratories Advisory Board, Wellcome Trust, UK (2011–2015). Member, Prime Minister's Task Force for Health (2018); Chairs the Board of Governors of the National Institute of Health Pakistan, Fellow, Royal Society (UK), 2020.

Research Areas: Community-based prenatal care, interaction of nutrition and infections, micronutrient malnutrition, and maternal and child health policy issues.



Butt, M. Zakria

FELLOW: Elected 1997

Born in Lahore, Pakistan, on April 9, 1949

President, Pakistan Institute of Physics, Lahore

Tel: (Res) (+92-42) 35185502

Mob: 0323-4306032

Email: mzakriabutt@gmail.com

- Education:** University of the Punjab (Government College, Lahore): B.Sc., 1968; M.Sc., 1970; Brunel University, London: Ph.D., 1978
- Positions Held:** Registrar, Imperial College of Business Studies, Lahore, 2017-2020; Rafi M. Chaudhari Chair, Center for Advanced Studies in Physics, GC University, Lahore, 2013-2017; Director ORIC, GC University, Lahore, 2012-2015; Professor, Department of Physics, University of Engineering and Technology, Lahore, 2008-2012; Chairman, Board of Intermediate and Secondary Education, Lahore, 2003-2008; Principal, Govt. F.C. College, Lahore, 2002-2003; Principal, Govt. College of Education for Science, Lahore, 2001-2002; Professor and Chairman, Department of Physics, Government College, Lahore, 1993-2001; Director, Centre for Advanced Studies in Physics, Government College, Lahore, 1985-1997, 1998-2000; Vice Principal, Govt. Islamia College, Lahore, 1985; Principal, Govt. College Pind Dadan Khan, 1984-1985; Assistant Professor, Government College, Lahore, 1983-1984; Lecturer: Government College, Lahore, 1974-1983; Government College, Sahiwal, 1972-1974; Govt. College, Bahawalpur, 1971-1972.
- Awards:** Gold Medal, Board of Intermediate and Secondary Education, Lahore, 2004; *Tamgha-i-Imtiaz* by the President of Pakistan, 1997; Gold Medal (Physics), Pakistan Academy of Sciences, 1997; PIP Fellowship Gold Medal, 1997; COT Scholar Award, 1975-1978; Physicist of the Year (Cash Award and Commendation Certificate), National Book Foundation, Islamabad, 1990; *Madre-e-Millat* Award, 2003; Quaid-e-Azam Gold Medal, 2005, and *Sitara-e-Pakistan* Gold Medal, 2007, conferred by *Tehreek Istehqam-e-Pakistan* Council; PCST Research Productivity Award, 2002, 2008, 2010-2012; Certificate of Honourable Mention, 1968, and Academic Roll of Honour, Government College, Lahore, 1969, 1970-71.
- Fellowships/ Memberships:** Fellowship Award by Netherlands Government, 1974; COT Scholar at Brunel University, UK, 1975-1978; Associate Member, International Centre for Theoretical Physics, Italy, 1984-1990; Vice President, Pakistan Physical Society, 1997; President, Pakistan Physical Society, 1998; Vice President, Pakistan Institute of Physics, 1994-1997; President, Pakistan Institute of Physics, 2004-Date
- Research Areas:** Physics with emphasis on Lattice Defects and Mechanical Properties of Crystals, Laser-Materials Interaction, Ions Implantation, Thin Films, and Micro-Macro Property Correlation.



Butt, N. M.

FELLOW: Elected 1988

Born in Sialkot, India, on June 3, 1936

Scientist Emeritus, PAEC

Chairman, Preston Institute of Nano-Sciences & Technology (PINSAT),

Preston University, 85, St. 7, H-8/4, Islamabad

Tel: (Off) 051-849 1300/Ext 716 & Ext. 718 (PS)

Mob: 0300-500 0513

Fax: (92-51) 486 3101, 443 0648

Email: nmbutt36@gmail.com; nmbutt@preston.edu.pk

- Education:** University of the Punjab (Murray College, Sialkot): BSc, 1955; University of the Punjab (Government College, Lahore): MSc, 1957; University of Birmingham, Birmingham, UK: PhD (Physics), 1965; DSc, 1993.
- Positions Held:** Preston Professor and Chairman, Preston Institute of Nano Science and Technology (PINSAT), Preston University, Islamabad (2009 to date); Chairman, Pakistan Science Foundation (PSF), 2005-2008; Chairman, National Commission on Nano-Science and Technology (NCNST), MoST, 2003-2008; Scientist Emeritus, Pakistan Atomic Energy Commission (PAEC), 1996 (Life Title); Chief Scientist/Director General, PINSTECH, 1995-1996; Director, PINSTECH, 1991-1995; Associate Director, PINSTECH, 1984-1991; Head, Nuclear Physics Division, PINSTECH, 1978-1991; Scientific Officer/ Principal Scientific Officer/Chief Scientific Officer, PAEC, 1961-1978; Lecturer, Government College, Lahore, 1958-1961.
- Awards:** Dux Gold Medal, Murray College, 1955; Youngson Gold Medal, Murray College, 1955; Academic Roll of Honor, Government College, Lahore, 1957; Commonwealth Scholarship, UK, 1961-1964; Associate ICTP Award, Italy, 1970-1975; Alexander von Humboldt Foundation (Germany) Senior Fellowship, 1976-1977; Senior Associate ICTP Award, Italy, 1979-1989; Open Gold Medal, Pakistan Academy of Sciences, 1990; *Sitara-i-Imtiaz*, Government of Pakistan, 1992; 8th International Khwarizmi Prize, 1995; Representative of Pakistan in Meetings of Nobel Laureates in Lindau (Germany), 2003 to date.
- Fellowships/ Memberships:** Fellow: World Innovation Foundation, 2006; Islamic World Academy of Sciences, 1993; Fellow/Life Member, Pakistan Nuclear Society (President), 1995-1997; Life Member, Pakistan Physical Society (Ex-President), 2000 and 2011; Fellow, Pakistan Institute of Physics; Formerly Associate Member, Institute of Physics of London and Member American Physical Society, New York; Founding President, Abdus Salam ICTP-Chapter in Pakistan, 2000.
- Research Areas:** Nuclear/Solid State Physics (Experimental); Neutron-Scattering and Diffraction from Solids; Mossbauer Gamma-Ray Spectroscopy (Transmission and Scattering); Research Reactor Utilization; Lattice Dynamics of Materials; Crystal Structure Properties of Materials; Micro-Macro Property Correlation of Materials; Mossbauer Spectroscopy and Neutron Diffraction of Nano-Materials; Nanotechnology; Nano Education.



Chaudhry, M. Nawaz

FELLOW: Elected 2005

Born in Lahore, on July 29, 1942

Professor and Head
Department of Environmental Science and Policy
Lahore School of Economics

Tel: 042-36560954

Mob: 0345-400 5008

Email: muhammadnawazchaudhry@yahoo.com

Education: University of the Punjab, Lahore, Pakistan: B.Sc., 1962, B.Sc. (Hons), 1963, M.Sc., 1964; London University, UK: Ph.D., 1967.

Positions Held: Professor and Head, Department of Environmental Science and Policy, Lahore School of Economics, Dec 2017-to date; University of the Punjab: Professor Emeritus in Geology, University of the Punjab, since 2007; Professor, 1988 to Dec 2017: HEC Professor, 2003-2005; Professor, Postgraduate Center for Earth Sciences, 2002-2003; Director, Postgraduate Center for Earth Sciences, 2001-2002; Director, Center for Integrated Mountain Research, 1999-2000; Director, Institute of Geology, 1997-2001; Associate Professor, 1980-1988; Assistant Professor, 1976-1980; Lecturer 1968-1980; Chief Geologist Engineers Combine Ltd., March 1978-May 1980 (on leave from Punjab University); Consultant, Pakistan Museum of Natural History (MoST), 2002; Guest Scientist, ETH, Zurich, 1996; Demonstrator' Kings College, London, 1965-1967.

Awards: Gold Medal, Pakistan Academy of Sciences, 2001; Gold Medal, Pakistan Academy of Geological Sciences, 1997; Gold Medal, Punjab Geological Society, 1992; Gold Medal, University of the Punjab, 1964; Merit Scholarship, 1960-1964; Roll of Honors, Government College Lahore, 1963 and 1964.

Fellowships/ Memberships: Fellow, Pakistan Academy of Sciences; Life Member, National Geological Society of Pakistan, Punjab geological Society and Pakistan Institute of Physics.

Research Areas: Earth and Environmental Sciences and expertise in Geological Materials.



Choudhary, M. Iqbal

FELLOW: Elected: 2003

Born in Karachi, Pakistan, on September 11, 1959

Coordinator General, COMSTECH

Director, International Center for Chemical and Biological Sciences

H.E.J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular

Medicine and Drug Research, University of Karachi, Karachi

Tel: (92-21) 3482 4924-25

Mob: 0321- 822 8710

Email: iqbal.choudhary@iccs.edu, hej@cyber.net.pk

Education:

University of Karachi, Pakistan: B.Sc., 1980, M.Sc., 1983; Ph.D., 1987; Al-Farabi Kazakh National University, Kazakhstan; D.Sc., 2005; D.Sc., 2019.

Positions Held:

Coordinator General, COMSTECH, 2020-to date; Director, International Center for Chemical and Biological Sciences (ICCBS), 2009-to date; Co-Director (Dr. Panjwani Center for Molecular Medicine and Drug Research), 2002- to date; Visiting Professor, Institut Teknologi Sepuluh nopember, Surabaya, Indonesia; Adjunct Professor, Faculty of Science and Technology, Universitas Airlangga, Surabaya, Indonesia, 2019; Adjunct Professor, National Institute of Fundamental Studies, Sri Lanka, 2019; Visiting Professor, T.C.M Hospital Southwest Medical University, Luzhou, Sichuan, China, 2018; Advisor, Interim Board of Study in Medicinal Biochemistry and Biotechnology, University of Colombo, Sri Lanka, 2018; Visiting Research Fellow, State Key Laboratory, Elemento- Organic Chemistry, Nankai University, China, 2018; Visiting Professor, Hunan University of Chinese Medicine, China, 2017; Visiting Professor, Guangxi Normal University and State Key Laboratory for Chemistry and Molecular Engineering of Medicine Resources, China, 2017; Distinguish Professor, Institute of Food Science and Technology, Chinese Academy of Agriculture Sciences(CAAS), 2017; Distinguish International Supervisor, Institute of Food Science and Technology, Chinese Academy of Agriculture Sciences (CAAS), 2017; Adjunct Distinguished Professor, University of Peter, Jordan, 2015; Distinguish Professor, COMSATS, 2013; Distinguished National Professor, University of Karachi, 2013; Director ICCBS (Acting), 2002–2008; Professor, HEJRIC, 2000 to date; Distinguished National Professor, Higher Education Commission, 2004; Associate Professor, HEJRIC, 1994-2000; ; Visiting Faculty, Cornell University, USA 1994; Assistant Professor, HEJRIC, 1988-1994; Senior Fulbright Fellow, University of California, USA, 1988; Visiting Scientist, Purdue University, USA. 1989; Post Doctor Research Associate, Cornell University, USA 1987-1988; Senior Research Fellow, HEJRIC, 1986-1987; Research Associate, HEJRIC, 1985-1986. Visiting Professor: National Pharmaceutical Chemistry of Human University of Chinese Medicine, China; School of Healthcare Sciences at Manchester Metropolitan University, UK; University Malaysia Pahang, Malaysia; University of Rhode Island (URI), USA; King Abdulaziz University (KAU), Jeddah, Saudi Arabia; King Saud University (KSU), Riyadh, Saudi Arabia; University Teknologi MARA (UiTM), Malaysia; University Kebangsaan Malaysia (UKM), Malaysia; Al-Farabi Kazakh National University, Kazakhstan.

Awards:

Mustafa (PBUH) Prize and Award (Laureate), 2021; Golden Skillball Friendship Award 2020; Distinguished National Award, 2020; Dr. A. Q. Khan Gold Medal Award, 2018; Nazriya Pakistan Council, Islamabad, 2018; COMESTECH Award 957 OIC Member Countries) by Prime Minister of Pakistan, 2018; Declared as Topmost Scientist (Number 1) among 1650 Pakistani Scientists in all Disciplines of Science and Technology by Pakistan Council for Science and Technology (Ministry of Science and Technology), Pakistan, 2012; Hilal-i-Imtiaz, 2007; Sitara-i-Imtiaz, 2001; Tamgha-i-Imtiaz, 1998, First Khwarizmi International Award by the President of Iran, 2006; Economic Cooperation Organization (ECO) Award by the President of Azerbaijan, 2006; Distinguished Senior Fulbright Research Award, USA, 1997-1998; National Bank Foundation's Prize for Chemistry Publications, 1996; Third World Academy of Sciences Young Scientist Award, 1994; Prof. M. Raziuddin Siddiqi Gold Medal by Pakistan Academy of Sciences, 1993; Prof. Abdus Salam (Nobel Laureate) Prize in Chemistry, 1990.

Fellowships/ Memberships:

UNESCO Chairholder on Medical and Bio-Organic Nahrul Product Chemistry, 2020; Member, Prime Minister Task Force on COVID-19, 2020; Member, Board of Trustees, Pakistan Science Foundation, Islamabad, 2020; Member, National Commission for Science and Technology (Chaired by the Prime Minister of Pakistan); Fellow, The World Academy of Sciences (2002); Fellow, Islamic World Academy of Sciences (2003); Fellow, LEAD-International (1998); Fellow, The Royal Society of Chemistry (2004); Fellow, Chemical Society of Pakistan (2001); Fellow, International Union of Pure and Applied Chemistry; Fellow, World Innovation Foundation (2006); Member, National Commission for Science and Technology; Vice President, Phytochemical Society of Asia; Member, Executive Board of Pakistan Atomic Energy Commission; Member, National Commission on Nanotechnology; Member, Board of Trustees of Pakistan Science Foundation; Member, National Commission on Biotechnology; Member, Board of Governors of Virtual University, Pakistan, 2008; Member, Board of Governors of Institute of Business and Emerging Sciences, Karachi; Member, American Chemical Society; Member, American Society of Pharmacognosy; Member, The New York Academy of Sciences; Member, Federation of Asian Chemical Societies; Member, Executive Board of the Asian Network of Research on Anti-Diabetic Plants; Member, Steering Committee on Higher Education Pakistan (2002-2003); Member, Executive Council of AFASSA Network; Member, Swiss Chemical Society; Member, Inter Academy Study Panel (IAP), Amsterdam, The Netherlands; Member, Committee for Central Research Fund, Ministry of Health; Member, PTCL Research Board (2001-2004); Member, Syndicate of Federal Urdu University for Arts, Science and Technology; Member, Sectoral Committee on University-Industry Steering Committee (Pharmaceutical), HEC; Member, Selection Board of Pakistan Standards & Quality Control Authority; Member, Board of Studies of COMSATS University; Member, Board of Studies of Lasbella University, Uthal; Member, American Physiological Society, USA.

Research Areas:

Bioorganic Chemistry, Natural Products Chemistry.



Fayyazuddin

FELLOW: Elected 1977

Born in Ludhiana, India, on November 10, 1930

HEC Distinguished National Professor of Physics,
National Centre for Physics, Quaid-i-Azam University campus, Islamabad

Tel: (Off) +92-51-207 7353; (Res) (92-51)-265 2822

Mob: 0334-553 4185; **Fax:** (92-51)-9205753

Email: fayyazuddins@gmail.com

Education:

University of Punjab, Lahore, Pakistan: B.A. (Hon.), 1951, M.Sc., 1952; Imperial College, London, UK: DIC and Ph.D., 1962.

Positions Held:

HEC Distinguished National Professor of Physics, Quaid-i-Azam University, Islamabad, 2005 to date; Professor of Physics, King Abdul Aziz University, Makkah, Saudi Arabia, 1988-1996; Professor of Physics, Ummal Qura University, Makkah, Saudi Arabia, 1985-1988; Professor of Physics, King Saud University, Riyadh, Saudi Arabia, 1980-1985; Professor of Physics, Quaid-i-Azam University, Islamabad, 1968-1980; Dean, Faculty of Natural Sciences, Quaid-i-Azam University, Islamabad, 1975-1977; Visiting Scientist, CERN, Geneva, Switzerland, 1973-1974; Research Associate, Rutherford Lab, UK, 1972-1973; Research Associate, Enrico Fermi Institute, University of Chicago, USA, 1966-1968; Senior Scientific Officer, Pakistan Atomic Energy Commission, 1962-1966; Lecturer, University of the Punjab, Lahore, 1956-1959.

Awards:

Hilal-i-Imtiaz, Govt. of Pakistan, 2000; Gold Medal (Jointly with Riazuddin), Pakistan Academy of Sciences, 1979; D. Dwyer Bhawani Dass Gold Medal, Govt. College, Lahore, 1951; Al-Khawarizmi International Award in Physics, 2003.

Fellowships/

Fellow, The Academy of Sciences for the Developing World (TWAS); Member, National Center for Physics, Quaid-i-Azam

Memberships:

University, Islamabad, 1999 to date; Associate Member, International Center for Theoretical Physics, Trieste, Italy 1966-1969, 1972-1980, 1983-1993; Member, American Physical Society, 1977; Life Member, Pakistan Physical Society, 1999; Member, Syndicate, Quaid-i-Azam University, 1975-1977.

Research Areas:

Theoretical Particle Physics with emphasis on Gauge Theories, Chiral Symmetry, Heavy Quark Spin Symmetry and Phenomenology of Particle Interactions.



Gilani, Anwar-ul-Hassan

FELLOW: Elected 2002

Born in Faisalabad, Pakistan, on April 4, 1955

Vice Chancellor
The University of Haripur
Hattar Road, Haripur, KP

Tel: Off: (0995) 920600

Mob: 0300-296 8904; **Fax:** (0995) 620601

Email: ahgilani@uoh.edu.pk

Education:

University of Agriculture, Faisalabad: B.Sc. (Hons.) 1976, M.Sc. (Hon.), 1978; University of Sydney, Australia: PhD, 1985.

Positions Held:

Vice Chancellor, University of Haripur, 2019 to date; Chairman, Pakistan Council for Science & Technology, 2015-2018; Tandem Dean, Health Sciences, College of Health Sciences, Mekelle University, Ethiopia, 2013-2014; Distinguished National Professor, Higher Education Commission, 2004 to date; Pakistan Academy of Medical Sciences: Secretary General, 1999-2002, Scientific Secretary, 2002-2009; International Foundation for Science, Sweden: Scientific Advisor, 2000 to date; World Health Organization, Geneva: Advisor on Essential Medicine, 2006-2010; The Aga Khan University, Karachi: Chairman, Board of Graduate Studies, 2008-2009; Vice Chair, Research and Graduate Studies, 2008-2013; Director, PhD Program in Health Sciences, 2008-2013; Professor of Pharmacology, 1997 to date; Associate Professor, 1992-97; Assistant Professor, 1988-92; Senior Instructor, 1986-88; Lecturer, Bahauddin Zakariya University, Multan, 1979-86.

Awards:

Merit scholarship, from primary school to PhD; Boehringer International Research Award-1988 (Germany); National Book Foundation Research Awards, Ministry of Education, 1991 and 1994; Salam Prize in Biology, TWAS, The World Academy of Sciences, 1992; Ibn-Al-Haytham Prize in Biological Sciences, 1995; Outstanding Teacher Award by the Aga Khan University, 1996; Aga Hassan Abedi Gold Medal in Medical Sciences by Pakistan Academy of Sciences, 1999; Presidents Award for Pride of Performance, 2000; Dr. Israr-ul-Haq Award, Alumni Association of the University of Agriculture, Faisalabad; Sitara-i-Imtiaz by President of Pakistan, 2004; Professorship, Pakistan Academy of Medical Sciences, 2004; Life-Time Academic Achievement Award by the Higher Education Commission, Government of Pakistan, 2011; Dr Z.A. Hashmi R&D Gold Medal, Pakistan Science Foundation, 2014; Hilal-i-Imtiaz by the President of Pakistan, Government of Pakistan.

Fellowships/

Fellow, TWAS-The World Academy of the Sciences; Fellow, Pakistan Academy of Medical Sciences; Fellow, IbnSina Academy of Medieval Medicine and Sciences; Fellow, TWAS, The World Academy of Sciences; Board Member, International Society of Ethnopharmacology; Member, Drug Registration Board, Ministry of Health, 1999-2002; WHO Advisor on Traditional Medicine and Essential Medicine; Member, British Pharmacological Society, Biochemical Society (London); World Innovation Foundation; International Society for Medicinal Plant Research (Germany), International Society of Pharmaco-economics and Outcome Research (Founding President, Pakistan Chapter), Pakistan Hypertension League, Pakistan Nutrition and Dietetic Society.

Research Areas:

STI Policy, Natural Products Pharmacology with special interest on Medicinal Value of Food and Dietary Supplements (antihypertensive, antidiabetic, hepatoprotective, antiinflammatory, antiurolithic, antiasthmatic, cardiotonic, laxative, antiarrhythmic, prokinetic, antioxidant and anti-Alzheimer's disease) and Lead Detoxifying Potential of Vitamin C. Translational Research in metabolic and cardiovascular studies.



Haleem, Darakhshan J

FELLOW: Elected 2013

Born in Pakistan, on February 22, 1952

Meritorious Professor Neuroscience

Dr. Panjwani Center for Molecular Medicine and Drug Research

International Center for Chemical and Biological Sciences University of Karachi, Karachi

Tel: 021-482 4924, 25

Email: djhaleem@uok.edu.pk

Education:

MSc and MPhil (Biochemistry), University of Karachi; PhD. (Neurochemistry) London University.

Positions Held:

Meritorious Professor Neuroscience, Dr. Panjwani Center for Molecular Medicine and Drug Research, International Center for Chemical and Biological Sciences, University of Karachi, Karachi, 2012 to date; Dean, Faculty of Science, University of Karachi, 2010-2012 & 2008; Chairperson, Department of Biochemistry, University of Karachi, 2005-2008; Coordinator, Natural Science, University of Karachi, 2001-2012; Founding Chairperson, Department of Biochemistry, Federal Urdu University of Arts, Science & Technology, 1978-1980; Assistant Professor, Department of Biochemistry, University of Karachi, 1980-1993; Professor, Department of Biochemistry, University of Karachi, 1993-2012.

Awards:

Top 2% scientists worldwide by Stanford University 2020,2021; RPA by PCST, 2001- 2012; Life Time Achievement Award by Star Women Foundation, 2007; Ezaz-e-Fazeelat Presidential Award of Pakistan, 1999; Nishan-e-Azmat Danish by University of Karachi, 1997; Star Woman by Star Women Foundation, 1997; Open Gold Medal by PAS, 1996; DSc, International University for Complementary Medicine, Sri Lanka, 1996; Nishane-Zafar by University of Karachi, 1996; Young Scientist Award, ISTRY, Japan, 1991; COT Scholarship by Govt of Pakistan, 1986-1988; ORS Award, London, 1986-1988.

Fellowships/ Memberships:

Life Member, Pakistan Society of Biochemistry and Molecular Biology; Life Member, Pakistan Pharmaceutical Society; Life Member, International Brain Research Organization; Member Editorial Board of many international journals of Neurosciences; Member, Board of Faculty, Sir Syed University of Engineering and Technology, Karachi; Member Board Advanced Studies and Research (BASR), SUHAIL University.

Research Areas:

Neurochemistry and Neuropharmacology of Drug Addiction, Stress, Anxiety, Depression, Schizophrenia, Obesity Anorexia Nervosa and Pain.



Haq, Ikramul

FELLOW: Elected 2006

Born in Lahore, Pakistan, on March 5, 1952

Professor Emeritus/Director, Office of Research Innovation and Commercialization (ORIC), GC University, Lahore

Tel: +92 (42) 9921 4601, +92 (42) 9921 1634

Mob: +92 333-457 0401

Email: ikmhaq@yahoo.com

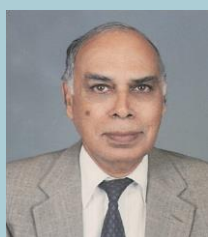
Education: B.Sc., 1973 & M.Sc., 1975, Government College, Lahore; Ph.D., 1992, University of the Punjab, Lahore.

Positions Held: Government College University, Lahore: Acting Vice Chancellor, 2011, 2012; Dean, Faculty of Science and Technology, 2010–2012; Professor Emeritus, 2015 to date; Director, ORIC, 2015 to date; Director, Institute of Industrial Biotechnology, 2005–2013; Professor, 2000–2014; Post Doc, Cornell University, NY, USA (2006); Associate Professor, 1998–2000; Assistant Professor, 1993–1998; Lecturer, 1983–1993; F.C. College, Lahore: Lecturer, 1981–1983; Govt. Islamia College, Kasur: Lecturer, 1981; Govt. T.I. College, Chenabnagar: Lecturer, 1979–1981.

Awards: HEC Best Teacher Award, 2002; Productive Scientist of Pakistan by PCST, (2002–2004, 2006, 2008–2012); *Sitara-i-Imtiaz*, Govt. of Pakistan, 2004; Fulbright scholarship, Cornell University, New York, USA, 2005; 2nd Asia's B-School Award for outstanding contribution to education by CMO Asia, Singapore (2011); Education Leadership Award (2013) by World Marketing Summit, Malaysia; Dr. Z. A. Hashmi R&D Gold Medal by PSF for Productive Principal Investigator for the last one decade.

Fellowships/Memberships: Member, College Implementation Committee for New System (1997–1999); Chairman, Award Committee (1997–1998); Chairman, Societies Board, GC University, Lahore (2001–2007); Pakistan Botanical Society: Joint Secretary (1990–1992); General Secretary (1998–2000); Vice President (2000–2002); President (2008–2011); General Secretary, Biological Society of Pakistan (2000 to date); Executive Member, Phytopathological Society of Pakistan (1992 to date); Vice-Chairperson, International Organization for Biotechnology and Bioengineering (2007–2008); Life-Member, Pakistan Botanical Society; Member, International Association of Science and Technology for Development (IASTED) (2003–2006); Member, Academic Council, GCU, Lahore; Member, Technical Committee of Biological Science, Pakistan Science Foundation; Member, American Chemical Society; Biological Society of Pakistan; Member, Biotechnology Society of Pakistan; Member, Board of Studies (Botany), Quaid-i-Azam University, Islamabad; GC University, Lahore: Member, Core Group on Life Sciences; Convener, Board of Studies in Board of Intermediate and Secondary Education, Lahore; President, Pakistan Chapter of Federation of Asian Biotech Associations; Member, Board of Trustees & Selection Board, Pakistan Science Foundation; Member, Selection Committee, Nawaz Sharif Agriculture University, Multan; Member, Selection Board and Syndicate, GC University, Faisalabad; Member, Board of Studies and Academic Council, Biotechnology and Microbiology, BZ University, Multan; Member, Selection Board and Syndicate, UVAS, Lahore; Member, Board of Studies in Biotechnology, LCW University, Lahore.

Research Areas: Industrial Biotechnology and Microbiology.



Hashmi, Manzur-ul-Haque

FELLOW: Elected 1973

Born in Gujranwala, India, on August 22, 1928

Consultant, United Nations, 5-Linkers Colony,
St John Park, 1 Abid Majid Road, Lahore

Tel: (92-42) 3666 2943, 3667 6382

Email: drmanzur_unep@yahoo.com

Education: University of the Punjab: B.Sc., 1950, M.Sc. 1952; London University, UK: Ph.D., 1955; Imperial College, London, UK: D.I.C., 1955; London University, UK: D.Sc., 1975.

Positions Held: Advisor/Consultant, International Organizations, 1987 to date; Senior Officer, UN Environment Program, Nairobi, Kenya, 1975–1987; Scientist, Pakistan Council of Scientific and Industrial Research (PCSIR) Labs, Lahore, 1956–1974; Director, PCSIR Labs, Lahore, 1971–1972; Visiting Professor, City University, London, UK, 1974–1975.

Awards: Fulbright Postdoctoral Fellowship, MIT Cambridge, Mass, USA, 1960–1961; Nuffield Research Fellowship, City University, London, UK, 1969–1970. Alexander von Humboldt Senior Fellowship at Saarbrücken University, West Germany, 1974–75.

Fellowships/Memberships: Fellow, The World Academy of Sciences and Arts, Minneapolis, USA, 1997; Honorary Senior Visiting Fellow, City University, London, UK, 1985.

Research Areas: Analytical Chemistry; current emphasis on Emerging Environmental Issues.



Hasan, Rumina

FELLOW: Elected 2011

Born in Pakistan, on February 15, 1955

Professor, Department of Pathology and Microbiology, Aga Khan University, Karachi

Tel: (021) 3486 1640

Fax: (021) 3493 4294

Email: rumina.hasan@aku.edu

Education:

M.B.B.S., University College Hospital, University of London 1980; M.Sc., London School of Hygiene and Tropical Medicine and The Royal Post-Graduate Medical School, University of London, 1983; Ph.D., London School of Hygiene and Tropical Medicine, University of London, 1990; MRC (Path), 1993; FRC (Path), 2000.

Positions Held:

Senior Instructor, Dept Microbiology, Aga Khan University (AKU), Karachi, 1985 –1991; Assistant Professor, Dept Microbiology, AKU, 1991-1997; Associate Professor and Section Head, Clinical Microbiology, AKU, 1997- 2004; Acting Chairperson, Dept Pathology and Microbiology, AKU, 2003-2004; Professor and Chairperson, Dept Pathology and Microbiology, AKU, 2004-2010; Professor, Dept Pathology and Microbiology, AKU, 2010 to date.

Awards:

Honorary Professor, Dept of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, UK, 2005-todate; Endowed Chair; Sultanali Kamruddin Jessani; Chair Dept of Pathology & Microbiology, AKU, 2008-2011; Adjunct Professor, University of Health Sciences, Lahore, 2008 to date; The Abdulaziz Hussainali Shariff Professor, Dept of Pathology & Microbiology, AKU, 2011. Aga Khan University Excellence in Research Award. November 2019.

Fellowships/ Memberships:

Member; Royal College of Pathologists, UK 1993-2000. Fellow; Royal College of Pathologists UK 1993-2000. Member; International Union Against Tuberculosis and Lung Diseases. Member; American Society of Microbiology. Member; Scientific Board, Asian African Society of Mycobacteriology. Member; Infectious Diseases Society of Pakistan. Member; Pakistan Biological Safety Association. Associate Editor; BMC Microbiology. Editorial Board Member, The International Journal of Mycobacteriology. Member Editorial Committee; Journal of Pakistan Medical Association; Member Core Group; Global Laboratory Initiative, WHO Global TB Programme (2010-2014). Vice Chair Global Laboratory Initiative, Stop-TB Partnership/WHO Global TB Programme (2012-2014). Member New Diagnostic Working group (NDWG); a working group of the Stop-TB Partnership (2011-2015). Member WHO Eastern Mediterranean Regional Green Light Committee (RGLC) to provide technical support to the STOP-TB unit in the region for implementation of the strategic plan for the prevention and control of M/XDR tuberculosis in the region (2012-2019). Chairperson RGLC (2019-to date). Member Global AMR Surveillance System (GLASS) Collaborative Platform, WHO (2016-2020). Member Steering Committee CORDS Antimicrobial Resistance (AMR) Project for the Fleming Fund Regional Grant “AMR Surveillance within a One Health Approach” (2019-2021). Member Strategic Technical Advisory Group on Antimicrobial Resistance (STAG-AMR) WHO (2017-2020). Member WHO Guideline Development Group on policy on Molecular assays intended as initial tests for diagnosis of pulmonary and extrapulmonary TB in adults and children, (2019-2020). Member WHO Technical Expert Group for advice on Critical Concentrations for drug susceptibility testing of Isoniazid and Rifamycins (Rifampicin, Rifabutin and Rifapentine) (2020-todate). Member WHO Technical Expert Group for advice on Optimizing the design of a microbroth dilution plate for Mycobacterium tuberculosis complex (2020 to date). Member WHO Guideline Development Group on “Nucleic acid amplification tests to detect TB and DR-TB (2020).Member WHO Expert Consultation on the definition of extensively drug resistant tuberculosis (2020). Member WHO Guideline Development Group “Novel skin-based in vivo tests for TB infection” (2021 to date). Member National Strategic and Technical Advisory Group (STAG) TB Control Program Pakistan (2015 to-date).Member Pakistan Medical Commission (2019 to-date).

Research Areas:

Antimicrobial Resistance; Tuberculosis.



Hassan, Mashooda (Mrs)

FELLOW: Elected 2001

Born in Lucknow, India, on July 17, 1939

Apartment No. 03, Block No. 22,
PHA Apartments, G-7/1, Islamabad

Tel: (92-51) 289 0432

Mob: 0300-918 6932

Email: mashoodahasan_3239@yahoo.com

- Education:** Lucknow University, Lucknow, India: M.Sc., 1959; Johann Wolfgang University, Frankfurt/Main, Germany: Diploma Chem., 1966; Ph.D. (Dr.phil.nat.), 1968.
- Positions Held:** HEC Professor, Department of Chemistry, Allama Iqbal Open University, Islamabad, 2006-2008; Member, Federal Public Service Commission: 1999-2005; Adjunct Professor, HEJ Research Institute, University of Karachi, 1998-1999; Quaid-i-Azam University, Islamabad: Distinguished Professor 1998-1999; Acting Dean, Faculty of Natural Sciences, 1999; Meritorious Professor, 1993-1998; Chairperson, Department of Chemistry, 1975-1977, 1990-1993; Professor, 1977; Associate Professor, 1968; Pakistan Council of Scientific and Industrial Research (PCSIR), Karachi: Senior Research Officer, 1968; Research Officer, 1966-1968; Research Chemist, 1962-1965; Central Govt. College for Women, Karachi: Lecturer, 1960.
- Awards:** Pakistan Academy of Sciences Silver Jubilee Gold Medal, 1978; South Asia Publications (SAARC) Star Women of the Year Award, 1994; UNESCO "Scientist Role Model" for Girl Students of South Asia, 1988; *Izaz-i-Kamal*, 1995; *Tamgha-i-Imtiaz*, 1999.
- Fellowships/ Memberships:** DAAD Scholarship (Germany), 1965-68 (Ph.D. scholar); Alexander von Humboldt Foundation, (Germany), (Post Doc), Junior & Senior Fellowships, 1972-1973; Post-Doc Fellowship, United Kingdom Royal Society and Nuffield Foundation Bursary, UK, 1981-1982; United States Fulbright, Visiting Professor Fellowship, 1990-1991; Fellow and Life Member, Chemical Society of Pakistan; Member, GDCh, 1968-1974; Member, Nobel Technical Committee, Sweden, 1983 and 1990; American Chemical Society, 1990-1999; UN Anti-Narcotic Task Force, 1992; Fellow, The World Academy of Sciences (TWAS), 1999; World Academy of Art and Science, USA, 2004; World Innovation Foundation, 2006.
- Research Areas:** Isolation, synthesis and stereo-selective synthesis of pharmacologically active compounds and study of their stereochemistry and structure activity relationship.



Hayat, Tasawar

FELLOW: Elected 2006

Born in Khanewal, Pakistan, on January 1, 1969

Secretary General, Pakistan Academy of Sciences
Distinguished National Professor,
Department of Mathematics, Quaid-i-Azam University, Islamabad

Tel: 051-9064 2172 **Fax:** 051-921 9888

Mob: 0321-530 1691 **Email:** fmgpak@gmail.com

- Education:** Quaid-i-Azam University, Islamabad, Pakistan: M.Sc., 1992, M.Phil., 1994; Ph.D., 1999.
- Positions Held:** Quaid-i-Azam University, Islamabad: Professor, Dept. of Mathematics, 2011 to date; Associate Professor 2005-2009; Assistant Professor, 2000-2005, Lecturer, 1998-2000; Senior Research Associate, 1995-1998, Alexander Von Humboldt Fellow, Darmstadt University, F. R. Germany, 2001-2002; Visiting Mathematician, ICTP, Trieste, Italy, 2004; Visiting Scholar, University of Illinois, Urbana-Champaign, USA, 1999; Visiting Scholar, University of Witwatersrand, Johannesburg, South Africa, 2004-2005; Visiting Scholar, Mabatho University, Mafiking, South Africa, 2005; Honorary Associate Professor, University of Witwatersrand, Johannesburg, South Africa, 2007-2009; Guest Professor, Nanjing Southeast University, China; Distinguished Adjunct Professor, North China Electric Power University, Beijing, China; Distinguished Professor, China Petroleum University, Qingdao, China; Associate Adjunct Professor, Tsinghua University, Beijing, China; Visiting Professor, Chinese Academy of Sciences, Hefei, China; Visiting Professor/Adjunct Professor in Universities of Saudi Arabia, UAQ and Malaysia; Visiting Professor, Beijing Normal University and Peking University, China
- Awards:** Obada Prize, 2021; Hilal-e-Imtiaz, Govt. of Pakistan, 2019; COMSTECH International Award, 2015; Gold Medal (Mathematics), Pakistan Academy of Sciences, 2006; Tamgha-i-Imtiaz, Sitara-i-Imtiaz, Govt. of Pakistan, 2005; 17th Khwarizmi International Award, Govt. of Iran, 2004; ISESCO International Prize, 2004; TWAS Young Scientist Award, 2000; M. Raziuddin Siddiqi Gold Medal, Pakistan Academy of Sciences, 1999; Prof. Abdus Salam Prize in Mathematics, 1999; Silver Medal in B.Sc., 1988.
- Fellowships/ Memberships:** Member, Syndicate, Quaid-i-Azam University, Islamabad, 2017 to date; Fellow, Third World Academy of Sciences, Italy; Fellow, Islamic World Academy of Sciences, 2012; Member, Task Force for Mathematics, Higher Education Commission, Pakistan; Member, Editorial Board, The Open Mechanical Engineering Journal, 2007; Member, Syndicate, Quaid-i-Azam University, 2006 to 2009; Member of Prof. Abdus Salam Prize Committee, 2005; Associate Editor, Islamabad Journal of Science, 2005; ICTP Associate, International Centre Memberships: for Theoretical Physics, Italy, 2004; Alexander von Humboldt Fellow, Darmstadt University, F.R. Germany, 2001-2002.
- Research Areas:** Wave Mechanics, Newtonian and Non-Newtonian Fluid Mechanics, Mathematical Modeling, Biomechanics, Differential Equations, Neutral Networks, Environmental Dynamics



Hoorani, Hafeez-ur-Rahman

FELLOW: Elected 2017

Born in Karachi, Sindh, Pakistan on October 3, 1958

Director-General, National Center for Physics, Islamabad

Member, Joint CERN-Pakistan Committee

National Contact Physicist of Pakistan at CERN

Simons Associate of Abdus Salam International Center for Theoretical Physics (ASICTP)

Adjusting Professor of Physics, Quaid-i-Azam University, Islamabad

Tel: (92-51) 2077302; **Mob:** 0335-555 5579

Email: Hafeez.Hoorani@cern.ch, Hafeez.Harooni@ncp.edu.pk

Education:

University of Karachi, Pakistan: BSc (Hons) Physics, 1980; M.Sc., 1982; Simon Fraser University, Vancouver, Canada: MPhil/ MS, 1986; University of Geneva, Switzerland, Ph.D., 1995; Carnegie Mellon University Pittsburg, USA Post-doc, 1996.

Positions Held:

Director-General, National Centre for Physics, Quaid-i-Azam University, Islamabad, Pakistan, 2014 to date; Adjusting Professor, Department of Physics, Quaid-i-Azam University, Islamabad, 2000 to date; Senior Research Physicist, European Organization for Nuclear Research (CERN), Geneva, Switzerland, 2013-2014; Scientific Director, Synchrotron-light for Experimental Science and Applications in Middle-East (SESAME) Project, Amman, Jordan, 2007-2013; Director Research, National Centre for Physics, Islamabad, Pakistan, 2004-2013; Professor of Physics - National Centre for Physics, Quaid-i-Azam University, Islamabad, Pakistan, 2002-2004; CERN Fellow, CERN, Geneva, Switzerland, 1999-2000; Senior Research Associate, Carnegie Mellon University, Pittsburgh, USA, 1996-1999; Research Associate, Eidgenössische Technische Hochschule (ETH) Zurich, Switzerland, 1995-1996; Research and Teaching Assistant, University of Geneva, Geneva, Switzerland, 1991-1995; Fellow of World Laboratory, CERN, Geneva, Switzerland, 1989-1991; Assistant Professor (Physics), University of Karachi, Karachi, 1987-1999; Research and Teaching Assistant (Physics), Simon Fraser University, Canada, 1983-1986; Lecturer (Physics), Govt. Degree College, Karachi, 1982-1983.

Awards:

Sitara-i-Imtiaz, 2019; Number one Productive Scientist of Pakistan, 2016; University of Karachi Awards: Galadari Gold Medal; Subrung Gold Medal; Philips Gold Medal, 1982.

Fellowships/ Memberships:

Member, Joint CERN-Pakistan Committee; Pakistan Coordinator for the World Federation of Scientists; Member, Scientific Advisory Board of LinkSceem Project Funded by the European Union (EU) under FP7 Program; Member, Asian Commission for Future Accelerator (ACFA); Member, International Commission for Future Accelerator Standing Committee on International Connectivity (ICFA SCIC); Member, International Advisory Committee for Computing High-Energy Physics (CHEP); Member, CMS Muon Technical and Institution Board; Member, CMS Management Board; Member, CMS Finance Board.

Research Areas:

Particle Physics



Husnain, Tayyab

FELLOW: Elected 2017

Born in Faisalabad, on February 1, 1960

Professor & Director

Centre of Excellence in Molecular Biology

University of Punjab, Lahore

Tel: (92-42) 35293127; **Mob:** 0321-408 7024

Email: director@cemb.edu.pk, tayyabhusnain@yahoo.com

- Education:** Government College, Faisalabad, Pakistan: BSc, 1978-1980; University of Agriculture, Faisalabad, MSc, 1981-1983; University of Nottingham, England, PhD, 1986-1990.
- Positions Held:** Director, Centre of Excellence in Molecular Biology, University of the Punjab, Lahore, 2010 to date; Professor, Centre of Excellence in Molecular Biology, 2006 to date; Associate Professor, Centre of Excellence in Molecular Biology, 1999-2006; Assistant Professor, Centre of Excellence in Molecular Biology, 1990-1999; Lecturer, Centre of Excellence in Molecular Biology, 1985-1986; Research Officer, Centre of Advanced Molecular Biology, 1984-1985; Senior Scientific Assistant, Nuclear Institute for Agriculture and Biology (NIAB) Faisalabad, 1983-1984.
- Awards:** 8th Invention to Innovation Summit, Gold Medal and Cash Award, 2019; 7th Invention to Innovation Summit, Gold Medal and Cash Award, 2018; Satha Invention Award, Gold Medal and Cash Award: 2016, 2017, PAS Gold Medal, 2016; Taghmae-Imtiaz, Govt. of Pakistan, 2008; Izaz-i-Fazeelat, 2005; Recognition Shield Award by Ministry of Textile Industry, 2014; Outstanding Scientists Award in Biotechnology, 2009; President Award of Academic Staff Common Wealth Fellowship in United kingdom, 2003; Certificate of Accomplishment for leading a highly successful project in rice and cotton presented by CEMB, 1997; Award for excellence in research to improve agricultural productivity in Pakistan by PARC-BOSTID, the U.S. National Academy of Science, 1994; Award of Science and Technology Scholarship in the field of Genetic Engineering and Biotechnology, 1986.
- Fellowships/ Memberships:** Member, International Society of Biosafety Research; Member, Genetical Society, U.K; Member, Pakistan Society of Biochemists; Member, International Association for Plant Tissue Culture; Member, Advisory Board CABB, Faisalabad; Member, Board of Governor CASVAB, Quetta; Member, Technical Advisory Committee, (TAC), Pakistan Environmental Protection Agency, Islamabad; Member, Quarterly Y Journal of Agriculture Research; Member, Editorial Board, Plant Chemistry and Ecophysiology.
- Research Areas:** Molecular Biology.



Hussain, Rabia

FELLOW: Elected 2006

Born in India, on August 8, 1946

Department of Pathology and Microbiology, The Aga Khan University (retired)

17/3/A, Hashim Tabba Road, Mohammed Ali Housing Society, Karachi, Pakistan

Tel: (92-21) 343 86257

Mob: 0300-829 2022

Email: professorrabiahussain@gmail.com

- Education:** University of Karachi: B.Sc (Hons) 1966; M.Sc. 1967; University of Western Ontario, Canada: PhD, 1973; MRC (Path) 1989; FRC (Path) 1997.
- Positions Held:** Ghulamali Hirji Professor of Microbiology, The Aga Khan University, 1990-2012; Chair, Department of Microbiology, The Aga Khan University, 1999-2003; HEC Distinguished National Professor, 2004; Visiting Professor: London School of Hygiene and Tropical Medicine, London UK, 1995-2012; Case Western University, Cleveland, Ohio, USA, 1995; AQ Khan Institute of Biotechnology and Genetic Engineering (KIBGE), University of Karachi, 2004; Associate Professor and Acting Chair, Department of Microbiology, The Aga Khan University, 1986-1990; Senior Staff Fellow, National Institutes of Allergy and Infectious Disease, National Institute of Health (NIH), USA, 1981-1985; Collaborative Researcher NIH, 1979-1981; Instructor, Department of Medicine, Johns Hopkins University, 1976-1979; National Research Council (USA) Research Associate, Naval Medical Research Institute, National Naval Medical Center, USA, 1973-1975; Teaching Assistant, Department of Bacteriology and Immunology, University of Western Ontario, Canada, 1970-1972; Assistant Lecturer, Department of Microbiology, University of Karachi, 1968-1969.
- Awards:** Listed in 'Top-20 Most Influential Women in Science in the Islamic World', Muslim-Science.Com, 2014; Lifetime Achievement Award, Pakistan Association of Pathology (Immunology), 2012; The Aga Khan University "Excellence in Research" Award, 2006; *Sitara-e-Imtiaz*, National award for Research/Education in Medicine, Government of Pakistan, 2005; Abdus Salaam Third World Academy of Sciences, (TWAS) Award in Basic Medical Sciences, 2000; *Tamghe-e-Imtiaz*, National award for Research/Education in Medicine, Government of Pakistan, 1999; Rockefeller Biotechnology Fellowship, The Rockefeller Foundation, USA, 1986-1988; Berson-Yellow Award for developing a radioimmunoassay technic, American Society of Nuclear Medicine, 1980; National Research Council Associateship Award, Washington DC, 1973-1975; Commonwealth Scholarship for PhD, Government of Canada, 1969-1973; Gold Medal for First position in M.Sc, University of Karachi, 1968; Merit Scholarship for First position in B.Sc. (Hons), University of Karachi, 1966-1967.
- Fellowship/ Membership:** Pakistan Society of Immunology, Fellow/ Elected Patron, 2012-2017; Islamic World Academy of Sciences, 2008; Elected Council Member, International Leprosy Association, 2007 to date; Pakistan Association of Medical Sciences, 2000; The Academy of Sciences for Developing World (TWAS), Trieste Italy, 2001; Royal College of Pathologist, 1997; Member: International Basic Sciences Program of UNESCO, 2015-2018; Elected Council Member and Vice President (South and Central Asian region), TWAS, 2013-2016; Governing Body of Marie Adelaide Leprosy Center, Pakistan, 1990 to date; International Leprosy Association, 1990; American Society of Tropical Medicine and Hygiene, 1985; American Association of Immunology, 1980; Academy of Allergy and Immunology, 1979; New York Academy of Science, 1978; Editor, Medical Journal of Islamic World Academy of Sciences (IAS), 2011 to date; Editor, Mycobacterial Diseases OMICS Publishing Group, 2007-2011; Associate Editor, Journal of Immunology, 1984-1986.
- Research Areas:** Immunology of Infectious Diseases, Biomarkers, Cytokines and Antibodies.



Ikram, Aamer

FELLOW: Elected 2020

Born in Rawalpindi, on March 3, 1963

Executive Director National Institutes of Health, Pakistan

Home Address: House 74, Street 3, DCI, Islamabad

Mob: 03215170713

Email: maahin1@yahoo.com

Education:

MBBS in 1987; Diploma in Pathology 1990; MCPS Clinical Pathology (1991); Fellowship (FCPS) Microbiology 1998; Clinical Training in the UK (2005); and PhD 2014; Diploma Occupational Safety Health & Environments 2008; Diploma Disaster Management 2010; Certificate in Emerging Infectious Diseases from University of Iowa 2010; Dual-Use Biosecurity from Bradford University 2010; Excelled in the fields of biosafety, biosecurity and infection control accomplishing courses from Harvard, Oxford, South Florida, Iowa, Chester, Bradford, UN, WHO, CDC, ABSA, etc.; Registered Biosafety Professional (RBP) from American Biological Safety Association (US); Biosafety Professional (BSP) from Institute of Safety in Technology & Research (UK); and IFBA Certified Professional status.

Positions Held:

Executive Director National Institutes of Health Pakistan since August 2017; Ex: ED PHRC, HOTA, Common Management Unit; Professor and Consultant Microbiology Armed Forces; Chair Board of Directors International Federation of Biosafety Associations (IFBA); Chair Advisory Board Training Program in Epidemiology & Public Health (TEPHINET) Atlanta; Member of Biosecurity & Health Security Protection (BSP) WHO & Chair Law Enforcement & Public Health (LEPH) Group; Executive Board International Association of National Public Health Institutes (IANPHI); Executive Council of International Society for Infectious Diseases; Global Health Delivery Faculty, Harvard School of Public Health; Adjunct Faculty Emory University; SME International Organization for Standardization ISO-35001 Working Group; Mentor Next Generation Global Health Security Network; Ex-International Ambassador Society for Healthcare Epidemiology America; Ex-Focal Point of Expertise for Medical Research and now Co-Chair Biological Sciences Committee, Higher Education Commission (HEC); Convener Microbiology Pakistan Health Research Council; and member multiple National Working Groups.

Awards:

Hilal-e-Imtiaz (Military) 2021; Sitara-e-Imtiaz (Military) 2014; IFBA Biosafety Heroes Award 2011 International Federation of Biosafety Associations.

Fellowships/ Memberships:

Fellowship in Public Health from Royal Colleges UK (2018); FRCPath by Royal College of Pathologists London (2014); Fellow Royal Society of Tropical Medicine & Hygiene (2014); FRCPath by Royal College Edinburgh (2012); Fellow College of Pathologists Pakistan (2009); International: Chatham House; International Academy of Pathologists; International Society of Infectious Diseases; *International Association of National Public Health Institutes*; International Federation of Infection Control – Associate Member; *International Nosocomial Infection Control Consortium*; International Society of Chemotherapy for Infection & Cancer; International Federation of Biosafety Associations – Member Academic Bd; International Organization for Standardization ISO-35001 Working Group; American Society for Microbiology; American Association for the Advancement of Science; Society for Healthcare Epidemiology of America; Royal Society for Tropical Medicine & Hygiene, UK; Institute of Safety in Technology & Research, UK – MISTR; Healthcare Infection Control Society, UK; American Biological Safety Association; European Biological Safety Association; Belgian Biosafety Professionals; EpiCore - Certified Member; WHO Save Lives; Stop TB Diagnostic Working Group; Medical Research Support (MedicReS), New York US (Gold Member); African Society for Laboratory Medicine; Asian Council of Science Editors; National: Pakistan Biological Safety Association (PBSA) – President; Medical Microbiology & Infectious Diseases Society Pakistan (MMIDSP) – President 2015; Pathologists Association of Pakistan (PAP) – Member; Health Research Advisory Board (HealthRAB); Infection Control Society of Pakistan (ICSP); Pakistan Society for Microbiology (PSM).

Research Areas:

GHSA, COVID-19, Emerging and Re-emerging Infections, Hospital Infection Control, Biosafety, Biosecurity and DURC, Tuberculosis, Fungal Infections, Genomics, Vaccines, etc.



Iqbal, Mohammad Perwaiz

FELLOW: Elected 2002

Born in Pakistan, on August 12, 1949

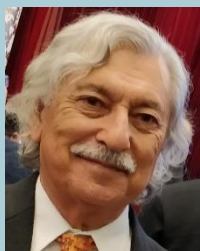
Department of Life Sciences,
University of Management and Technology, Lahore
Department of Biological & Biomedical Sciences,
The Aga Khan University, Medical College, Stadium Road, Karachi

Tel: Res: (042) 32187167

Mob: 0314-221 5542

E-mail: perwaiz.iqbal@aku.edu; mohammadperwaiziqbal@gmail.com

- Education:** University of the Punjab, Lahore, M.Sc., 1970; New York University, M.S., 1978; New York University, Ph.D., 1981.
- Positions Held:** Program, 2013-2019; Interim Chair, Department of Biological & Biomedical Sciences, 2009-2010 & 2015-2019; Acting Chair, Department of Biochemistry, 1983-86; Associate Professor of Biochemistry, 1986-91; Assistant Professor of Biochemistry, 1983-86; Assistant Professor, SUNY-Downstate Medical Center, New York, 1982-83; Instructor, SUNY-Downstate Medical Center, New York, 1980-82; Research Assistant, New York Medical College, New York, 1974-80; Research Assistant, Pakistan Medical Research Center; International Center for Medical Research & Training, University of Maryland, USA, 1971-74.
- Awards:** *Sitara-i-Imtiaz*, Government of Pakistan, 2002; Award of Excellence in Education, Aga Khan University, 2006; Outstanding Teacher Award, Aga Khan University, 2010, 2004 and 1995; PAS/INFAQ Gold Medal in Medical Sciences 2001 and in Biological Sciences 1995, Pakistan Academy of Sciences; Second Prize for International Publications, National Book Council, 1993; Academic Roll of Honor, Government College, Lahore, 1970.
- Fellowships/ Memberships:** NUST Distinguished Visiting Professor, National University of Science & Technology, Islamabad, 2013 to date; Fellow, Pakistan Society for Biochemistry and Molecular Biology, 2003; Chairman, Medical Research Society of Pakistan, 2000-2003; General Secretary, Medical Research Society of Pakistan, 1998-2000; Fellow, Pakistan Academy of Medical Sciences, 1992; Member, Biochemical Society, London, 1988 to date; Member, International Association of Medical Science Educators, 2004 to date; Life member Pakistan Pharmacological Society, 1991; Life Member, Pakistan Society for Biochemistry & Molecular Biology, 1991; Editor, Pakistan Journal of Biochemistry and Molecular Biology; Member, Board of Studies, Institute of Biochemistry & Biotechnology, University of the Punjab, 2001-2003; Member, Board of Studies, National Center for Proteomics, University of Karachi, 2010-2014; Adjunct Professor, Dr. Punjwani Center for Molecular Medicine and Drug Research, University of Karachi, 2010 to date; Fellow, Zoological Society of Pakistan, 2021; Prof. Muzaffar Ahmad Life Time Achievement Award 2021, Zoological Society of Pakistan.
- Research Areas:** Folate Metabolism, Enzymology, Gene Polymorphism, Vitamins' Deficiency and Development of Coronary Artery Disease, Vitamin D and Diabetes Mellitus, Effect of Climate Change on Health, Hyperhomocysteinemia.



Jan, M. Qasim

FELLOW: Elected 1990

Born in Hangu, Khyberpakhtunkhwa, on January 10, 1944

Distinguished National Professor (Emeritus),
University of Peshawar, Peshawar

Tel: (92-51) 922 5159

Mob: 0333-911 6467

Email: mqjan@yahoo.com

Education:

University of Peshawar (UoP), Pakistan: B.Sc. (Hons), 1964; Univ. of Oregon, Eugene, Oregon, USA: M.S., 1967; Univ. of London, UK: Ph.D., 1977; King's College London: DSc (Hon), 2009; University of Leicester, UK: DSc (Hon), 2013. Post-Doctoral research: University of Leicester, UK, 1981, 1989; Dartmouth College, USA, 1985; University of Oklahoma, USA, 1987-88; University of Oregon, USA, 1994-95.

Positions Held:

President, Pakistan Academy of Sciences (PAS), 2018-2020; Vice President, Alliance of International Sci. Organizations (ANSO) in the Belt & Road region, 2018-2021; Founding Member, International Disaster Risk Reduction (ANSO-DRR) organization, 2020; Advisor COMSTECH, Islamabad, 2011-2020; Distinguished National Professor (of HEC), 2004; Prof. Emeritus, National Center of Excellence in Geology (NCE Geol), UoP, 2010; Vice President, PAS, 2011-2012; Secretary General, PAS, 2007-2010; Secretary General, Association of the Academies of Sciences in Asia, 2008-2012; Vice Chancellor (VC), Quaid-i-Azam University, Islamabad, 2005-2009; VC, Sarhad University, Peshawar, 2001-2003; VC, UoP, 1997-2000; Dean Faculty of Science, UoP, 1997; Director, NCE Geol, UoP, 1988-2000; Visiting Professor, Univ. of Oregon, USA, 1994-1995; Professor UoP, 1983; Associate Professor, 1979. Remained member of many BoGs, BoTs, Academic Committees, Syndicates & Sennates of various institutions.

Awards:

Life-Time Achievement Award from Pakistan Association of Petroleum Geologists, 2019; *Hilal-i-Imtiaz*, 2010; *Sitara-i-Imtiaz*, 1999; *Tamgha-i-Imtiaz* and *Izaz-i-Fazeelat*, 1993 by Govt. of Pakistan; ISESCO Prize in Science & Technology (Geology), 2010; PAS Awards: Gold Medals, 1980, 1997; Distinguished Scientist of the Year, 2009; Ministry of S&T Prize for best paper, 1996. National Book Foundation Awards: Scientist of the Year, 1990; Earth Scientist of the Year, 1986; Best Book in Natural Sciences for 1995-1999 period; and many others.

Fellowships/ Memberships:

Co-Chair, Solar Radiation Management Governance Initiative (of TWAS-Royal Society-Environment Defense Fund USA), 2015-2017; Emeritus Fellow of the Mineralogical Society of Great Britain and Ireland, 2009; Honorary Fellow, Nepal Geological Society, 2007; Fellow, Islamic World Academy of Sciences, 2013; Fellow, The World Academy of Sciences (TWAS), 2002; Chairman, Himalayan Regional Committee of the International Lithosphere Program, 1998-2004; Fellow, Pakistan Academy of Geological Sciences, 1995; Fellow, Pakistan Academy of Sciences, 1990; Ex-Fellow, Mineralogical Society of America, 1990 and Geological Society of London, 1989.

Research Areas:

Geology, Mineralogy, Petrology, Geochemistry, with emphasis on tectonics and crustal evolution of the Kohistan magmatic arc (northern Pakistan), Chagai-Raskoh magmatic arc (Balochistan) and Nagar Parkar igneous complex (southeast Sindh).



Iqbal, Muhammad

FELLOW: Elected: 2011

Born in Gujrat, Pakistan, on June 15, 1958

Dean, Faculty of Sciences

Director, Office of Research, Innovation and Research (ORIC),
The University of Lahore, Lahore

Tel: +92-42-111-865-865-5175

Mob: 0323-431 9393

Email: iqbalm@fulbrightmail.org

Education:

University of Karachi, Karachi, Pakistan; B.Sc. (Hons), 1981; M.Sc., 1982; Quaid-i-Azam University, Islamabad, Pakistan: M.Phil., 1985, University of Sheffield, Sheffield, UK; Ph.D., 1990.

Positions Held:

Professor, Dean, Faculty of Sciences and Director, Office of Research, Innovation and Commercialization, The University of Lahore, Lahore, 2021-Present; Director General, National Physical and Standards Laboratory, 2016-Present; Member (Science), PCSIR, Ministry of Science and Technology, Islamabad, 2015-2016; Director General, Centre for Applied Molecular Biology (CAMB), Ministry of Science and Technology (MoST), Lahore, 2011-2015; Chief Scientific Officer/Head, Food & Biotechnology Research Centre, Pakistan Council of Scientific and Industrial Research (PCSIR), Lahore, 2008-2011; Principal Scientific Officer, PCSIR, Lahore, 2003-2006; Postdoctoral Research Associate, University of Sheffield, UK, 2002-2003; Post-doc, 2006-2007; Principal Scientific Officer, PCSIR, Lahore, 2000-2002; Senior Scientific Officer, PCSIR, 1998-2000; Postdoctoral Research Associate, University of Kiel, Kiel, Germany, 1996-1998; Post-doc, 1996-1998; University of Alaska, Fairbanks, Alaska, USA; Senior Scientific Officer, PCSIR, Lahore, 1990-1996; Research Associate, University of Sheffield, Sheffield, U.K., 1986-1990; Junior Research Associate, Quaid-i-Azam University, Islamabad, 1983-1985; Research Fellow, Quaid-i-Azam University, Islamabad, 1982-1983.

Awards:

Sitara-i-Imtiaz, 2016; *Tamgha-i-Imtiaz*, 2009 by President of Pakistan; Ranked Category "A" Productive Scientist of Pakistan, Pakistan Council of Science and Technology, (PCST), 2010-2011; Gold Medal, Pakistan Academy of Sciences, 2008; Senior Fulbright Postdoctoral Award, USA, 2006-2007; Research Productivity Award, by PCST, 2002-2013; Alexander von Humboldt Postdoctoral Award, Germany, 1996-1998; Young Scientist of the Year in South Asia, TWAS, Italy, 1995; Overseas Research Student Award, UK, 1986-1989; S&T National Talent Pool Scholarship Award, Government of Pakistan, 1986-1990; Academic Merit Certificate - M.Phil. (First Position), Quaid-i-Azam University, Islamabad, 1985; Certificate of Appreciation, United States Department of Agriculture (USDA), USA, 1984; Academic Merit Certificate - M.Sc. (2nd Position), University of Karachi, Karachi, 1982.

Fellowships/ Memberships:

Member, Board of Trustees of Pakistan Science Foundation, GoP, 2017-2020; Member, Expert Group of Ministry of Science and Technology, GoP, 2015-2017; Member, Pakistan Madrassah Education Board, Ministry of Religious Affairs and Interfaith Harmony, GoP, 2016-2018; Associate Secretary General, Pakistan Academy of Sciences, 2015-2017; Life Member, Pakistan Botanical Society; Member, American Society of Microbiology, 2006; Member, American Chemical Society, 2006; Member, Water Resources Association, Alaska, USA, 2007.

Research Areas:

Plant/Microbial/ Environmental Biotechnology.



Iqbal, Muhammad Zafar

FELLOW: Elected 1998

Born in Rawalpindi, Pakistan, on January 8, 1949

Professor Emeritus in Physics,
Quaid-i-Azam University, Islamabad

Tel: (Res): 051-226 4985

Mob: 0332-512 0162

Email: mzi8149@yahoo.com, mziqbal49@gmail.com

Education:

University of the Punjab, Pakistan: B.Sc., 1966, Government College, Lahore (University of Punjab), M.Sc., 1968, Quaid-i-Azam University, Pakistan: M.Phil., 1969; University of Manchester, UK: Ph.D., 1974.

Positions Held:

Quaid-i-Azam University, Islamabad, Chairman, Department of Physics, 1999-2001, Professor of Physics, 1991-2009, Associate Professor of Physics, 1985-1991, Senior Lecturer/Assistant Professor in Physics, 1970-1985; Visiting Scientist, Technical University, Berlin, Germany, June 1995-Sep.1995, Jun. 1997-Sep. 1997; Visiting Scientist Electrotechnical Laboratory, Tsukuba, Japan, Jan. 1996-Aug.1996; Visiting Scientist, Department of Physics, King's College, London, 1992-1993; Visiting Scientist, Department of Solid State Physics, University of Lund, Sweden, 1983-1984; Post-Doctoral Fellow, University of Manchester, UK, 1974; Research Fellow, Physics Dept., University of Islamabad (Quaid-i-Azam University), 1969-1970.

Awards:

First Prize, National Book Council of Pakistan, Ministry of Education, Govt. of Pakistan, 1988; Gold Medal, Pakistan Academy of Sciences, 1993; Pride of Performance Award, Govt. of Pakistan, 1998; Sitara-e-Imtiaz, Government of Pakistan, 2004; National Education Award, Pakistan Education Forum, 1997-98.

**Fellowships/
Memberships:**

Fellow, Institute of Physics, UK, 1996; Member, American Physical Society; Member, Institute of Electronics Engineers (IEEE), USA; Founding Member and Chairman, Pakistan Society for Semiconductor Science and Technology; Member, American Association for the Advancement of Science (AAAS), USA; Member, Editorial Advisory Board of Materials Science Forum Trans. Tech. Publication, Switzerland, 1996 to date; Associate of International Centre for Theoretical Physics, Trieste, Italy, 1985-1991; Associate of International Centre for Science and High Technology, Trieste, Italy, 1991.

Research Areas:

Experimental Solid State Physics (semiconductor physics): characterization of semiconductor materials and devices with particular focus on defect studies, silicon and a variety of compound semiconductors using DLTS, photocapacitance, photoluminescence and related techniques, growth of single crystals of semiconductors using Czochralski technique, synthesis and characterization of new high temperature superconductors.



Jan, Rasul

FELLOW Elected: 2014

Born in Swat, Khyber Pakhtunkhwa, Pakistan, on June 24, 1952

Professor Emeritus, Institute of Chemistry,
University of Peshawar, Peshawar

Mob: 92-2469141777

Email: rasuljan@yahoo.com

Education:

M.Sc. (Chemistry) 1976, M.Phil. (Chemistry) 1979, University of Peshawar; Ph.D. 1983, University College Cork, Ireland.

Positions Held:

Post-Doctoral Research Fellow, University College Dublin, Ireland, 1983-1985; Assistant, Associate and Professor, University of Peshawar, 1985-2012; Professor Emeritus, University of Peshawar, 2013; Chairman, Department of Environmental Science, University of Peshawar, 1999-2001; Director, Institute of Chemical Sciences, University of Peshawar, 2005-2008; Fulbright Scholar, New Mexico State University, USA, 2003-2004; Visiting Scientist, the Bio Design Institute, Arizona State University, USA, 2005; Vice Chancellor, University of Malakand, 2008-2012; Vice Chancellor, University of Peshawar, 2013-2017; Vice Chancellor, University of Poonch, Rawalakot, Azad Kashmir, 2017-Feb. 2022.

Awards:

Presidential Award "Pride of Performance" in Chemistry, 2010; Presidential Award *Sitara-e-Imtiaz*, 2016.

**Fellowships/
Memberships:**

Fellow, Chemical Society of Pakistan, 1994.

Research Areas:

Method Development for Determination of Chemical Species of Environment & Biological Importance, Recycling, Electro Analytical Chemistry & Fabrication of Sensors.



Khalid, Ahmad Mukhtar

FELLOW: Elected 2005

Born in Lahore, India, on March 1, 1945

Consultant, Qarshi University, Lahore

Mob: 0300-865 1900

Email: amkhalid1945@gmail.com

Education:

Government College, Lahore: M.Sc. (Hons), 1965; University of New South Wales, Australia: Ph.D. (Biotechnology), 1979.

Positions Held:

Vice Chancellor, Government College University, Faisalabad, 2009; National Institute for Biotechnology and Genetic Engineering (NIBGE): Advisor to Member, 2006 to 2009; Director, NIBGE, 2000 to 2006; Chairman, School of Biotechnology, Quaid-i-Azam University, Islamabad, 2000 to 2006; Member BOG, International Centre for Genetic Engineering and Biotechnology, (ICGEB) Trieste, Italy; Liaison Officer, ICGEB, Trieste, Italy; Visiting Professor of Biotechnology, University of Kentucky, Lexington, 1985-89; Senior Scientist, CSIRO and School of Biological Sciences, Macquarie University, NSW, Australia; Project Scientist (Academic), University of NSW, Australia.

Awards:

Tamgha-i-Baqa, (Pakistan Nuclear Test); Roll of Honor, Government College, Lahore; Presidential Medal for Science & Technology, 2008.

**Fellowships/
Memberships:**

Member, National Commission on Biotechnology; Member, National Commission on Nano-Technology; Member BOG School of Biological Sciences, University of the Punjab; Member BOG, Institute for Biotechnology and Genetic Engineering (IBGE), University of Peshawar; Member, Senate, University of Agriculture, Faisalabad; Vice President, The Pakistan Society for Biochemistry and Molecular Biology, Vice President, Pakistan Society for Biotechnology; Life Member, Student Union, University of New South Wales, Australia; Fellow, Chemical Society of Pakistan.

Research Areas:

Bioprocess Technology, Fermentation Technology; Biotechnology of Fossil Fuels; Biotechnology of Non-replenishable Resources (Minerals, etc), Bioelectronics and Biosensors.



Khalid, Fazal Ahmad

FELLOW: Elected 2007

Born in Kasur, Pakistan, on December 31, 1957

Rector, GIK Institute of Engineering Sciences and Technology, Topi-23640 KP

Tel: +92 938 281039

Fax: +92 938 281054

Mob: 0300-509 9361

Email: rector@giki.edu.pk

Education:

D.Phil. (Metallurgy and Materials Engineering), University of Oxford, UK, 1991; B.Sc. (Metallurgical Engineering), University of Engineering and Technology, Lahore, 1980; CEng, London, UK, 2005; LLB, University of Karachi (Islamia College), Karachi, 1985.

Positions Held:

Rector, GIK Institute, Topi from September 2021. Earlier served as Chairman PHEC from 2019-2021. Vice Chancellor, University of Engineering and Technology, Lahore from 2014-2018, and Additional Charge of KFUEIT, RYK, and MNSUET Multan, GIK Institute of Engineering Sciences & Technology, (GIKI), Topi, Pakistan: Pro-Rector (Academic), 2007-2014; Acting Rector, 2007-2008; Dean, Faculty of Materials Science and Engineering, 2003-2011; Professor of Materials Engineering, 2001 to date; Interim Dean 1997 to 2003; Convener, Graduate Program, 2004-2007. Assistant Executive Engineer (AXEN), Pakistan Steel Mills, Karachi, 1980-1986; Senior Engineer, PCSIR, Lahore, 1986 -1987; Post-Doctoral Research Fellow, University of Oxford, UK, 1992-1993; Research Fellow, University of Leeds, UK, 1993-1994; Visiting Professor, EMPA Dübendorf, Switzerland.

Awards:

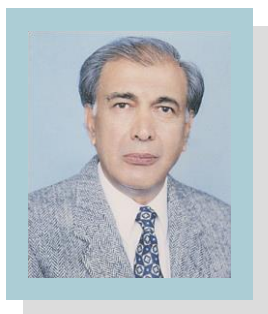
Sitara-i-Imtiaz by the President of Pakistan, 2008; Merit Certificate (GIKI) and Cash Prize, 2005-2007; PCST Research Productivity Award, 2011 & 2012; International Award DVS, Aachen, Germany, 2004; Gold Medal by Pakistan Academy of Sciences, 1999; International Vanadium Award by The Institute of Materials, London, UK, 1994.

**Fellowships/
Memberships:**

Fellow of Institute of Materials, London; CEng, PEng, Int PEng hon. PEC, Member of ASM, USA; Member of The Minerals, Metals and Materials Society, TMS, USA.

Research Areas:

Advanced Materials, Nanomaterials and Nanotechnology, Electron Microscopy, Accreditation and Quality assurance of Engineering Programs. Leadership and Academic Management.



Khan, Arshad M.

FELLOW: Elected 1992

Born in Malegaon, District Nasiq, India, on May 29, 1938

House No. 8, Main Double Road, F-10/2, Islamabad

Tel: (Res) (92-51) 221 4139, 210 5670

Mob: 0300-856 5236

Email: drarshadm Khan@yahoo.co.uk

Education:

University of Karachi: B. Sc. (Hons), 1958, M. Sc., 1959; University of Birmingham, UK: Ph.D., 1964.

Positions Held:

Executive Director, Global Change Impact Studies Centre, Islamabad, 2002-2015; Senior Nuclear Power Planner/Energy Economist, International Atomic Energy Agency, 1996-2001; Acting Head, Planning and Economic Studies Section, International Atomic Energy Agency, 1996-1997; Chief Scientist, Pakistan Atomic Energy Commission (PAEC), 1992-1998; Director, Applied Systems Analysis Group, PAEC, 1980-1996; Research Scholar, International Institute of Applied Systems Analysis, Austria, 1978-1980; Post Doctoral Research Fellow, Chalk River Nuclear Laboratories, Atomic Energy of Canada Ltd, 1965-1968; Demonstrator in Physics, University of Karachi, 1959-1960.

Awards:

Gold Medal (1st Position), Karachi Board, 1953; Merit Award for Outstanding Performance, International Atomic Energy Agency, 1998; Gold Medal, Pakistan Academy of Sciences, 1986.

**Fellowships/
Memberships:**

Member, Board of Trustees, Asian and Pacific Energy-Environment Planning Network (APENPLAN), Asian and Pacific Development Center, Kuala Lumpur, 1993-1996; Member and National Team Leader, Energy and Nuclear Power Planning Study of Pakistan, PAEC/IAEA, 1994-1996, Member and Team Leader/Coordinator, IAEA Project on Development of Indicators for Sustainable Energy Development, 1999-2001; Member/Secretary, Pakistan Planning Commission's Task Force on Climate Change, 2008-2010; Member, Committee for Formulation of Pakistan's National Climate Change Policy, 2010-2012.

Research Areas:

Nuclear Physics; Energy-economy-environment Systems Analysis and Planning for Sustainable Energy Development; Power System Expansion Planning; Nuclear Power Planning; Global Climate Change and Its Implication for Pakistan.



Khan, Hameed Ahmed

FELLOW: Elected 1990

Born in Rangoon, Burma, India, on May 1, 1942

H # 172, St. 36, F-10/1, Islamabad

Tel: (92-51)-926 6950

Mob: 0300-856 5445

Email: drhakhan@comsats.net.pk

Education:

University of the Punjab, Lahore, Pakistan: B.Sc. (Hon's), 1963, M.Sc., 1964; Birmingham University, UK: MS, 1969, Ph.D., 1972, D.Sc., 1994.

Positions Held:

Executive Director, COMSATS, 2000-2008; Pakistan Institute of Nuclear Science and Technology (PINSTECH): Scientist Emeritus; Director General, 1996-2000; Associate Director, 1994-1996; Head, Radiation Physics Division, 1992-1994; Chief Scientific Officer, 1986-1994; Principal Scientific Officer, 1977-1986; Senior Scientific Officer, 1972-1977; Scientific Officer, 1965-1972; Chief Scientist, Pakistan Atomic Energy Commission (PAEC), 1994; Visiting Professor, Bahauddin Zakariya University, Multan, Pakistan.

Awards:

Hilal-i-Imtiaz, (1999) and *Sitara-i-Imtiaz*, (1984), Govt. of Pakistan; International TWNSO Prize in Technology, Third World Network of Scientific Organizations (TWNSO), Trieste, Italy, 1998; Khwarizmi Prize, Govt. Iran, 1993; Gold Medal, Pakistan Academy of Sciences, 1975 and 1994; 1st Prize in Physics, National Book Foundation, Govt. of Pakistan, 1991, 1992, 1993.

**Fellowships/
Memberships:**

Fellow, Islamic Academy of Sciences, 1988; President, International Nuclear Track Society, UK, 1985; Fellow, Alexander von Humboldt (AVH), Philips University, Marburg, Germany, 1975; Member, Board of Studies in Physics, Quaid-i-Azam University, Islamabad, Pakistan; Member, Editorial Board, Radiation Effects (an International journal), Gordon and Breach Science, UK; Member, Radiation Measurements, a journal published in UK; Editor-in-Chief, The Nucleus, (published by Pakistan Atomic Energy Commission), 1993; Member, Editorial Board, Science International (a Pakistani Scientific journal), 1993; National Counterpart, Joint UNDP/PCA/IAEA Project, "Better Management of Environment, National Resources and Industrial Growth through Isotopic and Radiation Technology", 1997.

Research Areas:

Nuclear Physics, Radiation Physics, SSNTDs Reactor Physics.



Khan, Iqrar Ahmed

FELLOW: Elected 2007

Born in Sheikupura, Pakistan, on December 8, 1953

Vice Chancellor, University of Agriculture, Faisalabad, Pakistan

Tel: (92-41) 9200 200

Mob: 0300-866 0569

Email: iqrarahmadkhan2008@gmail.com

Education:

PhD, University of California, Riverside, USA, 1988; MS, University of California, Riverside, USA, 1984; M.Sc (Hons), University of Agriculture, Faisalabad, Pakistan, 1976; B.Sc (Hons), University of Agriculture, Faisalabad, Pakistan, 1974.

Positions Held:

Vice Chancellor, 2008 to date; Professor Emeritus University of Agriculture, Faisalabad, 2019 to date; Distinguished National Professor, 2017 to date; Ela Bhatt Professor, University of Kassel-Germany, 2019-2020; Vice Chancellor, MNS University of Agriculture, Multan, 2/2015 to 1/2016; Founder/COP U.S. Pakistan Center for Advanced Studies in Agriculture and Food Security, University of Agriculture, Faisalabad (UAF), 2014-2019; Visiting Professor, CREC-University of Florida, Lake Alfred, USA, 2001-2005; Vegetable Crops Specialist, Sultan Qaboos University, Muscat, 1997-2008; Professor of Horticulture, University of Agriculture, Faisalabad (UAF), 1995-2013, Associate Professor, UAF, 1990-1995; Assistant Professor, UAF, 1988-1990; Research Assistant, University of California, Riverside, 1983-1988; Lecturer, UAF, 1977-1983; Chief Scientist/Director NIAB/Director General (Agriculture and Biotechnology), Pakistan Atomic Energy Commission, 2005-07; Founder/ Director, Center for Agricultural Biochemistry and Biotechnology, UAF, 1996-97; Director, Agricultural Experiment Station/Assistant Dean, SQU-Muscat, 1999-2000; Founder/Officer In charge, Plant Tissue Culture Cell, UAF, 1989-1997.

Awards:

Ordre des Palmes Académiques, Civil Award by the Government of France, with the Grade of Officer, 2015; Islamic Development Bank Prize in S&T for UAF, 2012; Sitara-e-Imtiaz by Government of Pakistan; Honor Rolls, University of California, Riverside, USA, 1988; Sigma Xi, 1988; Gamma Sigma Delta, 1984; Phi Beta Kappa - MS, University of California, Riverside, USA, 1984; Silver Medal - M.Sc (Hons), University of Agriculture, Faisalabad, 1976; Bronze Medal - B.Sc (Hons), University of Agriculture, Faisalabad, 1974.

Fellowships/

Memberships:

Senior Research Fellow-Pakistan Institute of Development Economics, 2020-21; Fellow, Pakistan Academy of Sciences, 2007; Postdoctoral Fellowship in Cell Biology, University of California, Riverside, USA, 1988; Rockefeller Foundation Biotechnology Career, Fellowship University of California, Riverside, 1990-1993; Visiting Fellow, Cambridge University, Cambridge, UK, 1996; DAAD Fellowship in Tropical Agriculture, University of Kassel, Germany, 2001; Summer Visiting Professorships in Citrus Genetics and Breeding, University of Florida-Citrus Research and Education Center, Lake Alfred, 2000-2005; Executive, International Society for Citriculture (USA), since 1992; Member, Federal Agriculture Committee, 2006-07; Member, Pakistan Central Cotton Committee, 2006-07; Elected Member, University Syndicate, UAF, 1994-95; Elected Member, University Senate, UAF, 1980-83; Member, International Organization of Citrus Virologists (USA), International Society for Horticultural Science (Belgium), European Association for Potato Research (Netherlands), Florida State Horticultural Society, Botanical Society of Pakistan, Pakistan Association for Advancement of Sciences, Punjab Cooperative Fruit Development Board, Farmers Association of Pakistan, Soil Science Society of Pakistan, Pakistan Phytopathological Society, American Society for Horticultural Science, Botanical Society of America, American Association for Advancement of Sciences-Pacific Division, Cucurbit Genetics Cooperative, Apomixis Research Group, CYMMIT (Mexico), Islamic Development Network/IDB, Human Development and Capability Association/HDCA, Civic Bodies (USA, Oman, Pakistan); Life Member, Pakistan Botanical Society and Pakistan Zoological Society.

Research Areas:

Crop Improvement/Food security, Citrus Genetic, Biotechnology and Virology



Khan, Khalid Mahmood

FELLOW: Elected 2000

Born in Faisalabad, India, on June 15, 1941

President, Pakistan Academy of Sciences
Professor Emeritus, University of Agriculture (UAF), Faisalabad

Address: Pakka Mari, Tariq Abad, Faisalabad

Mob: 0300-856 7687

Email: khalidmkhan41@yahoo.com; president@paspk.org

Education:

University of the Punjab, Lahore, Pakistan: M.Sc. (Biochemistry), 1966; University of Edinburgh, UK: PhD (Biochemistry), 1970.

Positions Held:

President, Pakistan Academy of Sciences, (2021-to date); Professor Emeritus, University of Agriculture, Faisalabad; Vice President, Pakistan Academy of Sciences; Secretary General, Network of Academies of Sciences in OIC Countries (NASIC), 2004 to date; Vice Chancellor, University of Arid Agriculture, Rawalpindi, 2001 to 2012; Chairman, Pakistan Science Foundation, 1996-2001; Chairman, Pakistan Council for Scientific and Industrial Research, Islamabad, 1998-1999 (additional charge); Director Research, University of Agriculture, Faisalabad, 1994-1996; Director, Center for Biochemistry and Biotechnology, University of Agriculture, Faisalabad, 1994-1996; Professor and Chairman, Department of Biochemistry, University of Agriculture, Faisalabad, 1993-1996.

Awards:

Sitara-i-Imtiaz, Government of Pakistan, 2000; P.E. Lender Award, Alumni Association, University of Agriculture, Faisalabad, 2000.

**Fellowships/
Memberships:**

FAO Postdoctoral Fellowship, 1989; President, Pakistan Society for Biochemistry and Molecular Biology, 2001-2002; Member, Pakistan Society for Advancement of Sciences; Life Member, Pakistan Society of Biochemistry and Molecular Biology; Life Member, Scientific Educational Social Council of Biochemists; Secretary General, Pakistan Academy of Sciences, 2003-2006.

Research Areas:

Enzymatic elucidation of the structure of starch molecule and its components; Assessment of molecular configuration of starch molecules; Developed a new enzymatic method for determination of the number average degree of polymerization (DPn) of the linear amylase-type polysaccharides; Detection and quantification of soil enzymes and their correlation with soil fertility; Enzymes present in rhizosphere as exudation from plant roots and biological activity of soil microflora and fauna; Assessment of soil fertility and presence of soil microflora on enzyme basis; Study of molecular factors involved in HCV infection and interferon therapy.



Khan, Khalid Mohammed

FELLOW: Elected 2010

Born in Nawabshah, Pakistan, on January 12, 1960

Professor, University of Karachi, Karachi

Tel: +922134824910, +922199261718

Mob: 0300-218 7073

Email: khalid.khan@iccs.edu, drkhalidhej@gmail.com

Education:

University of Karachi, Pakistan, Ph. D., 1992; Quaid-i-Azam University, Islamabad, Pakistan; M.Sc., 1985; B.Sc. University of Sindh, Jamshoro, Pakistan, 1981.

Positions Held:

Professor, University of Karachi, Karachi, 2008 to date; Associate Professor, University of Karachi, Karachi, 2003 to 2008; Assistant Professor, University of Karachi, Karachi, 1997 to 2003; Senior Quality Control Officer, Lederle Laboratories Division, Cyanamid (Pakistan), Karachi, 1996 to 1997; Postdoctoral Fellow, Tübingen University, Tübingen, Germany, 1992-1995.

Awards:

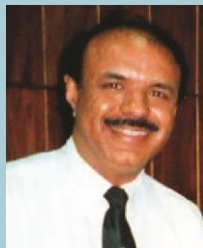
Sitara-i-Imtiaz, Government of Pakistan, 2010; *Tamgha-i-Imtiaz*, Government of Pakistan, 2004; Research Productivity Award (RPA) from the Pakistan Council for Science and Technology, 2001-2016; UNESCO-TWAS Associateship, 2013-2016; Pakistan Academy of Sciences Gold Medal, 2010; Most Cited Paper during, 2005-2008; Award from Elsevier Publishers, 2008; *Nishan-e-Azmat-e-Danish* Plaque, University of Karachi, 2005; Pakistan Academy of Sciences Gold Medal, 2004; South Asia Star Award, 2003; South Asia Star Award, 2004; Justice Qadeeruddin Gold Medal, 2003; Leader and Trainer of 20 Bronze Medals and one Honorable Mention Winner Pakistani Chemistry Olympiad Teams which Participated in International Chemistry Olympiads in different countries, 2007-2017.

**Fellowships/
Memberships:**

Member, Steering Committee of International Chemistry Olympiad, 2016; National Representative of IUPAC for Organic and Bioorganic Chemistry Division, 2012-2013; Member, Board of Studies, National Centre for Excellence in Analytical Chemistry, University of Sindh, Jamshoro, 2012-2013; Member, Board of Faculty of Sciences, Allama Iqbal Open University, Karachi, 2011-2014; Elected Secretary General, The Chemical Society of Pakistan, 2006, 2010-2014; Fellow, The Chemical Society of Pakistan, 2008; Member, American Chemical Society; Member, The Chemical Society of Pakistan; Member, Board of Studies, University of Peshawar, since 2008; Member, Board of Studies, Quaid-i-Azam, University Islamabad, since 2008; Associate Editor, International Journal of Biological and Chemical Sciences, since 2007; Member, Board of Studies, University of Karachi, Karachi 2005; Member, Curriculum Committee, Urdu University, Karachi, since 2004; Coordinator, National Chemistry Talent Contest (STEM Careers Program) under Higher Education Commission, since 2003; Member, PCST Peer Review Committee for R&D Institutions, 2002; Secretary, National Core Group in Chemistry under Higher Education Commission, 2002-date.

Research Areas:

General Synthetic Organic Chemistry, Bio-organic and Medicinal Chemistry.



Khan, M. Asif

FELLOW: Elected 2009

Born in Dist. Chakwal, Pakistan, on November 19, 1954

Vice Chancellor, University of Peshawar, Peshawar

Tel: 0092-91-922 2198

Fax: 0092-91-922 2199

Email: vice_chancellor@uop.edu.pk, masifk9@gmail.com

Education:

D.I.C. & PhD (Imperial College London), 1988; B.Sc. (Hons) & MSc., Department of Geology, University of Peshawar.

Positions Held:

Vice Chancellor, University of Peshawar, Khyber Pakhtunkhwa, 2017-date; Vice Chancellor, Karakoram International University, 2014-2017; Tenured Professor and Director, National Centre of Excellence in Geology, University of Peshawar, Khyber Pakhtunkhwa, Pakistan.

Awards:

Distinguished National Professor, Higher Education Commission, 2012; Pakistan Academy of Sciences, Gold Medal in Earth Sciences, 2002; Civil Award, *Tamgha i Imtiaz*, 2000; National Book Foundation, Scientist of Year Award, 1990.

**Fellowships/
Memberships:**

Elected as Foreign Fellows of the Chinese Academy of Sciences, 2019; Secretary, Peshawar Chapter, Pakistan Academy of Sciences, 2010-2014, 2017-date; Elected Honorary Fellow (Life Time), Geological Society, London, Since 2008.

Research Areas:

Tectonics & Mountain Building Processes Himalayas, Kohistan, Karakoram & Hindu Kush. Structural Geology of the Himalayan Foreland Thrust-Fold Belt in N. Pakistan. Tectonics of the India-Afghan Collision Zone, Kurram-Waziristan Tribal Belt, NW Pakistan. Natural Hazards of Earthquakes, Mass Movements (Landslides, Debris Flow) and Floods. Natural Hazard Management & Preparedness.



Khan, Mohammad Aslam

FELLOW: Elected 2008

Born in Jhelum, India, on March 7, 1945

Department of Physics, COMSATS Institute of Information Technology,
Physics Block, Park Road, Chak Shahzad, Islamabad

Tel: (92-51) 923 5714

Fax: (92-51) 444 2805

Mob: 0300-855 1947

Email: aslamk@comsats.edu.pk, aslamk1960@hotmail.com

Education:

University of the Punjab, Lahore (Gordon College, Rawalpindi), BSc, 1965; University of the Punjab, Lahore, Physics, MSc 1967; University of Hull, Physics, England, PhD, 1974.

Positions Held:

HEC Foreign Professor, COMSATS Institute of Information Technology (CIIT), Islamabad, since 2007; Head, Department of Physics, CIIT, Islamabad, 2008-10; Professor of Physics & Senior Research Scientist, Physics Department & Center for Applied Physical Sciences, King Fahd University of Petroleum & Minerals (KFUPM), Dhahran, Saudi Arabia, 1995-2008; Associate Professor & Research Scientist, KFUPM, 1984-1995; Assistant Professor, KFUPM, 1981-1984; Assistant Professor of Physics, Al-Fatah University, Tripoli, Libya, 1978-1981; Senior Scientific Officer, PINSTECH, Islamabad, 1974-1978; Visiting Scientist, CISE, Milan, Italy, 1976; Scientific Officer, AEC, Lahore, 1968-1970. Visiting Positions (Short-Term): University of Virginia, Charlottesville, USA (1988, 1993), Frie University, Berlin, Germany (1988, 1989, 1992); University of Freiburg, Germany (1990); Max Planck Institute, Garching, Germany (1984); Australian National University, Canberra, Australia (1982); University of Hull, England (1976, 1979, 1980, 1981, 1985).

Awards:

Gold Medal, First Class First Position, BSc, University of the Punjab, 1965; Saigol Foundation Overseas Merit Scholarship, 1970-1973; Prince Muhammad Award (shared) for Research; Distinguished Service Award, KFUPM, 2008.

**Fellowships/
Memberships:**

Chartered Physicist and Member, Institute of Physics, London (1974-2007); Life Member, Pakistan Institute of Physics; Former Member, Optical Society of America; American Society for Non-Destructive Testing (ASNT); American Chemical Society (Saudi Arabian Chapter).

Research Areas:

Lasers and their Applications, Plasma Physics, Atomic and Molecular Spectroscopy, Ultrasonics, Materials Processing.



Khan, Shaukat Hameed

FELLOW: Elected 2002

Born in Lahore, India, on September 4, 1941

Ex. Coordinator General, COMSTECH,
33-Constitution Avenue, G-5/2, Islamabad

Tel: 051-922 0681-3

Mob: 0300-855 5671

Email: shkhan@comsats.net.pk

- Education:** Oxford University, UK: B.A., 1964; B.Sc., 1965; D.Phil., 1968. Rhodes Scholar, Oxford, 1962-65; Research Grant, Culham Labs, UK for PhD studies. Gordon College, Rawalpindi, University of the Punjab: B.Sc. (Hons), 1961.
- Positions Held:** Ex. Coordinator General, COMSTECH; Executive Director, SOPREST (Society for the Promotion of Engineering Sciences and Technology) – the parent body of GIKI. 2. Other Current Positions: -Chairperson, Rhodes Selection Committee, Pakistan; Technical Advisor, Planned Technical University, Sialkot; Member BoG, Aiwan-i-Quaid, F-9, Islamabad; Member, Board of Directors, HMC, Taxila; 3. Recently Held: Member of The Industrial Policy Group, Ministry of Industries, Government of Pakistan; 2010-11; Member, Board of Directors TUSDEC (PIDC); Rector, GIK Institute, Topi, 2008-09; Member, Planning Commission, Pakistan Government, 2005-9; Project Director and principal author (2006-7) "Pakistan in the 21st Century: Vision 2030"; Convener of several 'Task Forces' (2007-09) for implementation of Vision 2030; Chief Scientist/ DG CC / DG SPS, Pakistan Atomic Energy Commission (PAEC), 1997 to 2005; Scientific Associate, CERN, Geneva, 1999-2001; President, of several Oxford societies (Walter Raleigh Club, Oxford Majlis, Pakistan Society); 4. Earlier: Director, Optics Labs, PAEC, Nilore, 1985–2001; Founder, Laser Group, PAEC, 1969.
- Awards:** Pride of Performance, Govt of Pakistan, 1993; Technology Gold Medal, Pakistan Academy of Sciences, 1993 Rhodes Scholar, Oxford, 1962; Gold Medal University of the Punjab, 1961; Best All-Round Student, Gordon College Rawalpindi, 1961; National Talent Scholar, 1959-61.
- Fellowships/ Memberships:** Member of: Board of Trustees, Pakistan Science Foundation. 2005-7; President's Steering Committee on Higher Education, 2002; Member /Secretary, Electronics Sub-Committee (Prime Minister's High Level Review Commission, 1995); National Counterpart / World Bank Team: "Reforms in Higher Education and Research" (1994); Res. Adv. Board, National Institute of Electronics, 1991-97; National Commission of Science & Technology, 1987-1995; Fellow, Pakistan Nuclear Society. Res. Adv. Board, National Institute of Electronics, 1991-97; National Commission of Science & Technology, 1987-1995; Fellow, Pakistan Nuclear Society.
- Research Areas:** Laser Based Position Monitoring System for the massive CMS detector, (LHC, CERN); Radiation Damage Studies of Optical Glasses, Cements, and Coatings; Atomic & Molecular Spectroscopy/Laser Isotope Separation; Lasers and Optronics for Defense; Laser Produced Plasmas; Ultrafast High Voltage Switching.



Khanum, Azra

FELLOW: Elected 2005

Born in Karachi, Pakistan, on February 9, 1949

Dean, Barani Institute of Management Sciences (BIMS)
2F Malikabad Complex, Main Murree Road (Near 6th Road) Rawalpindi 46300, Pakistan

Tel: 92 (051)-485 3701-2/132

Mob: 0300-519 3108

Email: azrakhanum@bims.edu.pk, azrakhanum@uair.edu.pk, akhanum@hotmail.com

- Education:** University of Karachi, Karachi, Pakistan: M.Sc. 1971; Quaid-i-Azam University, Islamabad, Pakistan: M.Phil., 1976; Ph.D., 1982; National Institute of Health, Bethesda, MD, USA.
- Positions Held:** Dean, Barani Institute of Management Sciences (BIMS), Rawalpindi - a joint venture with Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi (PMAS); Director, Institute of Natural and Management Sciences (INAM), Rawalpindi, affiliated with Sargodha University, Sargodha, 2012-2015; University of Arid Agriculture, Rawalpindi: Research Consultant, Department of Biochemistry, 2009-2012; Dean, Faculty of Sciences, 2007-2009; Chairperson, Department of Biochemistry, 2003-2007; Chairperson, Department of Biological Sciences, 1998-2003; Professor, 2002-2009; Associate Professor, 1998-2002; National Institute of Health, USA: Visiting Scientist, 1995-1997; Netherlands Cancer Institute, Amsterdam: Guest Scientist, 1993-1994; Quaid-i-Azam University, Islamabad: Assistant Professor, 1984-1991; Lecturer, 1979-1984; Post Doctorate, 1984-1987; Research Officer, 1977-1978; University of Karachi, Karachi and Quaid-i-Azam University, Islamabad; Research Associate, 1974-1976; University of Karachi, Karachi, 1972-1974.
- Awards:** *Tamgha-i-Imtiaz*, 2008; HEC Best Teacher Award, 2001; Gold Medal, Pakistan Academy of Sciences, 2003; International Fogarty Post-Doctoral Fellowship, NIH, MD, USA, 1984-1987; Consultant-TOKEN (Transfer of Knowledge through Expatriate Nationals) Program at Quaid-i-Azam University, Islamabad, sponsored by UNDP-NTP (National Talent Pool), Ministry of Labor, Manpower and Overseas Pakistanis, 1997-1998.
- Fellowships/ Memberships:** Fellow, Pakistan Academy of Medical Sciences; Fellow, Zoological, Society of Pakistan; Fellow, Society for Biochemistry and Molecular Biology of Pakistan; Member, New York Academy of Sciences, USA; Member, American Association for the Advancement of Science, USA; Member, American Society for Biochemistry & Molecular Biology; Member, Endocrine Society, USA; Member, Pakistan Botanical Society; Member, Organization for Women in Science for the Developing World (OWSD).
- Research Areas:** Cloning of genes in livestock and human health; Identification of antimicrobial peptides from edible/nonedible parts of vegetables for use against poultry, livestock and human health; Development of DNA-based vaccine and multiplex based diagnosis for tuberculosis.



Luqman, Muhammad

FELLOW: Elected 2007

Born in Rawalpindi, Pakistan, on August 4, 1950

Head, Pathology Department, Foundation University Medical College,
Defense Mall, Jinnah Avenue, Rawalpindi

Tel: (Off) (92-51) 5788171, Ext 307; (Res) (92-51)-5730105

Mob: 0300 5519929

Fax: (92-51) 51-5788582

Email: mluqmandr1950@hotmail.com, mluqmandr1950@yahoo.com

- Education:** Nishtar Medical College, Multan/University of the Punjab (Lahore): MBBS, 1974; Jinnah Postgraduate Medical Centre/ University of Karachi: M.Phil., 1980; College of Physicians & Surgeons Pakistan, FCPS, 1991.
- Positions Held:** Professor of Pathology/Head of Department, Foundation University Medical College, Rawalpindi, 2004 to date; Professor of Pathology, Armed Forces Institute of Pathology (AFIP), Rawalpindi, 2000 -2004; Army Medical College, Rawalpindi: Professor of Pathology, 1999-2000; Research Director, Pakistan Medical Research Council (PMRC) Research Centre, 1999-2000; Technical Director, Pakistan US Laboratory for Seroepidemiology (PULSE), 1999-2000; Assistant Professor, Pathology Department, 1980 to 1992; Ex-Dean, Faculty of Pathology, College of Physicians & Surgeons Pakistan.
- Awards:** Bukhari Gold Medal for Best Research Paper as a Junior Pathologist in 11th National Scientific Conference of Pakistan Association of Pathologists (PAP), Abbottabad, 1987; Co-author of a paper awarded President Gold Medal and Award in 3rd Biennial Congress of Pakistan Medical Research Council (PMRC), Lahore, 1986; Pakistan Academy of Medical Sciences (PAMS), Junior Gold Medal and Award, Rawalpindi, 1989; Iftikhar Gold Medal and Burki Gold Medal for outstanding performance in FCPS – II Examination, 1991, CPSP, Karachi.
- Fellowships/ Memberships:** Life Member, Pakistan Association of Pathologist; Founding Editor, Pakistan Journal of Pathology (1999-2004); Editor, Pakistan Armed Forces Medical Journal (1993-2002).
- Research Areas:** Cancers in Pakistan, Medical Education.



Malik, Kauser Abdulla

FELLOW: Elected 1995

Born in Lahore, India, on July 7, 1945

Department of Biological Sciences, F.C. College, Lahore

Tel: (92-042) 9920 1583, Ext 504

Mob: 0300-854 0271

Email: kauser45@gmail.com

- Education:** Government College, Lahore; University of the Punjab, Lahore, Pakistan: B.Sc. (Hon's), 1964, M.Sc. (Hon's), 1965; University of Aston, Birmingham, UK: Ph.D., 1970.
- Positions Held:** Distinguished National Professor, Dept. of Biological Sciences, F.C. College, Lahore, 2008 to date; Member (Food & Agri.), Planning Commission, Government of Pakistan, 2006-2008; Member (Bio and Admin), Pakistan Atomic Energy Commission (PAEC), 2001-2006; Honorary Secretary, National Commission on Biotechnology (NCB), 2001-2008; Chairman, Pakistan Agricultural Research Council (PARC), Islamabad 1998-2001; Director General/Chief Scientist, National Institute for Biotechnology and Genetic Engineering (NIBGE) and Nuclear Institute for Agriculture and Biology (NIAB), Faisalabad, 1997-1998; Chief Scientific Officer/Principal Scientific Officer/ Senior Scientific Officer, NIAB, 1971-1998; Head, Soil Biology Division, NIAB, 1980-1991; Visiting Scientist, Institute of Biophysics, University of Hanover, West Germany, 1986.
- Awards:** *Hilal-i-Imtiaz*, Govt. of Pakistan, 2004; *Sitara-i-Imtiaz*, Govt. Pakistan, 1998; *Tamgha-i-Imtiaz*, Govt. Pakistan, 1988; ISESCO Prize in Biology, 1997; Gold Medal, Pakistan Academy of Sciences, 1993; Certificate of Commendation for Scientific Research in Biology, Govt. of Pakistan, 1989; Distinguished National Professor, HEC, 2006 to date.
- Fellowships/ Memberships:** Fellow, The Academy of Sciences for the Developing World (TWAS), (1997); Fellow, Pakistan Academy of Sciences, (1995); Secretary (Lahore Chapter), Pakistan Academy of Sciences (2010-2012); Alexander von Humboldt Fellow (1974-1975); Member, Board of Trustees, International Foundation for Sciences (IFS), Stockholm, Sweden (1997 to date); Board of Governors, ICGEB (1993 to 2008); Standing Advisory Group on Nuclear Applications (SAGNA), IAEA, 2000 to 2010; Biotechnology Action Council (BAC), UNESCO, Paris, France, 2004 to 2006; Board of Trustees WWF-Pakistan (2004 to 2010); Editorial Board, Pakistan Journal of Botany and Nucleus, Pakistan; President, Biotechnology Society of Pakistan, 1994 to date; Consultant, FAO/IAEA Joint Division in Malaysia (1990), Bangladesh (1991), Iran (1991), Algeria (1991), Turkey (1993), Sri Lanka (1996), Tanzania (1999), Senegal (1997,1999); Bangladesh, Malaysia and several other countries; FAO/IAEA Joint Division in Malaysia (1990), Bangladesh (1991), Iran (1991), Algeria (1991), Turkey (1993), Sri Lanka (1996), Tanzania (1999), Senegal (1997, 1999); Bangladesh, Malaysia and several other countries.
- Research Areas:** Plant-Microbe Interaction, Plant Biotechnology, Rhizospheric Microbiology, Bioenergy.



Mansoor, Shahid

FELLOW: Elected 2014

Born in Karachi, Pakistan on October 27, 1962

Director, National Institute for Biotechnology and Genetic Engineering (NIBGE),
Faisalabad, Pakistan

Tel: (Off) 92-41-265 1475; (Res): 92-41-265 1917

Fax: 92-41-265 1472

Email: director@nibge.org; shahidmansoor7@gmail.com

Education:

University of Karachi: B.Sc. (Hon)., 1986, M.Sc., 1987; Ph.D., Department of Virus Research, The John Innes Centre Norwich, U.K and the degree awarded by Department of Biological Sciences, University of East Anglia, 1999.

Positions Held:

Research Fellow, National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad, 1988-1989; Scientific Officer, NIBGE, Faisalabad, 1989; Visiting Scientist, Department of Health Effect ENEA CRE Casaccia, Rome, Italy, 1990-1991; Visiting Scientist, Department of Virus Research, John Innes Centre, 1993-1993; Senior Scientific Officer, NIBGE, Faisalabad, 1994; Post-Doctoral Fellow, Sainsbury Laboratory, Norwich, UK under Royal Society Fellowship, 2000; Principal Scientific Officer, NIBGE, Faisalabad, 2002; Head Agricultural Biotechnology Division, NIBGE, Faisalabad 2006-2013; Fulbright Scholar at Plant Genome Mapping Laboratory, University of Georgia, Athens, 2011-2012; Deputy Chief Scientific, NIBGE, Faisalabad, 2012; Director, NIBGE, Faisalabad, 2013 to date.

Awards:

First class position in B.Sc. (Hons) Biochemistry and M.Sc. Biochemistry, University of Karachi; Awarded Royal Society UK Fellowship; *Sitara-e-Imtiaz* by President of Pakistan, 2009; HEC Outstanding Performance Award (Research Paper 2005, 2006, 2011; Research Productivity Award for PCST for the last ten years; HEC Distinguished National Professor, 2014.

**Fellowships/
Memberships:**

Royal Society UK Fellowship 2000, One year sponsored by The Royal Society, UK in the laboratory of Prof. David, Baulcombe, Sainsbury Laboratory, John Innes Centre, Norwich, UK on "Manipulation of Rx gene for resistance against geminiviruses and characterization of begomoviruses and small circular DNA molecules associated with cotton leaf curl virus and Ageratum yellow vein virus in Pakistan. Fulbright Scholar 2011-12, one year at Plant Genome Mapping Laboratory, University of Georgia, Athens, under the leadership of Prof. Andrew Paterson on genomics of cotton.

Research Areas:

Molecular characterization of economically important geminiviruses, their gene function, geminivirus-host interactions and development of novel sources of virus resistance, genomic characterization of whitefly biotypes and development of insect resistant plants; Novel uses of RNA interference technology, Genome biology of cotton, whitefly and livestock in Pakistan and their applications in novel traits development.



Maqsood, Asghari

FELLOW: Elected 2010

Born in Jhang, Pakistan, on September 15, 1947

Professor Emeritus and Advisor to Vice-Chancellor,
Air University, PAF Complex, E-9, Islamabad

Tel: 051-9153-397

Mob: 0333-511 5261

E-mail: tpl.qau@usa.net

Education:

Dhaka University: BSc (Hons) in Physics (1966-1970); University of the Punjab: MSc in Physics (1972); Oxford University: MSc in Experimental Solid State Physics (1979); Gothenburg University, Sweden: PhD (1982).

Positions Held:

Lecturer, Quaid-i-Azam University (1973-1982); Asst. Professor (1982-1987); Associate Professor (1987-1993); Professor (1993 - 2005); Professor and Chairperson of the Department of Physics (2001-2002); Meritorious Prof. of Physics (2005 to present); Tenured Professor (July 2007); Regular Visiting Faculty Professor, NUST (2008 -2013); Head of Department of Materials Eng. (2008); Head of Physics UG Program at NUST (2008-2009); Professor of Physics, Center for Emerging Sciences and Technology, Islamabad (2013 -2014); Professor of Physics, Air University, Islamabad (2014-2015); Dean Faculty of Basic and Applied Sciences, Air University, Islamabad (2015 to 2021); Prof. Emeritus, Air University (2015); Acting Dean Graduate studies from Jan. 2020-Sept 2020. Advisor to Vice-Chancellor 2021 to present.

Awards:

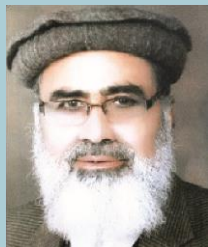
Top 2% Scientist of World by Stanford University USA lifetime achievement as well as for the year 2019. Dr. Z.A. Hashmi Gold Medal by Pakistan Science Foundation (2014); Life Time Achievement Award by Pakistan Vacuum Society (2013); Sitara-i-Imtiaz by President of Pakistan (2011); Izaz-i-Fazeelat by Government of Pakistan (2005); Prime Minister Gold Medal on World Teacher Day (2004); HEC Best University Teacher Award (2002); PCST Research Productivity Award (2002-2014); Pride of Performance, by Government of Pakistan (2001); Gold Medal by Pakistan Academy of Sciences and INFAQ Foundation Prize (2000); South Asian Publication Award 'Star Women 1994'; Gold Medal by University of the Punjab on 1st position in MSc (1972); Academic Roll of Honor, University of the Punjab (1972); Merit Scholarship from primary school to PhD.

Fellowships/ Memberships:

Associate Member of ICTP (1992-1997); Member, International Crystallographic Society; Fellow, World Innovation Foundation since (2002); Life Member, Pakistan Institute of Physics; Life Member, Pakistan Physical Society; Life Member, Pakistan Vacuum Society; Fellow, Pakistan Nuclear Society (2002); Elective Member, Thin Film Division (TFD) of the IUVESTA (2010); Member, Oxford and Cambridge Society, Pakistan.

Research Areas:

Transient Hot Strip (THS) and Transient Plane Source (TPS) techniques; Thermal transport properties of solids and liquids; High-Tc superconductors, Nanoferrites, Nanoparticles, electrical, dielectric and magnetic properties; Thin films of group II-VI semiconductors; Solar cells. Single crystal growth by flux method; Nano-composites; impedance spectroscopy; Optical properties of composites.



Marwat, Khan Bahadar

FELLOW: Elected 2014

Born in Lakki Marwat, KP, Pakistan, on August 15, 1953

Address: House 114, St 2, Professors Colony,
Near Agriculture University, Peshawar-25130

Mob: 0307-888 9944, 0334-888 9922

Email: kbmarwat@aup.edu.pk; kbmarwat@sbbu.edu.pk; kbmarwat@gmail.com

Education:

The University of Illinois at Urbana-Champaign (USA): Ph.D. (Weed Science), 1988; University of Peshawar, Peshawar: Ph.D. (Botany), 1985; MSc (Botany) 1975; BSc, University of Peshawar, 1973.

Positions Held:

Vice-Chancellor, The Agriculture University, Peshawar/SBBU, Sheringal, Dir Upper (2010-2017); Meritorious Professor, 2004-2013; Professor, 1995-2004; Associate Professor, 1987-1995; Assistant Professor, 1982-1986; Lecturer, 1977-1982; Plant Taxonomist, 1976-1977, PCSIR Peshawar.

Awards:

Recipient of Life Achievement Award for 2019, from Asia-Pacific Weed Science Society; *Sitara-i-Imtiaz* by Government of Pakistan, 2012; Quaid-e-Azam Gold Medal, 2011; Research Productivity Award by Pakistan Council of Science & Technology; President of Pakistan's Medal for S & T, 2008; HEC Best University Teacher Award for 2005; Outstanding Weed Science Award from Governor Punjab, 1993.

Fellowships/ Memberships:

Life Member and President, Weed Science Society of Pakistan; Life Member, International Weed Science Society; Life Member, Pakistan Botanical Society; Member & Founding President, Pakistan Ethnobotanical Society; Member, Pakistan Council for Science and Technology; President, Asia Pacific Weed Science Society, 2007-2010; Executive Member Near East, Weed Science Society 2007 to date; Weed Science Society of Japan, 2003-2010; Member, Weed Science Society of Philippine, 2003-2005; Member, Weed Science Society of America, 1984-91; Ex-Member, Core Group in Biological Science, HEC, Islamabad; Principal Signatory of Memorandum of Sino-Pakistan Collaboration with Chinese Academy of Sciences for Biodiversity; Ex-Member, Pakistan Science Foundation; Member, Himalayan University Consortium of ICIMOD; Ex-Member, Executive Committee of National Commission for Science and Technology, Pakistan; Member BoG, MTI, Bannu (2021-24)

Research Areas:

Weed Ecology, Parasitic Weeds, Invasive Weeds, Plant Taxonomy, Weed Management, Medicinal Plants, Ethnobotany.



Miana, Ghulam Abbas

FELLOW: Elected 1998

Born on Dera Ismail Khan, India in February 2, 1939

Rector/Director Research,
Riphah Institute of Pharmaceutical Sciences, 7th Ave., G-7/4, Islamabad

Tel: (92-51) 289-1835

Mob: 0321-5216305

Fax: (92-51) 2891261, 5567527

Email: drgamiana@gmail.com

- Education:** University of Peshawar, Peshawar (Government College, D.I. Khan), Pakistan: B.Sc., 1959; M.Sc. (Chemistry), 1961; University of Calgary, Alberta, Canada: Ph.D., 1967.
- Positions Held:** Rector, Riphah International University, Islamabad, 2003 to date; Director Research, Riphah Institute of Pharmaceutical Sciences, Riphah International University, 2006 to date; Associate Dean, RARE Research Division, 2007-2013; Director, Hamdard Institute of Pharmaceutical Sciences, Hamdard University, 1999-2003; Whole Time Member, University Grants Commission, Islamabad, 1996-1999; UNIDO Expert on Botanical Pesticide, 1967 (China), 1996 (Thailand), 1990 (Germany); Gomal University, D.I. Khan: Vice Chancellor, 1987-1990, 1990-1993; Professor, 1974-1999; Chairman, Dept. of Chemistry, 1980-1981, 1993-1996; Chairman, Dept. of Pharmacy, 1974-1981; Visiting Professor, Institute of Herbal Medicine and Pharmacology, Hamdard University, Karachi, 1998 to date; Visiting Professor, HEJ Research Institute of Chemistry, University of Karachi, 1994 to date, Professor, King Saud University, Riyadh, Saudi Arabia, 1981-1986; Associate Professor, Quaid-i-Azam University, 1971-1974; Senior Research Officer, PCSIR Labs, Peshawar, 1961-1971. Secretary General, Pakistan Academy of Sciences, 2011-2012; Postdoctoral Research, 1970-1971; University of Calgary, University of Bonn, Germany: Humboldt Research Fellow; Postdoctoral Fellowship, 1973-74; German Cancer Research Centre, Heidelberg, Germany: Humboldt Research Fellow Postdoctoral Research, 1976; Pennsylvania State University, USA: Postdoctoral Research, 1978-79; London School of Pharmacy, University of London, UK: Postdoctoral Research, 1984.
- Awards:** *Sitara-i-Imtiaz*, Govt. of Pakistan, 1988; Gold Medal in M.Sc., University of Peshawar, 1961; Cash Prize for the best book by National Book Foundation, 1989.
- Fellowships/ Memberships:** Fellow, Chemical Society, UK; Fellow, Chemical Society of Pakistan, 1994; Fellow, Pharmaceutical Society of Pakistan, 1997; Fellow, Pakistan Institute of Chemistry, 1997; Member, Pakistan Nuclear Regulatory Board, 1998-2000; Member, Pakistan Academy of Sciences, 1983; Member, American Society of Pharmacognosy; Member, Scientific Society of Pakistan; Member, Pakistan Association of Scientists and Scientific Professions; Member, Pharmaceutical Society of Japan; Member, Phytochemical Society of Europe, UK; Member, American Chemical Society, USA; Member Executive Council, Society of Pakistan; Member and Executive Secretary, Chemical Society of Pakistan; Member of Syndicates and Boards of Governors of several Universities and R&D Organizations.
- Research/Areas:** Organic chemistry with special interest in alkaloid chemistry, pharmacological and pharmaceutical applications of medicinal plant derivatives.



Mubarakmand, Samar

FELLOW: Elected 2003

Born in Rawalpindi, India, on September 17, 1942

Chairman, Board of Directors, Punjab Mineral Company, Pvt. Ltd. (PMC), Government of Punjab

Islamabad office: H. No. 30, St. No.3, E-11/4, Islamabad

Tel (Off): 051-222 3810

Tel (Res): 051-229-1884

Mob: 0300-854 4800

Email: samar.mubarakmand@gmail.com

Education:

M.Sc. (Physics) with academic roll of honour, 1962; Govt. College Lahore, University of the Punjab; D.Phil. (Experimental Nuclear Physics), 1966, University of Oxford, England.

Positions Held:

Chairman, BoG, UCG Project, Thar; Co-Chairman, BoG, Balochistan Copper-Gold Project; Chairman, BoDs, Punjab Mineral Company; CEO, Board of Directors Thar Coal Power Company; Member (Science & Technology) Planning Commission, Govt. of Pakistan; Special Assistant to Prime Minister on Science & Technology, 2007-2008; Founding Chairman, National Engineering & Scientific Commission (NESCOM); Member (Technical), Pakistan Atomic Energy Commission (PAEC), 1995-2000; Director General, PAEC, 1994-1995; Director, PAEC 1985-1994; Chief Scientific Officer, PAEC, 1979-1985; Principal Scientific Officer, PAEC, 1973-1979; Senior Scientific Officer, PAEC, 1966-1973; Scientific Officer, PAEC, 1962-1966.

Awards:

Nishan-i-Imtiaz (2003); *Hilal-i-Imtiaz* (1998); *Sitar-i-Imtiaz* (1992); Dr. Nazir Ahmed Award (2005); International Scientist of the Year (2007).

**Fellowships/
Membership:**

Life Member, Pakistan Nuclear Society; Founding Member, Society for Promotion of Engineering Science & Technology in Pakistan (SOPREST) and Board of Governors, GIK Institute, TOPI; Life Patron & Member, Board of Governors of Al-Shifa Trust; Member, Board of Governors, Capital University of Science & Technology (CUST); Member, Board of Governors, Fast National University; Member Board of Governors, COMSATS; Member Syndicate, Govt. College University (GCU) Lahore, 2012-2018.

Research Areas:

Nuclear instrumentation; Nuclear Structure; Fiber Optics; Application of LASERS; Nuclear Weapon Systems; Nuclear Diagnostics; Aero Space Technology; Underground Coal Gasification; Power Generation and Mineral Exploration.



Muhammed, Amir

FELLOW: Elected 1979

Born in Udaipur, India on February 4, 1930

Rector, National University of Computer and Emerging Sciences, FAST House, Rohtas Road, G-9/4, Islamabad

Tel: (92-51) 285 5032, 285 5072/74

Mob: (92) 300-855 2066

Fax: (92-51) 285 5070

Email: amir.muhammed@nu.edu.pk, amir.muhammed@gmail.com

Education:

University of the Punjab, Pakistan: B.Sc. (Hons), 1952; M.Sc. (Hons), 1953; Oxford University, UK: D.Phil., 1959.

Positions Held:

Rector, National University of Computer and Emerging Sciences, Islamabad, 2000 to date; President, Asianics Agro Development International, 1990 to date; Founder Chairman, Pakistan Agricultural Research Council (PARC) and Federal Secretary, Ministry of Agriculture, Govt. of Pakistan, 1978-1990; Advisor to President (Federal Minister), 1977-78; Vice Chancellor, University of Agriculture, Faisalabad, 1974-1978; Director, Nuclear Institute for Agriculture and Biology (NIAB), Faisalabad, 1969-1974; Research Associate, Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tenn. USA, 1963-66; Principal Scientific Officer and Head Biology Division, Pakistan Atomic Energy Center, Lahore, 1966-1969; Senior Research Officer, Pakistan Council of Scientific and Industrial Research (PCSIR), Lahore, 1959-1961.

Awards:

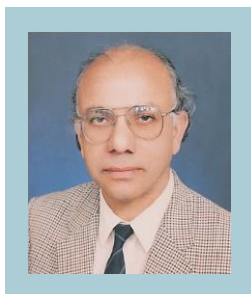
Gold Medal by Prime Minister (1989); PARC Silver Jubilee Award (2006); FAO Life Time Achievement Award (2002); Gold Medal in M.Sc. (1953) and Oman Prize in B.Sc. (Hons) (1952) from University of the Punjab; Academic Roll of Honor, Government College, Lahore; Merit Scholarship, Postgraduate Research, Oxford University, UK, 1956-1959.

**Fellowships/
Memberships:**

President, Pakistan Association for the Advancement of Science, 2000-2002; President, Pakistan Academy of Sciences, 1992-1996; President, Scientific Society of Pakistan, 1976-1977; Member, BOG International Centre for Integrated Mountain Development (ICIMOD, Kathmandu); Chairman BOG, Sustainable Development Policy Institute (SDPI); Chairman BOG, ISNAR (The Hague); Member, Technical Advisory Committee, CGIAR; Member, BOG of ICARDA (Syria), IWMI (Colombo), CIP (Lima), IFDC (USA); Member, BOG, PARC; Member, Scientific Planning Group of APN (Kobe); Member, Scientific Steering Committee of START (Washington); Chairman, Pakistan Vice Chancellors' Committee, 1976-1977.

Research Areas:

Biochemistry, Molecular and Radiation Biology, Agricultural Development.



Murtaza, Ghulam

FELLOW: Elected 1991

Born in Amritsar, India, on January 3, 1939

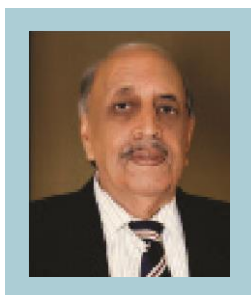
HEC Distinguished National Professor (2010), Senior Visiting Faculty, Salam Chair in Physics, GC University, Lahore.

Tel: (92-42) 9921 2245

Mob: 0331-458 6520

Email: murtaza_gcu@yahoo.com

- Education:** Government College, Lahore / University of the Punjab, Lahore, Pakistan: B.Sc., 1958; M.Sc., 1960; Imperial College London / London University, UK: Ph.D./ D.I.C., 1966.
- Positions Held:** Salam Professor of Physics, Govt. College University, Lahore (2016-2020; 2008-2014; 2006-2007; 2000-2004); DG, Abdus Salam School of Mathematical Sciences (ASSMS) 2017-2020; Director General, National Tokamak Fusion Program, PAEC, 2007-2008; Director, National Centre for Mathematics GC University, Lahore (2004-2006); Quaid-i-Azam University, Islamabad: Dean, Faculty of Natural Sciences (1996-1999); Chairman, Department of Physics (1977-1979, 1990-1993); Meritorious Professor (1993-2000); Professor (1976-1999); Associate Professor (1967/1976); Scientific Officer/Senior Scientific Officer, Pakistan Atomic Energy Commission (1962-1969); Lecturer, Mathematics Department, University of the Punjab, Lahore (1960-1962).
- Awards:** HEC Distinguished National Professor, 2010; PCST Research Productivity Award, 2002, 2003, 2005, 2007, 2008, 2010-2012; 2013, 2014, 2015 and 2016; Senior Associate ASICTP, 1998-2004; Kharazmi International, 1997; *Sitara-e-Imtiaz* by the President of Pakistan, 1996; Cash Prize for Research Publications by the Ministry of Science & Tech., 1996; Physicist of the Year, 1991; Gold Medal for Physical Sciences by the Pakistan Academy of Sciences, 1986; Academic Roll of Honour, Govt. College, Lahore (B.Sc., 1958, M.A. 1960).
- Fellowships:** Alexander von Humboldt Fellow, 1983; Commonwealth Academic Staff Fellow, 1971-1972.
- Research/Areas:** Theoretical Plasma Physics; Particle Physics.



Nasim, Anwar

FELLOW: Elected 2007

Born in Pasrur, India, on December 7, 1935

Address: Unit 224, 36 Via Bagnato, Toronto, Ontario M6A0B7, Canada

Mob: 1647-308-6160

Email: dranwarnasim@gmail.com

- Education:** University of the Punjab, Lahore: B.Sc., 1955; M.Sc., 1957; University of Edinburgh, UK: Postgraduate Diploma in Genetics, 1963; Ph.D., 1966.
- Positions Held:** Secretary General, Pakistan Academy of Sciences, 2013-2014; Founding President, Federation of Asian Biotech Associations (FABA), 2007; Patron, Pakistan Biotechnology Information Center (PABIC), 2006 to date; Patron, Pakistan Biological Safety Association (PBSA), 2008-date; Chairman, National Commission on Biotechnology of Pakistan, 2002-2009; Advisor Science, Organization of Islamic Conference (OIC) Standing Committee on Scientific & Technological Cooperation (COMSTECH), Islamabad, 1996 to 2011; Executive Secretary, Pakistan Academy of Sciences, Islamabad, 1994-1996; Adjunct Professor, Dept. of Microbiology and Immunology, University of Ottawa, 1983-1989; Dept. of Biology, Carleton University, Ottawa, 1984-1989; Principal Scientist and Head, Molecular Genetics Group, King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia, 1989-1993; Visiting Scientist, Max Planck Institute, Tubingen, Germany and the Biology Department, Stanford University, California, USA, 1978-1979; Senior Research Officer, National Research Council of Canada, 1973-1989; Research Officer, Atomic Energy of Canada Ltd, Chalk River, Canada, 1966-1973; Lecturer in Botany, Education Department, West Pakistan, 1957-1962.
- Awards:** Gold Medal in M.Sc., University of the Punjab, 1957; Academic Roll of Honor, Govt. College, Lahore, 1957; Overseas Pakistanis Institute Award for Outstanding Services in the Cause of Science in Pakistan, 1995; Pride of Performance in Molecular Genetics, Govt. of Pakistan, 1995; *Sitara-i-Imtiaz*, Govt. of Pakistan, 1999.
- Fellowships/ Memberships:** First Pakistani based in Canada Elected as a Foreign Fellow, Pakistan Academy of Sciences, 1988-2007; Fellow, Islamic World Academy of Sciences, 1998; Fellow, The World Academy of Sciences (TWAS), 1987; Member, Editorial Board, Mutation Research, 1975-81; Member, Editorial Board, Eubios Journal of Asian and International Bioethics, Japan, 1994 to date.
- Research Areas:** Molecular Genetics, Mechanisms of DNA Repair in Eukaryotes, Environmental Mutagenesis, Biotechnology and Bioethics.



Qadir, Asghar

FELLOW: Elected 1992

Born in Simla, India, on July 23, 1946

Abdus Salam School of Mathematical Sciences (AS-SMS),
Government College University (GCU), 68-B, Muslim Town Lahore

Tel: (Res) 051-228 2034

Mob: +92-331-855 4537

Email: asgharqadir46@gmail.com; aqadirmath@yahoo.com

Education:

London University: B.Sc. (Hons.), 1967; Imperial College, London: A.R.C.S., 1967; D.I.C., 1968; London University: Ph.D., 1971.

Positions Held:

Visiting Professor, AS-SMS, GCU, Jan. 2020-to date; Visiting Professor, GIK Institute of Engineering-sciences & Technology (GIK), Sept. 2019-Jan. 2020; Advisor School of Natural Sciences, National University of Sciences & Technology (NUST), Jan. 2019-Jun. 2019; Professor Emeritus, School of Natural Sciences, National University of Sciences & Technology (NUST), H-12, Islamabad, 2012; Professor Emeritus 2012-2019; Professor, Centre for Advanced Mathematics & Physics (CAMP), 2019, 2004-2012 and Director General CAMP, 2004-2011; Professor, CAMP, NUST, Rawalpindi, 2003-2012; Distinguished National Professor (HEC) 2004-date; Professor, Department of Mathematics and Statistics, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia, 1994-1997 and 2000-2002, Adjunct Professor 2002-2015; Qauid-i-Azam University, Islamabad: Meritorious Professor, 2000-2004; Dean, Faculty of Natural Sciences, 1999-2000; Professor, 1987-2000; Professor, Associate Professor, 1982-1987; Chairman, Department of Mathematics, 1983-1986, 1988-1994, 1997-1999; Assistant Professor, 1973-1982; Research Associate, 1971-1972; Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi, Swabi, NWFP, 1993-1994; Professor, Department of Mathematics and Statistics, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, 1994-1997; Vacation Worker, Rutherford High Energy Laboratory, Didcot, Oxfordshire, UK, 1966, 1967.

Awards:

Conferences in honour of 70th birthday and 65th birthday at Salento University of Lecce, 2016 and 2011 and at Punjab University in honour of 75th, 70th, 65th and 60th birthdays in 2021, 2016, 2011 and 2006; Lifetime Achievement Award, AS-SMS 2013; Visiting Professor at School for Computational & Applied Mathematics, University of the Witwatersrand, Johannesburg, South Africa (2011-2013), and award from there 2012; *Hilal-i-Imtiaz*, 2008; Best Researcher of the Year, NUST, 2007; Distinguished National Professor (HEC) 2004 to date; ISESCO Award, 2003; *Sitara-i-Imtiaz*, 1999; Gold Medal of the Pakistan Academy of Sciences (PAS) 1996; *Kharizmi* First Prize, Govt. of Iran, 1995; Prize, National Book Council of Pakistan, 1991; Senior Fulbright Fellowship Fulbright-Hayes Award 1978-1979; and 1986-1987; First Prize in General Knowledge Contest for High School Students 1961.

Fellowships/ Memberships:

Senior Research Fellow, Pakistan Institute of Development Economics (PIDE), 1980-88, 1988-94; Joint Secretary, Al-Kindi Society for the Advancement of the Philosophy of Science, Islamabad, Pakistan, 1980; Associate Member and Senior Associate of the International Centre for Theoretical Physics, Trieste, Italy, 1980-1991, 1992-1999; Life Member and VicePresident, Albert Einstein Society (of Pakistan), 1985, 1987-date; Life Member, Joint Secretary and Secretary, Pakistan Physical Society, 1990, 1992, 1993; Life Member and President, Fulbright Alumni Association, 1992, 1993. Member, Editorial Board of several national and international journals.

Research Areas:

Relativity, Astrophysics, Cosmology, Lie Analysis, Special Functions, High Energy Physics, Mathematical Economics.



Qaiser, Mohammad

FELLOW: Elected 2004

Born in Saharanpur, India, on August 15, 1946

Vice Chancellor, University of Karachi, Karachi-75270

Tel: 021-9926 1336 & 37

Mob: 0334-317 4624

Email: qaismd@gmail.com, vc@uok.edu.pk

Education:

University of Karachi, Karachi, Pakistan: M.Sc., 1967; Ph.D., 1976.

Positions Held:

Vice Chancellor, University of Karachi, Karachi; Vice Chancellor, Federal Urdu University, Karachi; 2008-2013; University of Karachi: Dean, Faculty of Science, 2004; Chairman, Department of Botany, 2001-2004; Professor, 1985-2006; Associate Professor, 1982-1985; Assistant Professor, 1977-1982; Lecturer, 1973-1977; Assistant Lecturer, 1967-1973. Postdoctoral Fellow and Visiting Scientist, Botanischer Garten Museum, Frei University, Berlin, 1984-1985; Assistant Professor, Department of Botany, Al-Fateh University, Tripoli, Libya, 1978-1982.

Awards:

Gold Medal, Pakistan Academy of Sciences, 2004; Gold Medal, Ministry of Education, Government of Pakistan, 2005. Life Time Award, Pakistan Botanical Society, 2012.

Fellowships/ Memberships:

Fellow, TWAS (The World Academy of Sciences); Alexander von Humboldt Fellow (AvH), Germany; Member, International Society of Plant Biosystematics (IOPB).

Research/Areas:

Plant Systematics, Flora of Pakistan, Phytogeography, Pollen Morphology and Conservation Biology.



Qamar, Raheel

FELLOW: Elected 2009

Born in Abbottabad, Pakistan on January 14, 1962

Tenured Professor of Biochemistry & Molecular Biology;
Rector, COMSATS University Islamabad, Park Road Islamabad

Tel: (92-51) -9249 5036

Mob: +92-321-5119494

Email: drraheel@gmail.com, raheel_qamar@comsats.edu.pk

Education:

BSc, 1982; MSc, 1985; PhD, 1992

Positions Held:

Member, Prime Minister of Pakistan's National Taskforce on Science & Technology, 2019 to date; Rector, COMSATS University Islamabad, 2017 to date; Chairman, Board of Directors, National Testing Service, 2017 to date; President, COMSTech-Inter-Islamic Network on Information Technology, 2017 to date; Professor, (Tenured) of Biochemistry and Molecular Biology, COMSATS University Islamabad, 2005 to date; Dean, Research, Innovation and Commercialization (RIC), COMSATS University Islamabad, 2011 to date; Distinguished NUST Professor (visiting), Atta-ur-Rahman School of Applied Biosciences, National University of Sciences & Technology, 2012-2015; Director Research, Shifa College of Medicine, 2003-2012; Lecturer, The Human Genome Project (HUGO), UK, 1998 to date.

Awards:

Tamgha-i-Imtiaz by President of Islamic Republic of Pakistan, 2008.

Fellowships/ Memberships:

Convener, HEC National Committee on BPS/TTS Faculty Issues, 2018 to date; Member, Academic Search Committee for the appointment of Vice-Chancellors of Public Sector Universities, Government of Khyber Pakhtunkhwa, 2019 to date; Member, Syndicate, Islamia University of Bahawalpur, 2018-2020; Member (Person of Eminence), Syndicate, Lahore College for Women University (LCWU), Lahore, 2019-2022; Member, Editorial Board, World Journal of Ophthalmology, 2016-2019; Member, Executive Board, International Centre for Chemical and Biological Sciences (ICCBS), Karachi, 2014-2018; Member, Board of Governors COMSATS Institute of Information Technology (CIIT), Islamabad, 2008-2010; Vice Chairman/Member, Ethics Committee/Institutional Review Board, Shifa International Hospital and Shifa College of Medicine, Islamabad, 2012-2013; Wellcome Trust Fellowship, Oxford University, UK, 1998-2001; Robert A. Welch Foundation Fellowship, North Texas University, USA, 1987-1988.

Research Areas:

Molecular Genetics, Molecular Pathology, Enzymology, Population Genetics.



Qureshi, Riaz Hussain

FELLOW: Elected 2003

Born in Tehsil Kharian, Gujrat, India, on May 17, 1943

Vice President, Pakistan Academy of Sciences
House No. 24, St. No. 25, Korang Town, Islamabad

Mob: 0337-749 7786

Email: rqureshi@alum.hec.gov.pk

Education:

University of Agriculture (WPAU, Lyallpur), Faisalabad: B.Sc. Agri., 1962; M.Sc. Agri., 1964; University of Bangor, Wales, UK: Ph.D., 1969.

Positions Held:

Advisor (Human Resource Development), Higher Education Commission (HEC), 2010-2013; Advisor (QA & LI), HEC, 2004-2010; Vice Chancellor, University of Agriculture Faisalabad (UAF), 1999-2004; Professor Emeritus, UAF, 2004 to date; Dean, Faculty of Agriculture, UAF, 1998-1999; Director Research, UAF, 1996-1997; Chairman, Department of Soil Science, UAF, 1991-1997; Professor, Dept. of Soil Science, UAF, 1987-2004; Salinity Expert, Islamic Development Bank, Sultanate of Oman, 1994-1995; Nominee of HEC on Selection Board, Syndicate and Senate of various Universities; Postdoc, 1983; Colorado State University, Fort Collins, USA: Postdoc, 1989.

Awards:

Pride of Performance (Agri), 1997; Dr. Norman E. Borlaug Award, 1994; Sir William Roberts Shield, 1992; Golden Star by National Farm Guide Council of Pakistan, 1987; 11th Golden Star Award for Man of the Year, 2000; Agha Hassan Abedi Prize by Pakistan Academy of Sciences for Best Scientist of the Year, 2000; Research Productivity Allowance, Pakistan Council for Science & Technology; Nominee of Govt. of Pakistan for World Food Prize, 2005.

Fellowships/ Memberships:

President, Soil Science Society of Pakistan; Member, of all important national committees and institutional committees on Soil Salinity; Chief Editor (8 years), Pakistan Journal of Agricultural Sciences; Member, Syndicate University of Agriculture, Faisalabad; Member, Steering Committee, International Irrigation Management Institute; Member, Research Advisory Committees of PARC and NIBGE.

Research Areas:

Saline Agriculture, Soil Salinity, Drought Tolerance of Plants.



Rashid, Abdul

FELLOW: Elected 2013

Born in Faisalabad, Pakistan, on April 4, 1950

Former Member (Bio-Sciences)
Pakistan Atomic Energy Commission, Islamabad

Tel: (Res) 051 877 2285

Mob: 0308-520 3032, 0346-520 3046

Email: dr.rashid50@gmail.com; abdul.rashid@paspk.org

Education:

PhD (Agronomy & Soil Science), 1986, University of Hawaii, USA – as East West Center scholar; MSc (Hons) Soil Science, 1972, University of Agriculture, Faisalabad.

Positions Held:

Coordinator, Zinc Harvest Project in Pakistan, 2008-2021; Editor-in-Chief, Pakistan Academy of Sciences, 2011–2018; Member (Bio-Sciences), Pakistan Atomic Energy Commission (PAEC), 2008–2011; Chief Scientist & Director General, National Agricultural Research Center (NARC), Islamabad, 2006–2008; Chief Scientific Officer & Deputy Director General/Program Leader, NARC, Islamabad, 2000–2006; Crawford Fund Fellow at CSIRO Land & Water, Adelaide, Australia, 2000; Visiting Scientist, International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria, 2001; Principal Scientific Officer & Program Leader, NARC, 1987–2000; East-West Center (Hawaii, USA) Joint Doctoral Research Intern 1984–86; Senior Scientific Officer, NARC, 1979–1987; Scientific Officer, Nuclear Institute for Agriculture & Biology (NIAB), Faisalabad, 1973–1979.

Awards:

IPNI Science Award, by International Plant Nutrition Institute (IPNI), USA, 2017; J. Benton Jones Award, by Soil and Plant Analysis Council, USA, 2017; IFA Norman Borlaug Award for excellence in crop nutrition research, by International Fertilizer Association (IFA), Paris, 2013; East-West Center (Hawaii, USA) Distinguished Alumni Award, 1998; PARC Silver Jubilee Award, by President of Pakistan, 2006; Dr. Norman Borlaug Award, by Government of Pakistan, 2005; PARC Scientist of the Year Award, 1999; National Book Foundation Award, 1997; Research Productivity Award, 2002, 2012; and multiple Awards by PARS (Pakistan Agricultural Research Council Scientists Association), 1995–2004.

**Fellowships/
Memberships:**

Co-Chair, Scientific Review Panel, (Agriculture), Higher Education Commission (HEC), 2019 to date; Member, Technical Advisory Committee (TAC) of BoD of ALP, PARC, 2017–date; Editorial Board Member, European Journal of Agronomy, 2001–date and Communications in Soil Science & Plant Analysis, 2003–date; Guest Editor, Communications in Soil Science & Plant Analysis, 2016; Fellow, Indian Society of Soil Science, 2006; Fellow, Soil Science Society of Pakistan, 2008; President, Soil Science Society of Pakistan, 2005–2006.

Research Areas:

Soil Fertility & Crop Nutrition, Micronutrients, Agronomic Biofortification.



Riazuddin, Sheikh

FELLOW: Elected 1997

Born in Lahore, India, on April 15, 1944

HEC Distinguished National Professor/ Professor Emeritus, SZABMU, Islamabad

Mob: 0321-842 9448

Email: riazuddin@aimr.org

Education:

Government College, Lahore/ University of the Punjab, Lahore, Pakistan: M.Sc., 1965; University of Reading, UK: Ph.D., 1970.

Positions Held:

Executive Director A-IMB & Visiting Professor, Seoul National University, Seoul, South Korea, 2009–2013; Distinguished National Professor, Higher Education Commission, 2004 to date; Meritorious Professor, 2002; Professor (Rtd), National Center of Excellence in Molecular Biology, University of the Punjab, Lahore, 1985; Visiting Professor, Department of Biochemistry, University of Washington, Seattle, USA, 1988–2004; Principal Scientific Officer, Nuclear Institute for Agriculture and Biology (NIAB), Faisalabad, 1977–1985; Senior Scientific Officer, NIAB, Faisalabad, 1970–1977; Scientific Officer, PAEC, Lahore, 1966–1970.

Awards:

IARC Senior Postdoctoral Award, 1977; Swiss Prize (Isabelle De Caze De Nue), IARC, Lyon, France, 1978; Gold Medal, Pakistan Academy of Sciences, 1982; *Tamgha-i-Imtiaz*, 1984; Gold Medal, Johns Hopkins Society of Scholars and Member, since 1989; Rockefeller Foundation's Biotechnology Career Fellow, 1989–2004; *Sitara-i-Imtiaz*, 1994; Khwarizmi International Prize by Iranian Govt., 1997; Carlos J. Finau Prize for Microbiology, UNESCO, 1997; *Izaz-i-Kamal*, 1998; *Hilal-i-Imtiaz*, 2004; Distinguished Scientist of the Year 2004 by Pakistan Academy of Sciences.

**Fellowships/
Memberships:**

Fellow: Pakistan Academy of Medical Sciences, 1997; The Academy of Sciences for the Developing World (TWAS), 1993; National Academy of Medical Sciences, 1995; The Chemical Society of Pakistan, 2003; American Academy of Microbiology, 2004; Member: American Phytopathological Society, 2001; American Society for Biochemistry and Molecular Biology, 2001–2003; New York Academy of Sciences; 1991–1998; HUGO 1997; Asia Pacific IMBN, 2000.

Research/Areas:

Molecular Biology, Molecular Genetics.



Saleem, Hamid

FELLOW: Elected 2012

Born in Rawalpindi, Pakistan, on June 5, 1954

Professor, Dept. of Space Science, Institute of Space Technology (IST), Islamabad
Director (Honorary), Theoretical Research Institute, Pakistan Academy of Sciences (TRIPAS), Islamabad

Tel: 051-236 0265

Mob: 0308-505 8991

Email: saleemh@hotmail.com, Ncp-office@ncp.edu.pk

- Education:** Ph.D. (Plasma Physics), Quaid-i-Azam University, Islamabad (Research work done in Germany under DAAD Fellowship), 1996; M.Sc. (Nuclear Engineering), 1980; M.Sc. (Mathematics), 1978; M.A. (Urdu Literature), University of the Punjab Lahore, 1978; B.Sc. (Math, Phys) 1974.
- Positions Held:** Professor, Institute of Space Technology (IST), Islamabad, 2014-2021; Advisor to Member Science, Pakistan Atomic Energy Commission, (PAEC), 2014; Director General, National Center for Physics (NCP), Quaid-i-Azam University Campus, Islamabad, 2008-2014; Director, Theoretical Physics Department, NCP, 2008-2014; Adjunct Professor in Department of Physics, COMSATS Institute of Information Technology (CIIT), Islamabad; Adjunct Professor in Department of Mathematics, QAU, Islamabad; Adjunct Professor in Department of Physics, Pakistan Institute of Engineering and Applied Sciences (PIEAS), Nilore.
- Awards:** Pride of Performance by Govt. of Pakistan, 2013; PAS Gold Medal in Physics, by Pakistan Academy of Sciences, 2004; Tamgha-i-Imtiaz by Govt. of Pakistan, 2004; Gold Medal Performance Award, by PINSTECH, 2001; Dr. M. Raziuddin Siddiqi Prize for Young Scientists under 40 for Physics by Pakistan Academy of Sciences (PAS), 1993.
- Fellowships/Memberships:** Senior Associate at AS-ICTP, Trieste, Italy, 2001 to date; Post-doc Fellow, National Institute for Fusion Science, Toki, Japan, 1996-1998.
- Research Areas:** Plasma Physics and Astrophysics.



Shah, Muhammad Raza

FELLOW: Elected 2021

Born in Shabqdar, Charsadda, Pakistan, on February 18, 1976

Professor, International Center for Chemical and Biological Sciences
University of Karachi, Karachi

Tel: 021-99261717, 03008961511

Fax: (9221) 99261713

E-mail: raza_shahm@yahoo.com

- Education:** Ph.D. (Chemistry); Postdoc, Switzerland; Postdoc, Germany
- Positions Held:** Professor at International Center for Chemical and Biological Sciences, University of Karachi; GM Center for Bioequivalence Studies and Clinical Research
- Awards:** Civil award *Tamgha-i-Imtiaz* from President Islamic Republic of Pakistan; Top scientists award from KPK government in 2019; Atta ur Rahman Gold Medal from Pakistan Academy of Sciences; Salam Prize in Chemistry for Young Chemist in 2006; Dr. Raziuddin Gold Medal from Pakistan Academy of Sciences 2015; Selected TWAS (Third World Academy of Sciences) Young Affiliate 2010
- Fellowships/Memberships:** Fellow, International Union of Pure and Applied Chemistry; Fellow, Chemical Society of Pakistan; Fellow, Pakistan Academy of Sciences; Fellow, Islamic Academy of Sciences.
- Research Areas:** Nanotechnology and Supramolecular Chemistry mainly focusing on Drug Delivery system through nanomaterials



Shakoori, Abdul Rauf

FELLOW: Elected 1991

Born in Sialkot, India, on October 1, 1942

Distinguished National Professor & Professor Emeritus,
School of Biological Sciences, University of the Punjab, New Campus, Lahore
Honorary Director, Center of Biotechnology Research,
Shandong Academy of Agricultural Sciences, Jinan, Shandong, China

Tel: (92-42) 9923 0133; **Mob:** 0333 467 3255

Fax: (92-42) 9923 0980

Email: ashakbs@yahoo.com, arshakoori.sbs@pu.edu.pk

Education:

University of the Punjab, Lahore, Pakistan: B.Sc., 1960; M.Sc., 1962; University of Hohenheim, Stuttgart, West Germany: D.Sc. (Dr.rer.net.), 1972.

Positions Held:

Director, School of Biological Sciences, University of the Punjab, Lahore, 2002-2020; Honorary Director, Center of Biotechnology Research, Shandong Academy of Agricultural Sciences, Jinan, Shandong, China; Associate Secretary General, Pakistan Academy of Sciences, 2018-2021; Patron-in-Chief, Centre of Cancer Research, University of the Punjab, 2019 to date; University of the Punjab, Lahore: Professor Emeritus, 2009-2020; Distinguished National Professor, 2005 to date; Member, Board of Directors, Punjab Education Foundation (PEF), 2016-2020; Member, Executive Council, PEF, 2016-2020; Chairman, Apex Committee, Punjab Curriculum, and Textbook Board, 2015-2019; Meritorious Professor and Director, School of Biological Sciences, 2000-2019; Member, Board of Governors, Punjab Curriculum and Textbook Board, 2015-2018; Visiting Professor, King Saud University, Riyadh, KSA, 2013-2018; Visiting Professor: University of Massachusetts Medical Center, Worcester, USA, 1989-2012; Chairman, Department of Microbiology and Molecular Genetics, 2000-2002; Professor of Zoology, 1987-2002; Chairman, Department of Zoology, 1996-1999, 2002; Director, B.Sc. Hons. Program, 2000-2002; Associate Professor, 1979-1987; Assistant Professor, 1972-1979; Lecturer, 1963-1972; Co-Director, Center for Advanced Molecular Biology, 1984-1991; University of Marburg, Germany, 1996; Kings College, London, 1997; University of Essex, UK, 1999; Lecturer, Govt. Degree College, Jhelum, 1962-1963.

Awards:

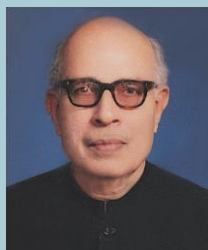
Declared amongst the best 2% researchers wide 2021, Included amongst the Top 100 Scientists of the world for the promotion of Science & Technology, honored by Government of Shandong Province China, 2019; Rated top most Productive Scientist in Biological Sciences in 2013 by PCST; ECO Award, 2012; Distinguished Scientist of the Year, 2011; Rated at first position among Zoologists of the country and the top five Biologists of the country by PCST in 2011; Tamgha-i-Imtiaz, Govt. of Pakistan, 1999; Fellowship of Royal Society, UK, 1998; Aizaz-i-Kamal, Govt. of Pakistan, 1996; Zoologist of the Year Award, 1997; Senior DAAD Fellowship, 1996; Award of Honor, Zoological Society of Pakistan, 1995; Senior Fulbright Fellowship, 1992-93; Scientist of the Year Award, Govt. of Pakistan, 1986, 1997; Cash Prize, National Book Council of Pakistan, 1988; Cash Prize and Commendation Certificate for Research Work, University of the Punjab, Lahore, 1979, 1983; Roll of Honor, Govt. College, Lahore, 1962.

Fellowships/ Memberships:

Fellow, The World Academy of Sciences for the Developing World (TWAS), 2004 to date; Fellow, Pakistan Academy of Sciences, 1991-to date; Fellow, Zoological Society of Pakistan, 1968-date; President, Zoological Society of Pakistan, 2002-2009, 2013-2016, 2017-2020; Secretary-General, Zoological Society of Pakistan, 1991, 2009-2012 and Pakistan Association for Experimental Biologists, 1979-1980; New York Academy of Sciences, 1993-1994; Chief Patron, Zoologists Association of Pakistan, 1987-1990; Chief Editor, Pakistan Journal of Zoology, 2016 to date; Editor, 1980-2016.

Research Areas:

Cell and Molecular Biology with a special interest in Gene Expression, Cancer Biology with particular reference to Metastasis. Biochemical Toxicology and Environmental Biotechnology,



Shami, Misbah-ud-Din

FELLOW: Elected 1982

Born in Jullundur City, India, on October 1, 1930

Founding Fellow, Islamic World Academy of Sciences

Fellow, Pakistan Academy of Sciences, 3-Constitution Avenue, G-5/2, Islamabad

Tel: (92-51) 920 4657

Mob: 0300-552 2955

Fax: (92-51) 920 6770

Email: Shami1930@yahoo.com

Education:

University of the Punjab, Lahore: B.Sc., 1950; M.Sc., 1952; Washington State University, USA: Ph.D., 1964.

Positions Held:

Nominee of HEC on the PAS Council, 2018-2020; Member, Advisory Committee on Education, Government of Pakistan, 2014-2016; Vice-President, Pakistan Academy of Sciences, 2011-2014; Associate Secretary General, Pakistan Academy of Sciences, 2009-2010; Treasurer, Pakistan Academy of Sciences, 2005-2008; Project Coordinator for the World Bank assisted Project on "Higher Education and Scientific Research", 1993-1996; Secretary General, Pakistan Academy of Sciences, 1984-88, 1992-96, 1998-2002; Advisor to the Chancellor, Hamdard University, Karachi, Pakistan, 1998 to date; President, Pakistan Academy of Sciences, 1988-92; Chairman, Pakistan Science Foundation, Ministry of Science & Technology, Government of Pakistan, 1980-1990; Whole-time Member, University Grants Commission, Islamabad, (Status of Vice Chancellor), 1976-1980; University of the Punjab, Lahore: Pro-Vice Chancellor, 1974-1976; Dean, Faculty of Science, Engineering and Pharmacy, 1973; Director, Institute of Chemical Engineering and Technology, 1972-1974; Professor, 1970-1974; Reader (Associate Professor), 1966-1970; Postdoctoral Fellowship by the Royal Society of UK at Imperial College of Science & Technology, London, 1969; Lecturer, 1952-1966.

Awards:

Lifetime Achievement Award by the Pakistan Institute of Chemical Engineers (PICH), Lahore, 2010; Pakistan Academy of Sciences Golden Jubilee Medal, 2002; Legend of Institute of Chemical Engineering & Technology, University of the Punjab, 2001; Medal by the Higher Council for Science and Technology, Jordan; *Sitara-i-Imtiaz* by President of Pakistan, 1990; First Pakistani to receive International UNESCO Kalinga Prize, 1990; Niels Bohr Medal by UNESCO, 1990; Pakistan Talent Forum National Award, 1987; Allama Iqbal Centenary Commemorative Medal, 1974.

**Fellowship/
Membership:**

Former President, Vice President, and Secretary-General, Pakistan Academy of Sciences; Founding Fellow and Vice-President, Islamic World Academy of Sciences; Fellow and Former President, Pakistan Institute of Chemical Engineers; Fellow and Former Vice-President, The Chemical Society of Pakistan; Member and Former President, Pakistan Association of Scientists and Scientific Professions; Life Member and Former President, Pakistan Association for the Advancement of Science; Member, Syndicates/Boards of Governors, Selection Boards, Finance & Planning Committees of several Public and Private Universities and R&D Organizations; First Pakistani Member, International Advisory Panel of East-West Center, Hawaii, USA; Member, Editorial Boards of six Scientific Journals.

Research Areas:

Inorganic Analytical Chemistry, Chemical Process Technology, and Chemical Crystallography.



Sharif, Muhammad

FELLOW: Elected 2010

Born in Pakistan, on June 15, 1962

Department of Mathematics, University of the Punjab, Quaid-e-Azam Campus, Lahore

Tel: (92-42) 9923 2026

Mob: 0333-423 1696

Email: msharif.math@pu.edu.pk

Education:

Ph.D. 1991; MPhil. 1987; M.Sc. 1985; Quaid-i-Azam University Islamabad; B.Sc., 1983; Islamia University Bahawalpur.

Positions Held:

Dean, Faculty of Science, University of the Punjab, 2019- to date; Tenured Professor, University of the Punjab, Lahore, 2012; Professor, 2005; Associate Professor, 2001-2005; Assistant Professor, 1994-2001; Research Officer, 1989-1992; Senior Research Assistant, 1988-1991; Junior Research Assistant, Quaid-i-Azam University Islamabad, 1985-1987.

Awards:

HEC Distinguished National Professor, 2010; Pakistan Academy of Sciences Gold Medal, 2002 and 2009; Best Research Paper Award, 2009 and 2015; Best University Teacher Award, 2008 and 2016; Tamgha-i-Imtiaz, 2008; Ijaz-i-Fazeelat, 2007; Dr. Raziuddin Siddiqi Prize, 2002; Research Productivity Award 2001-date.

**Fellowships/
Memberships:**

Post-Doctoral Fellowship, 2000 and 2003; Dr. Raziuddin Siddiqi Research Fellowship, 1987; Life Member, International Society of General Relativity and Gravitation.

Research/Areas:

Gravitational Theory Astrophysics and Cosmology.



Sheikh, Muhammad Akram

FELLOW: Elected 2012

Born in Phagwara, India, on June 15, 1943

Senior Advisor, National University of Sciences & Technology (NUST), Islamabad, Founder, Co-Chair & Distinguished Senior Fellow, Global Think Tank Network (GTTN) & Founding Co-Chair, Corporate Advisory Council (CAC), NUST, Islamabad
Director, Allied Bank Ltd, Tricon Boston Consulting (Pvt) Ltd (Sapphire Group), Quality Schools Foundation

Tel: 051-225 5061

Education:

University of Engineering and Technology, Lahore: B.Sc. Engg. (Hons), 1962; SEATO Graduate School of Engineering, UK: Post Graduate Certificate in Soil Mechanics, 1963; The University of Leeds, UK: M.Sc. (Structural Engg), 1965; The University of Calgary, Alberta, Canada: Ph.D., (Structural Engg), 1967.

Positions Held:

Professor Emeritus, NUST; Advisor to the Army on Planning & Development in Nation Building & Welfare Activities, Islamabad, 2009-2015; Advisor, International Steels Ltd., 2008-2016; Federal Minister / Deputy Chairman, Planning Commission of Pakistan, 2004-2008; Executive Director, Higher Education Commission, 2003-2004; Federal Secretary, Ministry of Industries & Production, 2001-2003; Chairman / CEO, Engineering Development Board, 2002-2004; Chairman, Pakistan Engineering Council, 2002-2008; Federal Secretary, Ministry of Water & Power, 2000-2001; Federal Secretary, Ministry of Communication, 1998-2000; Vice Chairman / Chief Executive, Engineering Development Board, 1995-2002; Chairman, State Engineering Corporation, 1991-1998; Chief Executive, Special Technical Cell/Experts Advisory Cell, 1989-1991; Managing Director, Pakistan Steels, 1985-1989; Managing Director / Chief Executive, Heavy Foundry & Forge Engineering Ltd., 1974-1984; General Manager/ Chief Engineer, PIDC, 1968-1974; Research Associate / Lecturer, McGill University, Montreal, Canada, 1967-1968; Post Graduate Fellow/ Teaching Assistant, 1965-1967; Design Engineer, WAPDA, Lahore, 1962-1964.

Awards:

Gold Medal in B.Sc. Engineering, UET Lahore; Commonwealth Scholar in M.Sc., The University of Leeds, UK; The Institution of Engineers Pakistan Life Time Achievement Award, 2007; Public Service Award of *Hilal-i-Imtiaz*, Government of Pakistan, 2005; Ph.D Degree Honoris Causa by UET, Lahore, 2010.

Fellowships/ Memberships:

Member / Fellow, Institute of Engineers, Pakistan; Member / Fellow, Pakistan Engineering Council; Distinguished Senior Fellow, NUST (GTTN).

Research Areas:

Science and Technology-driven Economic Development; Engineering Goods Manufacturing; Management of Public Sector Large Organizations; Synthesizing Diverse and Conflicting National Requirement to Formulate Long-term Holistic & Integrated Strategic Plans, National Vision and Public Sector Policies; Co-Founder of China-Pakistan Trade, Transport, Energy and Industrial Corridor (renamed CPEC); Rapid & Sustainable Social, Economic, Strategic and Ethical Development using Knowledge Inputs.



Shinwari, Zabta Khan

FELLOW: Elected 2008

Born in Kohat, Pakistan, on March 3, 1959

UNESCO Laureate (Avicenna Gold Medalist); Former Vice-Chair of The World Commission on the Ethics of Scientific Knowledge and Technology (COMEST)-UNESCO
Professor Emeritus, Quaid-i-Azam University, Islamabad

Tel: 92-512612970

Email: shinwari2008@gmail.com, shinwari@qau.edu.pk

Education:

University of Peshawar: BSc, and MSc 1980 & 1983; Quaid-i-Azam University Islamabad, Pakistan, M. Phil, 1986; Kyoto University Japan, PhD, 1994, Post Docs (JIRCAS-Japan) 1996-1998, 2001; STA-Fellow (Japan) July-Sep. 1999, USA leadership (2006)

Positions Held:

Professor Emeritus Quaid-i-Azam University, 2020 to date; Vice Chancellor, Qarshi University, Lahore 2018 to 2019; Quaid-i-Azam University Islamabad Tenured Professor & Chairman Biotechnology 2009 to 2018; President National Council for Tibb, 2015-2020; Secretary General, Pakistan Academy of Sciences, 2015-2017; Chief Executive Qarshi Research International/ Vice Chancellor/Project Director Qarshi University Lahore 2006-2009; Vice Chancellor/Project Director (Additional charge) University of Science and Technology Bannu (US&TB) KP Pakistan 2005-2006; Vice Chancellor Kohat University Science and Technology (KUST) KP Pakistan 2004-2006; Programme Leader COMSTECH-PTCL Frontier Technologies Research Center (CPC) 2003-2004; Technical Coordinator Applied Ethnobotany Project WWF Pakistan 2001-2003; Senior Scientific Officer NARC Islamabad 1995-2001; Research Associate Pakistan Museum of Natural History Islamabad 1985-1995; Research Officer Herbarium Quaid-i-Azam University Islamabad 1983-1985.

Awards:

National Civil Awarded, Sitara-e-Imtiaz, 2018; "Tamgha-e-Imtiaz" 2011; Distinguished Scientists Award by Chinese Academy of Sciences, 2019-2020; Best University Teacher Award, 2012 (Higher Education Commission-Pakistan); Declared number one biologist by PCST in 2014, Research Productivity Award in Category "A"; UNESCO Laureate (Avicenna Gold Medalist for Ethics in Science: 2015; Cash Prize of UNESCO award donated to Pakistan Academy of Sciences for establishing Prof. Zabta K. Shinwari Gold Medal in Biotechnology for Scientists under 50. Declared among top 2% of the world whose published research manuscripts have accelerated progress in their respective fields and influenced the productivity of other researchers' work as well conducted by Stanford university, USA Nov. 2020 and 2021.

Fellowships/ Memberships:

Vice Chair of The World Commission on the Ethics of Scientific Knowledge and Technology (COMEST)-UNESCO 2016-2021; Fellow, Islamic World Academy of Sciences since 2016; Treasurer Association of Academies and Societies of Sciences in Asia (AASSA) since 2016; Focal Person of Alliance of International Science Organizations (ANSO-HO, China), 2016- 2022; Member Board of the Authority, Islamabad Health Regulation. 2019-2022; Member Search Committee to appoint Chairman & Members Provincial Public Service Commission, KP, 2018-2021; Member Evaluation Enlistment Committee DRAP, 2018 to date; President Pakistan Botanical Society, 2011-12; Member Board of Governors WWF Pakistan, 2011- 2014; Member of the Governing Council of the AQ Khan Institute of Biotechnology and Genetic Engineering (KIBGE), 2010 to date; Member Selection Board (KIBGE) Karachi University; Fed Urdu Univ of Arts Science & Technology; Member IAP- Biosecurity Working Group (BWG) 2012-to date; Member Senate Swat University & SBBU-Shringle, KP, 2013-2016 & 2015- 2018 respectively; President South Asian Federation of Japanese Universities Alumni Associations (SAFJUAA), 2011-2014; President & Vice President, Pakistan Botanical Society, 2011-12 & 2013-to date; Elected Member Steering committee of WHO-Eastern Mediterranean Health Genomics and Biotechnology Network (EMHGBN), 2014-2018; Member Advisory Board Ethnobotanical Society of Nepal; Member IUCN Medicinal Plant Specialist Group Society for Conservation Biology; Editor Pakistan Journal of Botany. Director Asian Council of Science Editors (ACSE) 2019-2021; Vice President ACSE 2021-2022. Member of Inter-Academy Partnership (IAP) Open Science Working Group to produce a synthesis/summary paper to submit to UNESCO (May 2020).

Research Areas:

Bioethics & Dual-Use Education, Molecular Systematics, Agriculture Biotechnology, Medicinal Plants Ecology, Sustainable Development.



Siddiqui, Bina Shaheen

FELLOW: Elected 1997

Born in Allahabad, India, on February 2, 1948

HEJ Research Institute of Chemistry,
ICCBS, University of Karachi, Karachi

Tel: (Off) 021-9926 1716

Mob: 0300-820 6366

Fax: 021-3481 9018, 3481 9019

Email: sidiqui_bina@yahoo.com

Education:

University of Karachi, Karachi, Pakistan: B.Sc., 1967; M.Sc., 1969; M.Phil., 1978, Ph.D., 1980; D.Sc., 2001.

Positions Held:

HEJ Research Institute of Chemistry, University of Karachi: Director (Acting) 1999-2000 to date, Co-Director, 1999-2000; Professor, 1996 to date; Associate Professor, 1990-1996.

Awards:

Dr. Abdus Salam Prize in Chemistry 1986; *Nishan-e-Azmat-e-Ilm* Plaque, University of Karachi, 1989; *Nishan-e-Azmat-e-Danish* Plaque, University of Karachi, 1993; *Nishan-e-Danish* Plaque, University of Karachi, 1998; First Prize of the National Book Foundation 1997; Star Woman of the Year 1997 Award and Gold Medal by Star Girls and Women's Foundation; *Tamghai-Imtiaz*, Government of Pakistan, 2000; Khwarizmi Award by the President of Islamic Republic of Iran, 2001; *Sitara-i-Imtiaz* by the Govt. of Pakistan, 2004; Distinguished National Professor (HEC). Life Time Academic Award by HEC of Pakistan, 2011.

Fellowships/

Memberships:

Member, Scientific Society of Pakistan, 1970; Full Member of the Third World Organization for Women in Science, (TWOWS), 1989; Fellow, Academy of Sciences for the Developing World (TWAS), 1989; Fellow of the Pakistan Academy of Sciences, 1998; Member, Membership Committee of TWAS for Chemistry, 1999; Life Member, Chemical Society of Pakistan, 1988; Fellow of the Chemical Society of Pakistan, 2000; Member, American Chemical Society, 2005.

Research/Areas:

Natural Products Chemistry with Special Focus on Constituents of Medicinal Plants Having Medical, Antibacterial and Pesticidal Applications.



Wasay, Mohammad

FELLOW: Elected 2017

Professor, Department of Medicine
Aga Khan University, Stadium Road, Karachi 74800, Pakistan

Tel: 9221 4930051(office), 92333 2234688(mobile)

Email: mohammad.wasay@aku.edu

Education:

Medical School: Dow Medical College, Karachi, Pakistan; Degree: M.B.B.S. (July 1989); Undergraduate: Superior Science College, Karachi, Pakistan. Degree: H.S.C. (1981); High School: Govt. Boys Secondary School, Saudabad, Karachi, Pakistan. Degree: S.S.C. (1979)

Positions Held:

Alicharan endowed Professor of Neurology, Department of Medicine, Aga Khan University, Karachi, Chair, Seed grants committee, AKU, COMSTech (OIC) distinguished scholar, Secretary General, Environmental neurology specialty group, World federation of Neurology, Member, Global policy committee, World stroke organization, Fellow, Pakistan Academy of Sciences; Member, Prime ministers Task force on science and technology, President, Neurology awareness and research Foundation, Past president, Pakistan Society of Neurology, Past Director, World Stroke Organization, Editor, Pakistan Journal of Neurological Sciences, Editor in chief, Jahane Aasab magazine; Professor, Department of Medicine, The Aga Khan University, Karachi; July 1, 2013 – to date; Associate Professor, Department of Medicine, The Aga Khan University, Karachi; January 1, 2006 – June 2013; Assistant Professor, Department of Medicine, The Aga Khan University, Karachi December 1, 1999 – December 31, 2005.

Awards:

Teachers Recognition Award; American Academy of Neurology; 2006, Advocacy leader of the year; American Academy of Neurology; 2005, **National**; Gold Medal (Health Sciences); Pakistan Academy of Sciences; 2015, Junior Award+ Gold medal; Pakistan Academy of Medical Sciences; 2003, Distinguished Teacher Award; Pakistan Society of Neurology; 2005.

Fellowships/

Memberships:

Fellow, Pakistan Academy of Sciences; 2017, Fellow, Pakistan Academy of Medical sciences; 2015, Fellow, Royal College of Physicians (FRCP) UK; 2005; Fellow, American Academy of Neurology (FAAN); 2007.

Research Areas:

Stroke, CNS infections, Multiple sclerosis.



Yasinzai, Masoom

FELLOW: Elected 2011

Born in Quetta, Pakistan on Oct 1, 1958

Rector, International Islamic University, Islamabad

Tel: 051-925 8067

Mob: 0300-386 4565

Email: rector@iiu.edu.pk

Education:

University of Balochistan: B.Sc., 1978; University of Hull, UK; Ph.D. (Anal. Biochemistry), 1985.

Positions Held:

Lecturer (Chemistry), University of Balochistan 1980-1985; Research Scholar, 1982-1985, University of Hull, UK; Demonstrator, 1983-1985 University of Hull, UK; Asstt. Professor, 1986-1993, Institute of Biochemistry, University of Balochistan; Post Doc Fellow 1987-1988, Perugia Med School, Italy; Visiting Scientist 1992-1993, Liverpool School of Tropical Medicine, UK; Associate Professor, 1993-1996, Institute of Biochemistry, University of Balochistan; Fulbright Fellow, 1993-1994, Chicago Medical College School, USA; Professor, 1996 to date, Institute of Biochemistry, University of Balochistan; FAO Consultant for Establishment of Feed labs in Balochistan, 1998; Director, Institute of Biochemistry, 2003-2008; Co-coordinator Research (Science)/ Dean Research, University of Balochistan, 2004-2008; Vice Chancellor, University of Balochistan, 2008-2010; Vice Chancellor, Quaid-i-Azam University, 2010-2014; Rector, International Islamic University, Islamabad, 2012 to date.

Awards:

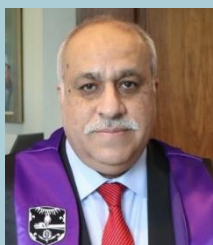
First Position in Masters degree in all faculties of the University of Balochistan, 1980; Quaid-i-Azam scholarship for Ph.D. studies abroad, 1982; ORS Award, Britain, 1983-1985; IUB Award, on occasion of the 14th International Congress of Biochemistry, Prague, 1988; ISESCO Award, 1990; Gold Medal by PWA, for contribution in Sciences & Technology, 1991; Fulbright Award, 1992; Ibn- Al-Hythem Award in Biological Sciences, 1995; Scientists of the year 1998; Gold Medal, Raziuddin Prize in Chemistry, Year 1998; *Izaz-i-Fzeelat*, Gold Medal by the President of Pakistan, 1999; President, Environmental Club, University of Balochistan, 1995-2004; HEC Best Teacher Award & Prize, 2002; *Sitara-i-Imtiaz*, 2009.

**Fellowships/
Memberships:**

Fellow, of Pakistan Academy of Medical Sciences, 2012; Fellow, Pakistan Chemical Society, 2004; Member, Board of Trustees, Pakistan Science Foundation; Chairman, Institutional Ethical Committee; Member, University Linkages Committee; President Environmental Club, University of Balochistan; Member Senate, Karakoram International University, Gilgit; Member, Pakistan Atomic Energy Council; Member, Chemical & Biological Societies, Pakistan; Member, Pakistan Council for Sciences & Technology; Member, Islamabad Policy Research Institute Board.

Research/Areas:

Biotechnology; Clinical Biochemistry; Biochemical Parasitology; Chemotherapy & Leishmaniasis.



Yusuf, Mohammad Osama

FELLOW: Elected 2021

Born in Lahore, on November 28, 1959

Chief Consultant

The Allergy and Asthma Institute, Islamabad, Pakistan.

Home address: H. No. 275, Gomal Road, Sector E-7, Islamabad, Pakistan.

Tel: 92-(0)51-265 4445 / 92 (0)300 856 1115.

E-mail: allergygp@gmail.com

Education:

MBBS (Pb); BSc (Med Sc); MCPS (Pathology); M.Sc. (Immunology-UK); PGT Allergy (Birmingham, UK); PhD (Clinical Sciences); FRCP (London, UK).

Positions Held:

Chief Consultant, The Allergy and Asthma Institute, Pakistan; Chief Consultant, Developing Health; National Representative, WHO-Global Alliance on Respiratory Diseases; Collaborator, RESPIRE, University of Edinburgh, Edinburgh, UK; Principal Investigator, National Institute of Health Research, UK Government.

**Fellowships/
Memberships:**

Fellow, American College of Allergy, Asthma, Immunology; Fellow, American Academy of Allergy, Asthma, Immunology; Fellow, College of Pathologists of Pakistan; Fellow, Royal Society of Medicine (UK); Fellow, Royal College of Physicians (London, UK).

Research/Areas:

Allergy; Asthma and Chronic Respiratory Diseases; COVID-19; AIDS; Immunotherapy; Public Health; Immune response to infections.



Zubairy, M. Suhail

FELLOW: Elected 1995

Born in Lahore, Pakistan on October 19, 1952

Department of Physics, Texas A&M University,
College Station, Texas-77843, USA

Tel: (Off) +1-979-862-4047

Email: zubairy@tamu.edu

Education:

Edwards College, Peshawar, Pakistan: B.Sc., 1967-1971; Quaid-i-Azam University, Pakistan: M.Sc. (Physics), 1971-1974; University of Rochester, New York, USA: Ph.D. (Physics), 1974-78.

Positions Held:

Munnerlyn-Heep Chair in Quantum Optics and University Distinguished Professor of Physics, Texas A&M University, USA, 2004 to date; Quaid-i-Azam University, Islamabad: Chairman, Department of Electronics, 1988 to 1998, Professor, 1992-2004; Associate Professor, 1985-1992; Assistant Professor, 1984-1985.

Awards:

Willis E. Lamb Award for Laser Science and Quantum Optics, 2014; George H. W. Bush Excellence Award in International Research, 2011; Humboldt Research Prize, 2007; Khwarizmi Award, President of Iran, 2001; *Hilal-i-Imtiaz*, Govt. of Pakistan, 2000; COMSTECH Award for Physics, Organization of Islamic Countries (OIC), 1999; *Sitara-i-Imtiaz*, Govt. of Pakistan, 1993; Gold Medal, Pakistan Academy of Sciences, 1989; Salam Prize for Physics 1986.

**Fellowships/
Memberships:**

Fellow, American Physical Society, 2006; Fellow, Optical Society of America, 1988; Rush Rhees Fellowship, University of Rochester, USA, 1974-1977.

Research/Areas:

Quantum Electronics and Laser Physics

10. ADDITIONAL FELLOWS (PROFILES NOT PROVIDED)

Shah, Hassan Amir	Elected 2018
Bhatti, Arshad Saleem	Elected 2019
Nadeem, Sohail	Elected 2019

11. DECEASED FELLOWS OF THE ACADEMY

Prof. M. Afzal Hussain	Elected 1953
Dr. Nazir Ahmad	Elected 1953
Prof. Dr. Bashir Ahmad	Elected 1953
Prof. Dr. Salimuzzaman Siddiqui	Elected 1953
Prof. Dr. M. Raziuddin Siddiqi	Elected 1953
Dr. M. Sharif	Elected 1953
Dr. Hamid Khan Bhatti	Elected 1953
Dr. M. Ishaque	Elected 1953
Prof. Dr. Abdus Salam (Nobel Laureate)	Elected 1954
Ch. Muhammad Afzal	Elected 1954
Dr. Taskhir Ahmad	Elected 1954
Prof. Dr. M. Abdus Salam	Elected 1954
Prof. Dr. Afzal Hussain Qadri	Elected 1956
Prof. Dr. Karimullah	Elected 1956
Col. M. K. Afridi	Elected 1956
Dr. S. Hedayatullah	Elected 1956
Prof. Qazi M. Aslam	Elected 1957
Prof. Dr. Rafat Hussain Siddiqi	Elected 1957
Dr. Nazir Ahmad (Fisheries)	Elected 1958
Prof. Dr. Mukarram Hussain Khundkar	Elected 1959
Prof. Dr. M. Ziauddin	Elected 1959
Dr. Atiqur Rahman Ansari	Elected 1959
Prof. Dr. Qazi Saeeduddin Ahmad	Elected 1961
Prof. Dr. A. G. Asghar	Elected 1964
Prof. Dr. M.M. Qurashi	Elected 1964
Dr. Amir-ul-Islam	Elected 1967
Dr. Ghulamullah Chaudhry	Elected 1967
Prof. Dr. M. A. Azim	Elected 1967
Dr. M. A. Ghani	Elected 1967



Prof. Dr. M.I.D. Chughtai	Elected 1967
Prof. Dr. Majeed Ahmad	Elected 1968
Dr. Nazir Ahmad (Irrigation)	Elected 1968
Prof. Dr. Rafi Mohammad Choudhri	Elected 1968
Prof. Dr. Badruddin	Elected 1968
Dr. S. A. Warsi	Elected 1970
Prof. Dr. Muzaffer Ahmad	Elected 1970
Prof. Dr. Shafqat Hussain Siddiqui	Elected 1971
Dr. Ahmad Kamal	Elected 1971
Prof. Dr. Z. A. Hashmi	Elected 1972
Prof. Dr. Kh. Salahuddin	Elected 1972
Dr. M. K. Bhatti	Elected 1972
Prof. Dr. M. Aslam Khan	Elected 1972
Prof. Dr. M. A. Kazi	Elected 1972
Prof. Dr. Sultan Ahmad	Elected 1974
Prof. Dr. Ahmad Mohiuddin	Elected 1974
Prof. Dr. Qamar-ud-Din Khan Ghorri	Elected 1974
Prof. Dr. Riaz Ali Shah	Elected 1974
Prof. Dr. M. Aslam	Elected 1974
Prof. Dr. Marghoob Ali	Elected 1976
Mr. A. Hamid Chotani	Elected 1976
Dr. Yusuf Ahmad	Elected 1976
Prof. Dr. Riazuddin	Elected 1976
Prof. Dr. A. G. Kausar	Elected 1977
Dr. Saleh M. Quraishy	Elected 1977
Prof. Dr. G. M. Khattak	Elected 1977
Mr. Tajammal Hashmi	Elected 1977
Dr. Heshamul Haque	Elected 1978
Dr. Fazal Ahmed Faruqi	Elected 1978
Prof. Dr. Khairat Ibne Rasa	Elected 1979
Dr. S. Mahdi Hassan	Elected 1980
Prof. Dr. Mrs. Nasima Trimizi	Elected 1980
Prof. Dr. Muhammad Ataur Rahman	Elected 1980
Prof. Dr. Syed Irtifaq Ali	Elected 1982
Dr. M.I. Burney	Elected 1983
Prof. Dr. Rashid Ahmad Khan Tahirkheli	Elected 1983
Prof. Dr. Ishfaq Ahmad	Elected 1983
Dr. F. H. Shah	Elected 1984

Prof. Dr. Naeem Ahmed Khan	Elected 1986
Dr. Mahbub Ali	Elected 1988
Dr. Abdul Quadeer Khan	Elected 1988
Prof. Dr. Shafiq Ahmed Khan	Elected 1989
Dr. Abdul Hafiz	Elected 1990
Prof. Dr. Iftikhar A. Malik	Elected 1990
Prof. Dr. Muhammad Zafar Iqbal	Elected 1990
Dr. Mushtaq Ahmad	Elected 1991
Prof. Dr. Viqar Uddin Ahmad	Elected 1991
Dr. Agha Ikram Mohyuddin	Elected 1992
Prof. Dr. N. M. Awan	Elected 1992
Hafiz Hakim Muhammed Said	Elected 1992
Prof. Dr. Abdul Ghaffar	Elected 1992
Dr. Khushnood A. Siddiqui	Elected 1994
Prof. Dr. Iqbal Hussain Qureshi	Elected 1994
Prof. Dr. Zafar H. Zaidi	Elected 1995
Prof. Dr. Nasir Ud Din	Elected 1996
Prof. Dr. Abdul Raouf	Elected 1997
Dr. Ijaz Haider	Elected 1997
Prof. Dr. M.A. Hafeez	Elected 1999
Prof. Dr. Qasim Mehdi	Elected 1999
Lt. Gen. Muhammad Saleem	Elected 1999
Dr. A. Sattar	Elected 2000
Dr. S. Moosa Hasany	Elected 2000
Prof. Dr. Ajmal Khan	Elected 2001
Prof. Dr. Kamaluddin Ahmad	Elected 2002
Prof. Dr. Mustafa Shameel	Elected 2003
Prof. Dr. Shahzad Ahmad Mufti	Elected 2003
Prof. Dr. Muhammad Ashfaq	Elected 2006
Prof. Dr. S. Arshad Saeed	Elected 2007
Prof. Dr. Muhammad Arshad	Elected 2015
Prof. Dr. Habib Ahmad	Elected 2019
Prof. Dr. Abdul Hameed	Elected 2020



12. PROFILES OF FOREIGN FELLOWS

**Pakistan Academy of Sciences
2022**



Akhtar, Muhammad

FOREIGN FELLOW: Elected 2000

Born in Batala, Punjab, India, on February 23, 1933

Emeritus Professor of Biochemistry, University of Southampton, UK;
Distinguished National Professor (Previously) (Director General),
School of Biological Sciences,
University of the Punjab, Lahore, Pakistan

Tel: (92-42) 9923 0960

Email: M.Akhtar@soton.ac.uk; ma3@soton.ac.uk

Education:

Government College, University of the Punjab: B.Sc., 1952; M.Sc., 1954; Imperial College, University of London, UK: Ph.D., DIC, 1959.

Positions Held:

Emeritus Professor of Biochemistry, University of Southampton, UK, to date; Currently, Distinguished National Professor & Director General, School of Biological Sciences, University of the Punjab, Lahore; Director, SERC Molecular Recognition Center, 1990-1994; Chairman, Institute of Biomolecular Sciences, 1989-1990; Chairman, School of Biochemical & Physical Sciences, 1983-1987; Head, Department of Biochemistry, 1978-1983; Professor of Biochemistry, 1973-1998; Reader, Department of Biochemistry, 1968-1973; Senior Lecturer, Department of Biochemistry, 1966-1968; Lecturer, Department of Biochemistry, 1963-1966; Research Scientist, Research Institute, Cambridge, MA, USA, 1959-63.

Awards:

Gold Medal, University of the Punjab, 1954; Fellow of Royal Society (FRS), UK, 1980; *Sitara-i-Imtiaz*, Government of Pakistan, 1981; Flintoff Medal, Royal Society of Chemistry, 1993; Hon. DSc, University of Karachi, 2002

Fellowships/ Memberships:

Fellow, Royal Society, UK, 1980; Member, Council of the Royal Society, 1983-1985; Founding Fellow, The Academy of Sciences for the Developing World (TWAS), 1984; Treasurer & Member, TWAS, 1992-1997; TWAS Medal Lecturer, 1996; Honorary D.Sc. degree, University of Karachi, 2000; Honorary Fellow, University College London (2010).

Research/Areas:

Biochemistry with special contributions to understanding of mechanisms of action of a large number of enzymes involved in biosynthesis of sterols, sex hormones, haem formation, elaboration of chlorophylls; Use of recombinant DNA technology for study of neomyosin synthesis; Binding of vitamin A aldehyde to rhodopsin.



Bai, Chunli

FOREIGN FELLOW: Elected 2011

Born in Dandong, Liaoning Province, China in 1953

President, Alliance of International Science Organizations (ANSO)
52 Sanlihe Road, Beijing 100864, China

Tel: +86-10-68597606; **Fax:** +86-10-68526316

E-mail: yqjiang@cashq.ac.cn

- Education:** Department of Chemistry, Peking University, Beijing, China: undergraduate student, 1978; Institute of Chemistry, Chinese Academy of Sciences (CAS), Beijing, China: M.S., 1981; Ph.D., 1985.
- Positions Held:** President, Alliance of International Science Organizations (ANSO), 2018 to date; President, CAS, 2011 to 2021; Immediate Past President, the World Academy of Sciences for the Advancement of Science in Developing Countries (TWAS), 2019 to date; President, TWAS, 2012 to 2018; Executive Vice President, CAS, 2004-2011; Vice President, CAS, 1996-2004; President, University of Chinese Academy of Sciences, 2001-2014; Director, National Center for Nanosciences and Technology, China, 2003-2008; Professor and Deputy Director, Institute of Chemistry, CAS, 1992-1996; Director of Youth Laboratory of the Nanometer-Scale Science and Technology, 1992-1996; Visiting Professor, Institute for Materials Research, Tohoku University, Japan, 1991-1992; Professor, Institute of Chemistry, CAS, 1989; Associate Professor, Institute of Chemistry, CAS, 1987-1989; Research Associate, California Institute of Technology, Pasadena, USA, 1982-1985.
- Awards:** 2nd Place CAS Science and Technology Advancements Award, 1989; Young Scientist Award, CAS 1989; 2nd Place CAS National Science and Technology Advancements Award (State Council), 1990; National Level Expert with Outstanding Contributions (State Council), 1990; China Young Science and Technology Prize, China Association for Science and Technology, 1990; Ph.D. Recipient with Outstanding Contributions (State Council and State Education Commission), 1991; 1st Place CAS Science and Technology Advancement Award, 1991; 3rd Place CAS Science and Technology Advancement Award, 1992; 2nd Place CAS Natural Science Award, 1994; China Young Scientist Award, 1994; 2nd Place PLA Science and Technology Advancements Awards, 1995; "Outstanding Young Scholars", Hong Kong Qiu Shi Sci & Tech. Foundation, 1995; 2nd Place CAS Natural Science Award, 1997; 2nd Place Beijing Science and Technology Advancement Award, 1998; 2nd place Science and Technology Advancement Award (State Education Commission), 1998; 2nd Place PLA Science and Technology Advancement Award, 1999; International Medal, Society of Chemical Industry, London, UK, 2001; 1st Place Yunnan Science and Technology Advancement Award, 2001; China's 1st Top Ten Pioneers of Science and Technology 2002; 1st Place Beijing Science and Technology Advancement Award, 2006; UNESCO First Medal "Contributions to Development of Nanosciences and Nanotechnology, 2010; 3rd "Chemistry Contribution Prize" of Chinese Chemical Society-China Petroleum & Chemical Cooperation, 2012.
- Fellowships/ Memberships:** Member, CAS, 1997; Fellow, TWAS, 1997; Bureau Member, International Union of Pure and Applied Chemistry (IUPAC), 2001-2009; Member, Executive Committee of IUPAC, 2003-2009; Foreign Member, Mongolian National Academy of Sciences, 2005; Honorary Member, World Innovation Foundation, 2006; Honorary Fellow, The Royal Society of Chemistry (FRSC), UK, 2007; Foreign Member, Russian Academy of Sciences, 2008; Honorary Fellow, The Indian Academy of Sciences, 2008; Honorary Academic Fellow, Roskilde University, Denmark 2008; Honorary Fellow, The Chemical Research Society of India, 2009; Member, The German National Academy of Science and Engineering, 2011; Foreign Member, Royal Danish Academy of Sciences and Letters, 2012; Corresponding Fellow, Australian Academy of Science, 2013; Honorary CSJ Member, 2013.
- Research Areas:** Structure and properties of polymer catalysts; X-ray crystallography of organic compounds; Molecular mechanics and EXAFS research on electro-conducting polymers; Scanning tunneling microscopy; Molecular nanostructures; Self-assembly, Novel nanomaterials; Molecular nanodevices; Single molecule detection.



Basha, Fatima Z.

FOREIGN FELLOW: Elected 2013

Born in Hassan, India, on November 6, 1950

Current Position: Foreign Faculty Professor, H.E.J. Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, 2006 – present.

Tel: +9926 1767; **Cell:** 0341 227 9107

Email: bashafz@gmail.com

Education:

Post-Doctoral Research, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1978-81; Ph.D.: Synthetic Organic Chemistry, Fordham University, USA, 1977; M.Sc.: University of Karachi, B.Sc.: St. Joseph's College, Karachi; Research Fellowship, University of Karachi, Pakistan, 1970-72; Presidential Scholarship from Fordham University, NY, 1972-1973; Research and Teaching Fellowship from Fordham University, NY, 1973-77; Post-Doctoral Research, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1978-81.

Positions Held:

Senior Group Leader, Associate Research Fellow, Volwiler Society, Drug Discovery Research, ABBOTT LABORATORIES, USA, November, 1998 to June, 2006; Senior Group Leader, Associate Research Fellow, Volwiler Society, Infectious Diseases Research, ABBOTT LABORATORIES, USA, December, 1998 to November, 2001; Senior Group Leader, Associate Research Fellow, Volwiler Society, Immunoscience Research, ABBOTT LABORATORIES, USA, May, 1998 to November, 1998; Senior Group Leader, Associate Research Fellow, Volwiler Society, Infectious Diseases Research, ABBOTT LABORATORIES, USA, March, 1997 to April, 1998; Senior Group Leader, Associate Research Fellow, Volwiler Society, Neuroscience Research, ABBOTT LABORATORIES, USA, October, 1994 to March, 1997; Senior Group Leader, Associate Research Fellow, Volwiler Society, Immunoscience Research, ABBOTT LABORATORIES, USA, October, 1993 to October, 1994; Senior Group Leader, Associate Research Fellow, Volwiler Society, Cardiovascular Research, ABBOTT LABORATORIES, USA, October, 1992 to September, 1993; Associate Research Fellow, Volwiler Society, Cardiovascular Research, ABBOTT LABORATORIES, USA, December, 1991 to September 1992; Research Investigator, Cardiovascular Research, ABBOTT LABORATORIES, USA, January 1989 to January 1992; Senior Research Scientist, Cardiovascular Research, ABBOTT LABORATORIES, USA, September 1984 to January, 1988; Research Scientist, Cardiovascular Research, ABBOTT LABORATORIES, USA, June 1981 to September 1984.

Awards:

Tamgha-i-Imtiaz, by Government of Pakistan.

Fellowships/ Memberships

Member of Phi Lambda Epsilon Honorary Chemical Society; Member of American Chemical Society and Sigma Xi; Member of Volwiler Society, Abbott Laboratories.

Research/Areas:

Synthetic Organic Chemistry



Cao, Jinde

FOREIGN FELLOW: Elected 2016

Born in Wuhu, Anhui Province, China, on November 8, 1963

Dean, School of Mathematics, Southeast University
No. 2, SEU Road, Jiangning District, Nanjing 211189, China

Tel: (Off) +86-25-52090588

Mob: +86-13809034558

Email: jdcao@seu.edu.cn; jdcaoseu@gmail.com

Education:

Anhui Normal University, China: B.Sc., 1986; Yunnan University, China: M.Sc., 1989; Sichuan University, China: Ph.D., 1998; The Chinese University of Hong Kong, China: Postdoc., 2002.

Positions Held:

Endowed Chair Professor, Southeast University, China, 2017 to date; Distinguished Professor, Southeast University, China, 2007 to date; Dean, School of Mathematics, Southeast University, China, 2014 to date; Director, The Jiangsu Provincial Key Laboratory of Networked Collective Intelligence, China, 2017 to date; Director, Research Center for Complex Systems and Network Sciences, Southeast University, China, 2011 to date; Professor, Yunnan University, China, 1996-2000; Professor, Southeast University, China, 2000 to date.

Awards:

National Innovation Award of China, 2017; The State Council Special Allowance, China, 2016; Thomson Reuters China Citation Laureates Award, Thomson Reuters, 2014; Highly Cited Researcher, Thomson Reuters/ Clarivate Analytics, 2014-2021; Most Cited Chinese Researcher, Elsevier, 2015-2021; First Class Science and Technology Award, Jiangsu Province of China, 2011; Thomson Reuters Research Fronts Award, 2008; Second Class Natural Science Award, Ministry of Education of China, 2007. Obada Prize, Natural Sciences Publishing Cor., 2019; Gold medal of Russian Academy of Natural Sciences, 2020.

Fellowships/ Memberships:

Fellow, IEEE, 2015; Member, Academia Europaea (Academy of Europe), 2016; Fellow, Pakistan Academy of Sciences, 2016; Member, European Academy of Sciences and Arts, 2018; Academician, The International Academy for Systems and Cybernetic Sciences, 2019; Fellow, African Academy of Sciences, 2019; Member, Russian Academy of Engineering, 2020; Member, Russian Academy of Natural Sciences, 2020; Member, Lithuanian Academy of Sciences, 2020; Full member, Sigma Xi, 2020; Fellow, AAIA, 2021; Distinguished Fellow, IETI, 2021.

Research/Areas:

Neural networks; Computational intelligence; Complex networks; Complex systems; Intelligent control; Multi-agent system; Differential equations; Applied mathematics.



Cheetham, Anthony Kevin

FOREIGN FELLOW: Elected 1997

Born in Stockport, UK, on Nov 16, 1946

Goldsmiths' Professor of Materials Science,
Department of Materials Science and Metallurgy,
University of Cambridge,
Cambridge CB3 0FS, United Kingdom

Email: akc30@cam.ac.uk

- Education:** St. Catherine's College, Oxford, UK: Honorary Scholar, B.A. (Class 1) in Chemistry, 1969; Distinction of Supplementary Biochemistry, 1968; Wadham College, Oxford, UK: Senior Scholar, M.A., D.Phil., 1971.
- Positions Held:** Research Professor, Materials Department, University of California, Santa Barbara, California, USA, 2018- to present; Distinguished Visiting Professor, National University of Singapore, Singapore, 2016 – present; Treasurer and Vice-President, The Royal Society, 2012 to 2017; University of Cambridge: Goldsmiths' Professor of Materials Science, 2007 to 2017; University of California, Santa Barbara, California, USA: Director, Materials Research Laboratory, 1992 to 2007; Professor of Chemistry, 1992 to 2007; Professor of Materials, 1991 to 2007; Science Advisor, Unilever plc, 2000 to 2008; Professor of Solid State Chemistry, Royal Institution, London, 1986 to 2002; Christ Church, Oxford: Tutor in Inorganic Chemistry, 1974-1991; Emeritus Student (Fellow), 1991 to date; Oxford University: Lecturer in Chemical Crystallography, 1974-1990; Reader in Inorganic Materials, 1990-1991; Visiting Professor (Fulbright Scholar), Arizona State University, USA, 1977; U.C. Berkeley, USA, 1979; E.P. Abraham Cephalosporin Junior Research Fellow, Lincoln College, Oxford, 1971-1974.
- Awards:** Bonner Chemiepreis, Univ. Bonn, Germany, 2002; Humphry Davy Prize Lectureship of the Royal Society, 2003; Somiya Award of the IUMRS with Professor C.N.R. Rao, 2004; Docteur Honoris Causa, Université de Versailles, 2006; Hon D.Sc., University of St. Andrews, 2011; Hon. D.Sc., Tumkur Univ., India, 2011; Raman Chair, Indian Academy of Sciences, 2011; TWAS Medal Lecturer, 2011; Nyholm Prize for Inorganic Chemistry, Royal Society of Chemistry, 2012; Chemical Pioneer Award, American Institute of Chemists, 2014; Basolo Medal, Northwestern University, 2017; Knighted "For Services to Materials Chemistry, to British science and to global outreach", 2020.
- Fellowships/ Memberships:** Fellow, The Royal Society, London, 1994; Fellow, Royal Society of Chemistry; Foreign Member, Indian National Academy of Sciences, 1998; Fellow, The World Academy of Sciences (TWAS), 1999; Honorary Fellow, Indian Academy of Sciences, 2001; Foreign Member, Mongolian Academy of Sciences, 2008; Member, Academia Europaea, 2009; Platinum Medal, Institute of Materials, Minerals and Mining, 2011; Member, German National Academy of Science, Leopoldina, 2011; Member, German National Academy of Engineering, Acatech, 2013; Member, American Academy of Arts and Sciences, 2014; Honorary Fellow, Singapore National Academy of Sciences, 2019; Foreign Fellow, Indian National Science Academy, 2019.
- Research/Areas:** Inorganic and Hybrid Materials, Solid State Chemistry and Materials Science.



CUI, Peng

FOREIGN FELLOW: Elected 2020

Born in Shaanxi, P. R. China on August 7, 1957

Professor of Institute of Geographical Sciences and Resources and Institute of Mountain Hazards and Environment, Chinese Academy of Sciences

Current address: P.O. Box 417, Chengdu 610041, Sichuan, P.R. China

E-mail: pengcui@imde.ac.cn Tel/Fax: 86 28 85238460

Education:

Post Doctor, King's College London, UK, 1995.10-1997.02; Visiting Scholar, University of Illinois, USA, 1994.10-1995.10; Ph.D., Water and Soil Conservation, Beijing Forestry University, China, 1987.03-1990.05; M.S., Physical Geography, Chengdu Institute of Geography, CAS, 1982.09-1985.07; B.S., Physical Geography, Northwest University, China, 1978.09-1982.07

Positions Held:

Co-Director General, China-Pakistan Joint Research Center on Earth Sciences, 2019.02-present; Professor, Institute of Geographical Sciences and Resources, CAS, 2017.05-present; Head, Lab of Mountain Hazards and Earth Surface Process, CAS, 2005.09-2014.02; Chairman, Academic Committee of Institute of Mountain Hazards and Environment, CAS, 2005.01-2017.05; Director, Institute of Mountain Hazards and Environment, CAS, 1999.12-2004.12; Head, Dongchuan Debris Flow Observation and Research Station, CAS, 1999.05-2009.08; Post Doctor, King's College London, UK, 1995.10-1997.02; Professor, Institute of Mountain Hazards and Environment, CAS, 1994.12-present; Visiting Scholar, University of Illinois, USA, 1994.10-1995.10; Visiting researcher, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal, 1994.08-1994.09; Associate professor, Institute of Mountain Hazards and Environment, CAS, 1993.01-1994.12; Assistant professor, Institute of Mountain Hazards and Environment, CAS, 1990.05-1993.01; Research assistant, Chengdu Institute of Geography, CAS, 1985.07-1990.05

Awards:

Second Class of National Science and Technology Progress Award of China (Rank No.1), *Debris Flow Mitigation Theory and Technology of Mountain Road and Railway*, 2009; The Distinguished Researcher Award of the World Association of Soil and Water Conservation (WASWAC), 2010; Outstanding Scientific and Technological Achievement Award of Chinese Academy of Sciences (Rank No.1), *Research on the formation mechanism and prevention of mountain disasters*, 2020; Outstanding Contribution Team for Debris Flow Research, Chinese Academy of Sciences (Team leader), 2015; National Innovation Award, by China Science and Technology Association, 2020; The National Outstanding Scientist Award, by China Science and Technology Association, 2010; Award for Outstanding Innovation Expert of Sichuan Province, 2013; First Class of Science and Technology Progress Award of Tibet Autonomous Region (Rank No.1), *Theory and Key Technology of Mountain Disaster Prevention and Control in Sichuan-Tibet Transportation Corridor*, 2021; First Class of Science and Technology Progress Award of Sichuan Province (Rank No. 1), *A study on integrated debris flow management at UNESCO world heritage site (Jiuzhaigou)*, 2003; First Class of Science and Technology Progress Award of Sichuan Province (Rank No. 1), *Debris flow control for highway in mountainous region*, 2006; First Class of Science and Technology Progress Award of Sichuan Province (Rank No. 1), *Mechanisms of secondary geohazards formation and risk control in Wenchuan earthquake affected region*, 2013; First Class of Science and Technology Progress Award of Sichuan Province (Rank No. 2), *Key technology of debris flow control based on process regulation*, 2019; First Class of Science and Technology Award (*Atlas of Mountain Hazards and Soil Erosion in the Upper Yangtze*, Chief Editor), by Chinese Society of Soil and Water Conservation, 2015; Award for Outstanding Contribution in Wenchuan Earthquake Relief, by Sichuan Provincial Government, 2008; Outstanding Teacher of University of Chinese Academy of Sciences, 2016.

Fellowships/ Memberships:

Alliance of International Science Organizations on Disaster Risk Reduction (ANSO-DRR), Co-Chair (2019.12-present); Integrated Research on Disaster Risk (IRDR supported ISC and UNDRR), Scientific Committee Member (2015.12-present); International Consortium on Landslides, Board Member (2003.09-present); Asian Network on Debris Flow, Founder and Secretary General (2010.08-present); Expert Advisory Committee of National Program on Key Basic Research Project of China (973 Program), Deputy head of Resources and Environment Team (2007.11-2012.11); Sichuan Association of Science and Technology, Vice President (2019.04-present); The 6th Council of China Scientific Expedition Association, Chairman (2019.12-present); The 9th/10th Council of Geographical Society of China, Vice President (2010.05-2018.12); The 5th Council of Chinese Society of Water and Soil Conservation, Vice President (2016.12-present); The 8th/9th Council of Chinese Association for Quaternary Research, Vice President (2016.01-2023.12); China Society on Tibetan Plateau, Vice President (2020.01-2023.12); Future Earth—China Committee, Member (2017.01-present); Geological disaster prevention and emergency expert of Ministry of Land and Resources of China (2009.07-2016.02); Service to Journals: Founder and Editor-in-Chief: *Journal of Mountain Science*; Associate Editor: *Acta Geologica Sinica* (till 2018); Member of Editorial Board: *Landslides*, *International Journal of Sediment Research*, *Mountain Research and Development* (till 2022), *Frontiers of Earth Science*, *Advances in Climate Change Research*.

Research/Areas:

Natural geography and soil and water conservation, Formation mechanism, risk assessment, monitoring and early warning, prevention and control technology of mountain hazards.



Gilani, G. Sarwar

FOREIGN FELLOW: Elected 2011

Born in British India, in 1943

Nutrition & Health Advisor (Independent)

506 Caracole Way, Ottawa, Ontario, Canada K4A 0W3

Tel: 1-613-889-3034

Email: gilanisarwar@rogers.com

Education:

University of Peshawar (Pakistan): B.Sc. Hon., 1964; M.Sc. 1968; University of Saskatchewan (Canada), M.Sc., 1971; Ph.D. 1974.

Positions Held:

Senior Research Scientist, Bureau of Nutritional Sciences, Health Products and Food Branch, Health Canada, Government of Canada, 1982 to 2011; Scientific Evaluator, Health Protection Branch, Government of Canada, 1977 to 1981; Professional Research Associate, Rapeseed Association of Canada, 1975 to 1976; Post-doctorate Research Fellow, University of Alberta; Adjunct Professor, McGill University (Canada), 1984 to 1992; Adjunct Professor, Laval University (Canada), 1985 to 1990; Lecturer, University of Peshawar, 1968 to 1969.

Awards:

The Queen's Golden and Diamond Jubilee Medals (2003 and 2013); Health Canada's Award for Excellence in Science (2004)

Fellowships/ Memberships:

Chair, Editorial Board, AOAC International (2013-2016); Member of WHO/FAO Expert Consultations on Protein and Amino Fellow, Association of Official Analytical Communities (AOAC) International; Chair, Editorial Board, AOAC International (2013-2018); Member of WHO/FAO Expert Consultations on Protein and Amino Acid Requirements for Human Nutrition (2002) and of FAO/WHO Expert Consultations on Protein quality Evaluation in Human Nutrition (1990, 2001 and 2011); Member of Codex Committee on Vegetable Proteins for establishing international standards for international trade (1980-1989); Member, American Society for Nutritional Sciences and Canadian Society for Nutritional Sciences; Scientific Advisor to Pakistan under the UNDP and the President's Programme for Care of Highly Qualified Overseas Pakistanis (2015, 2011, 2008, 2004, 2003, 1999, 1991); Scientific Consultant to FDA and LSRO (Life Sciences Research Office), USA; Member, Expert Review Panels, Centre of Excellence, Government of Canada dealing with Food, Nutrition and Health (2000-2005); Organized and/or chaired international symposia including those sponsored by FABA (Federation of Asian Biotech Associations) with headquarters in India; Member, Editorial Board of an international journal "Plant Foods for Human Nutrition: Section Editor of Journal of AOAC International.

Research/Areas:

Research regarding safety and nutritional quality of the food supply to prevent acute and chronic diseases and nutrient imbalances in general populations and in sub-groups at increased risk with reduction of corresponding health care costs.



Hassan, Mohamed Hag Ali

FOREIGN FELLOW: Elected 2002

Born in Elgetina, Sudan, on November 21, 1947

Sudanese National Academy of Sciences (SNAS) Alshifa Street, Block 11,
Building 7/31 Khartoum North Sudan

Tel: +249183590631

Mobile: +249901232313

Email: hassan@ictp.it

Education:

University of Newcastle, UK, B.Sc. (Special Honours), Mathematics, 1968; University of Oxford, UK, M.Sc., Advanced Mathematics, 1969; University of Oxford, UK, D. Phil. (Ph.D.), Plasma Physics, 1974.

Positions Held:

Full Professor and Dean, Faculty of Mathematical Sciences, University of Khartoum; President of the Inter Academy Partnership (IAP); founding Executive Director of the World Academy of Sciences (TWAS); President of the African Academy of Sciences (AAS); founding President of the Network of African Science Academies (NASAC); Chairman of the Council of the United Nations University (UNU); and Chairman of the Honorary Presidential Advisory Council for Science and Technology, Nigeria; President of The World Academy of Sciences (TWAS), Italy; President of the Sudanese National Academy of Sciences (SNAS), Sudan; Chairman of the Governing Council of the United Nations Technology Bank for the Least Developed Countries, Turkey and Chairman of the International Advisory Board of the Centre for International Development (ZEF), Germany; Member of the Board of Directors of Grand Challenges Canada (GCC), Canada; the Board of Trustees of Bibliotheca Alexandrina, Egypt; the Council of Science and Technology in Society (STS) Forum, Japan; and the Steering Committee of the World Science Forum, Hungary

Awards:

Comendator, Grand Cross, and National Order of Scientific Merit, Brazil; Officer, Order of Merit of the Italian Republic. G77 Leadership Award and the Abdus Salam Medal for Science and Technology

Fellowships/ Memberships:

Fellow/Member of TWAS; AAS; the Islamic World Academy of Sciences; Academia Colombiana de Ciencias Exactas, Físicas y Naturales; Académie Royale des Sciences, Belgium; Pakistan Academy of Sciences; Academy of Sciences of Lebanon; Cuban Academy of Sciences; academy of Sciences of South Africa; the Pontifical Academy of Sciences and Hassan II Academy of Science and Technology

Research/Areas:

Theoretical Plasma Physics and Fusion Energy; Wind Erosion, Dust and Sand Transport in Dry Lands, STI in the Developing World, Theoretical Plasma Physics; Physics of Wind Erosion, Sand and Dust transport, Diffusion of Dust Particles.



Iqbal, Khalid

FOREIGN FELLOW: Elected 2019

Born In Lahore, Pakistan, March 15, 1943

Chairman, Department of Neurochemistry
New York State Institute for Basic Research in Developmental Disabilities,
Staten Island, New York, USA
Professor of Neuroscience, City University of New York

Tel: +1-718 494 5259

Mob: +1-917 455 5015

Email: khalid.iqbal.ibr@gmail.com

Education:

B.Sc., Govt. College, Lahore, 1962; B.Sc. Hons., Institute of Chemistry, University of Punjab, Lahore, 1963; M.Sc., University of Punjab, Lahore, 1964; Ph.D., University of Edinburgh, UK, 1969

Positions Held:

Postdoctoral Fellow, (Laboratory of Dr. C. Wu, Dept. of Medicine) University of Michigan, Ann Arbor, 1969–1970; Postdoctoral Fellow, (Laboratory of Dr. S. Gabay, Dept. of Pharmacology) Biochemical Research Laboratory of Harvard Dental School at Veterans Administration Hospital, Brockton, Massachusetts, 1970–1971; Postdoctoral Fellow, (Laboratory of Drs. I. Tellez Nagel, and R.D. Terry Dept. of Pathology) Albert Einstein College of Medicine, Bronx, New York, 1971–1973; Instructor of Pathology (Neuropathology), Albert Einstein College of Medicine, Bronx, New York, 1973–1974; Assistant Professor of Pathology (Neuropathology), Albert Einstein College of Medicine, Bronx, New York, 1974–1977; Research Scientist V (equivalent to the rank of an Associate Professor) and Head, Chemical Neuropathology, NYS Institute for Basic Research in Developmental Disabilities, Staten Island, New York, 1977–1982; Research Scientist VI (equivalent to the rank of a full Professor) and Head, Chemical Neuropathology, NYS Institute for Basic Research in Developmental Disabilities, Staten Island, New York, 1982–1997; Chairman, Department of Pathological Biochemistry, NYS Institute for Basic Research, Staten Island, New York, 1983–1988; Rotating Chairman, Department of Neurochemistry, NYS Institute for Basic Research, Staten Island, New York, 1996–1997; Research Scientist VII (equivalent to rank of a senior full professor) and Head, Chemical Neuropathology, NYS Institute for Basic Research, Staten Island, New York, Since 1997; Chairman, Department of Neurochemistry, NYS Institute for Basic Research, Staten Island, New York and Professor of Neuroscience, The Graduate Center, The City University of New York, New York, Since 1998.

Awards:

Post Doctoral Research & Workshop Award, California Chapter, Committee to Combat Huntington's Disease, 1972; Moore Award, American Association of Neuropathologists, 1973; Abraham and Joseph Spector Fellow in Pathology, Albert Einstein College of Medicine, 1974–1977; Invited speaker and moderator of many national and international Symposia/Congresses on Alzheimer disease and related disorders, Since 1973; Founder and Executive Convener, First International Conference on Alzheimer's Disease & Related Disorders, Las Vegas, 1988; Chairman, Second International Conference on Alzheimer's Disease & Related Disorders, Toronto, Canada, 1990; Chairman, Program Committee, Third International Conference on Alzheimer's Disease & Related Disorders, Padova, Italy, 1992; Zenith Award, Alzheimer's Association, USA, 1992; Chairman, Fourth International Conference on Alzheimer's Disease & Related Disorders, Minneapolis, Minnesota, 1994; Potamkin Prize for Research on Alzheimer's Disease, American Academy of Neurology, USA, 1995; Chairman, Fifth International Conference on Alzheimer's Disease & Related Disorders, Osaka, Japan, 1996; Keynote speaker, M.I.D. Chaghtai Lecture at the Meeting of the Pakistan Society of Biochemistry, Lahore, Pakistan, 1996; Honorary Professor, Capital University of Medical Sciences, Beijing, P.R. China, 1996; Honorary Professor, Tongji Medical University, Wuhan, P.R. China, 1997; Chairman, Sixth International Conference on Alzheimer's Disease & Related Disorders, Amsterdam, Netherlands, 1998; Chairman, Seventh International Conference on Alzheimer's Disease and Related Disorders, Washington, D.C., July 9–13, 2000; Chairman, Eighth International Conference on Alzheimer's Disease and Related Disorders, Stockholm, Sweden July 20–25, 2002; Chairman, Scientific Advisory Board, Axon Neuroscience, Vienna, Austria, 2001; Chairman, Ninth International Conference on Alzheimer's Disease & Related Disorders, Philadelphia, PA, July 18–23, 2004; Chairman, Tenth International Conference on Alzheimer's Disease & Related Disorders (ICAD), Madrid, Spain, July 16–20, 2006; Chairman, Eleventh International Conference on Alzheimer's Disease & Related Disorders (ICAD), Chicago, IL, July 26–31, 2008; Alzheimer's Association, USA, has established the Khalid Iqbal Life Achievement Award for Alzheimer's Disease Research which is given out to a distinguished Alzheimer disease researcher at the opening ceremony of the International Conference on Alzheimer's Disease (ICAD) every year, 2009; Overseas Visiting Professor, Aino University, Ibaraki City, Osaka, Japan, 2016; Awarded Honorary Doctor of Science from the City University of New York College of Staten Island, Staten Island, New York, 2016

Fellowships/ Memberships:

American Society for Biochemistry and Molecular Biology; American Society for Investigative Pathology; American Association of Neuropathologists; American Society for Neurochemistry; American Association for the Advancement of Science; International Society for Neurochemistry; New York Academy of Sciences; Society for Neuroscience; Ad hoc member of several National Institutes of Health Study Sections, Since 1974; Member, Ad Hoc Study Section, National Institute of Neurological and Communicative Disorders and Stroke, 1975; Member, Work Group on "Structure and Animal Models" Commission for the Control of Huntington's Disease and its Consequences, National Institutes of Health, 1976; Member, Epidemiology and Disease Control Study Section (Special Study Section), National Institutes of Health, 1981; Editorial Board, Journal of Neural Transmission, 1996; Corresponding Member, Academia de Ciencias Medicas, Cordoba, Argentina, 1997; Editorial Board, Neurobiology of Aging, 1998; Editorial Board, Journal of Alzheimer's Disease, 1998; Board of Governors, World Association of Alzheimer's Disease Scientists/Alzheimer's Association, 1998–2008; Board of Directors, Research Foundation for Mental Hygiene, Inc., Albany, New York, 1998–2001; Editorial Board, Acta Neuropathologica (Berl), 2000–2005; Editorial Board, Brain Aging International Journal, 2001–2006; Member, Scientific Advisory Board, Voyager Pharmaceuticals Corp., Raleigh, NC, 2002–2007; Editorial Board, Neurodegenerative Diseases, 2002; Member, Brain Disorders and Clinical Neuroscience - 3, Study Section, National Institutes of Health, USA, 2003–2006; Editorial Board, Current Alzheimer Research, 2004–Present; Member, Scientific Advisory Board, Neuropharma, S.A., Madrid, Spain, 2006–2012; Ex-officio Member, Scientific Program Committee, International Conference on Alzheimer's Disease and Related Disorders (ICAD), 2009–2012; Elected Foreign Fellow of Pakistan Academy of Sciences, 2019

Research/Areas:

Neuroscience, Neurobiology, Neurochemistry, Biochemistry, Neurodegenerative Diseases, Brain Aging and Dementia, Alzheimer's Disease



Khan, Shahbaz

FOREIGN FELLOW: Elected 2021

Director, UNESCO Regional Science Bureau Asia and the Pacific,
Jakarta, Indonesia

Tel : +62-8179996667

Email: dskhan@yahoo.com

**Shahbaz Khan –
Director of UNESCO Beijing
Cluster
Office and UNESCO
Representative**

Professor Shahbaz Khan was appointed as the Director of the UNESCO Office in Beijing and UNESCO Representative to the Democratic People's Republic of Korea, Japan, Mongolia, People's Republic of China, and the Republic of Korea on 9 March 2021.

Prof Khan joined UNESCO in 2008 at its Headquarters as Chief of the Water and Sustainable Development Section. Then he served as the Director of the Regional Bureau for Sciences in Asia and the Pacific in Jakarta, Indonesia, and UNESCO Representative to Indonesia, Brunei Darussalam, Malaysia, the Philippines and Timor-Leste (2015-2021).

He has worked in Australia, France, Indonesia and Pakistan in various research, consultancy and policy positions around hydrology and sustainable development. His work has been widely recognized e.g. 2019 China Friendship Award, Great Wall Friendship Award China 2017 and Land and Water Australia's Eureka Prize 2007.

Prof Khan holds a Hon Doctorate Environment and Development from the National University of Malaysia and Hon DSc from the University of Birmingham.



Kharin, Stanislav Nikolaevich

FOREIGN FELLOW: Elected 1998

Born in Kaskellen Village of Almaty Region, Kazakhstan, on December 4, 1938

Tolebi, Almaty, 050000, Kazkhstan

Residence: 050043 Almaty Orbita-1-24-6, Kazkhstan

Tel: +7 7272 290240

Email: snkharin@yahoo.com

Education:

Kazakh State University (named after S. M. Kirov), Kazakhstan: Student, Faculty of Mathematics and Mechanics, 1956-1961; Postgraduate Student at the Chair of Mathematical Physics Equations, 1961-1964; Masters in Physical and Mathematical Sciences, 1968; Doctor of Science (PhD), Thermodynamics Institute of the Siberian Branch of the USSR Academy of Sciences, Novosibirsk, Russia, 1990.

Positions Held:

Professor, Kazakh-British Technical University, Almaty, Kazakhstan; Visiting Professor, Ghulam Ishaq Khan Institute of Engineering and Technology, Pakistan, 1996-2001, 2003-2005; Visiting Professor, University of the West of England, Bristol, UK, 2001-2003; Head, Department of Physics and Mathematics, National Academy of Sciences, Kazakhstan, 1994-1996; Head, Laboratory of the Mathematical Physics Equations, Institute of Mathematics, Kazakhstan Academy of Sciences, 1980-1994; Institute of Mathematics and Mechanics, Kazakhstan Academy of Sciences: Deputy Director for Sciences, 1980-1994; Senior Research Worker, 1969-1980; Junior, Research Worker, 1964-1969.

Awards:

Awarded title of Professor in Mathematical Physics, 1991; Medal "Inventor USSR" for Introduction of the Mathematical Base of Bimetallic Switches in Electrical Apparatus, 1982; Gold Medal of the Exhibition of the National Economy Achievements of the USSR for invention of Electrical Connector SP-063; Academic rank of Academician of the National Academy of Sciences of Kazakhstan, 2003.

Fellowships/ Memberships:

Member, Specialized Council for Masters and Ph.D. Degrees, Kazakhstan Academy of Sciences, 1969-1980; President, Maly Academy of Sciences for Schoolboys, 1995 to date; Member, Editorial Board of Transactions of the Kazakhstan Academy of Sciences, Series of Physics and Mathematics, 1996 to date; Member, Scientific Council of the Institute of Mathematics of Kazakhstan Academy of Sciences, 1980 to date; Chairman, Committee for Coordination of Investigations of the Former USSR Countries in the Fields of Electrical Contacts and Electrodes, 1995 to date; Co-Chairman, Committee for Scientific and Technological Cooperation between Republic of Kazakhstan and the Islamic Republic of Pakistan, 1996-2005; Academic rank of Associate Member of the National Academy of Sciences of Kazakhstan, 1994.

Research/Areas:

Mathematical Physics and Mechanics, Mathematical Models of Thermophysical Processes in Electrical Contacts.



Maiani, Luciano

FOREIGN FELLOW: Elected 2000

Born in Roma, Italy, on July 16, 1941

Physics Department, University of Roma La Sapienza
Piazza A. Moro 5, 00185 ROMA, ITALY

Tel: 0039-06-49914323

Email: luciano.maiani@roma1.infn.it

- Education:** Ph.D. (Physics), 1964; Harvard University, USA: Postdoctoral Fellow, 1969; Slovak Academy of Sciences: D.Sc., 2001.
- Positions Held:** Research Staff, Istituto Superiore di Sanita, Roma, 1964-1976; Professor, Institutions of Theoretical Physics, University of Roma "La Sapienza", 1976-1984; Professor, Theoretical Physics, University of Roma "La Sapienza", 1976; Emeritus, University of Roma "La Sapienza", 2011 to date; President, Istituto Nazionale di Fisica Nucleare, 1993-1998; President, CERN Council, Geneva, 1997; Director General, CERN, 1999 to 2003; Visiting Scientist, European Organization for Nuclear Research (CERN), Geneva, 1979-1980, 1985-1986, 2012-2013, 2017-2018; Visiting Professor, Ecole Normale Supérieure, Paris, 1977.
- Awards:** Matteucci Medal, Accademia Nazionale dei XL, 1979; Prize "J.J. Sakurai" of the American Physical Society, 1987; Laurea honoris causa, Université de la Méditerranée, Aix-Marseille, 1996; Laurea honoris causa, University of St. Petersburg, 1998; Dirac Medal, ICTP Trieste 2007; The High Energy and Particle Physics Prize, European Physical Society, 2011; Bruno Pontecorvo Prize, JINR Dubna, Russia, 2014.
- Fellowships/ Memberships:** Fellow, American Physical Society, 1991; Member, Accademia Nazionale dei Lincei, Roma, Italy, 1988; Member, Accademia Nazionale dei XL, 1997; Member, The Super-Proto-Synchrotron Committee, CERN, Geneva, 1979-1983; Member, Scientific Policy Committee, CERN, Geneva, 1984-1991; Member, Extended Research Council, German Electronic Synchrotron at DESY, Hamburg, 1990; Member, LHC Committee, CERN, Geneva, 1992-1993; Member, IUPAP, C11 Subcommittee, 1997-2002.
- Research/Areas:** Particle Physics.



Langer, Peter

FOREIGN FELLOW: Elected 2012

Born in Hannover, Germany, on February 20, 1969

Full Professor and Head of Department of Organic Chemistry, University of Rostock, Germany

Tel: 0049 381 4986410

Email: peter.langer@uni-rostock.de

- Education:** Dipl.-Chem. (equiv. to M. Sc) University of Hannover, Germany (1989-1994); Diploma thesis Massachusetts Institute of Technology, USA (1993-1994); Dr. rer. nat. (equiv. to Ph.D.), University of Hannover, Germany (1994-1997); Postdoctoral Fellow, Cambridge Chemical Laboratory, UK (1997-1998); Habilitation and Venia Legendi (equiv. to D.Sc.), University of Göttingen, Germany (1998-2001); Privatdozent, Heisenberg Research Scholar, University of Göttingen, Germany (2001).
- Positions Held:** Full Professor and Head of the Department of Organic Chemistry, University of Rostock, Germany (2004 - today); Head of the Department Organic Synthesis of Leibniz Institute of Catalysis at the University of Rostock e.V. (LIKAT) (2005 - today); Full Professor and Head of Chair of Bioorganic Chemistry, University of Greifswald, Germany (2002-2004); Acting Professor, University of Greifswald, Germany (2001-2002).
- Awards:** Award of the Faculty of Chemistry of the University of Hannover (1997); Thieme-Journal-Award (2000); Gold Medal of Yerevan State University, Armenia (2010); Doctor Honoris Causa, Yerevan State University, Armenia (2011); Doctor Honoris Causa, Vietnam National University, Hanoi, Vietnam (2012); Professor Honoris Causa, University of Mosul, Iraq (2012); Doctor Honoris Causa, Tishreen University Latakia, Syria (2012).
- Fellowships/ Memberships:** Scholar of the Studienstiftung des Deutschen Volkes (1992-1994); Ph.D. Scholarship Feodor-Lynen Scholar of the Alexander von-Humboldt Foundation (1997-1998); Liebig Scholar of the Verband der Chemischen Industrie (1998-2001); Heisenberg Scholar (2001); Member of the German Chemical Society (since 1996); Member of Deutscher Hochschulverband (since 2000); Member of the Academic Council of COMSATS Institute of Information Technology (CIIT), Pakistan (since 2012); Member of the Editorial Board of 'Journal of Carbohydrate Chemistry' (since 2008); Member of the Editorial Board of 'Materials' (since 2008); Associate Editor of 'Current Bioactive Compounds' (since 2008); Associate Editor of 'Current Organic Synthesis' (since 2009); Member of the Editorial Board of 'Biochemical Compounds'; Guest Editor, Tetrahedron Symposium-in-Print (2009); Associate Editor of the Journal of the Chemical Society of Pakistan (since 2011); Foreign Fellow of the Pakistan Academy of Science (2013).
- Research/Areas:** Synthetic organic chemistry, domino reactions, cyclization reactions, catalysis, organosilicon chemistry, heterocycles, medicinal chemistry, natural products, carbohydrates, new organic materials.



Niemela, Joseph J.

FOREIGN FELLOW: Elected 2019

Born in Portland, Oregon, USA on July 13, 1954

Consultant/ Scientist Emeritus, The Abdus Salam ICTP, Strada Costiera 11, 34151 Trieste, Italy

Tel: (39 040) 224 0607

Mob: (39 366) 655 0648

Email: niemela@ictp.it; joseph.niemela@gmail.com

- Education:** University of Oregon, Eugene, Oregon USA: B.Sc. (Hons), 1982; Univ. of Oregon, Eugene, Oregon, USA: Ph.D., 1987; University of California, Santa Barbara: Postdoctoral Fellow 1988-1989
- Positions Held:** Consultant and Scientist Emeritus, Abdus Salam ICTP 2016-present; Senior Consultant, UNESCO Headquarters, Paris France 2018-2019; Senior Research Scientist and Head, Office of External Activities, Abdus Salam ICTP 2014-2016; Research Scientist, Abdus Salam ICTP 2003-2013; Visiting Professor, University of Maryland/Institute for Physical Science and Technology 2002-2003; Research Professor & Managing Director, Cryogenic Helium Turbulence Laboratory University of Oregon 2002-2003; Research Associate Professor, University of Oregon, 1996-2002; Research Associate, University of Oregon, 1990-1995.
- Awards:** I.B.M. Post-doctoral Fellowship Award, UC Santa Barbara, 1987; SPIE Educator of the Year Award, 2011; European Physical Society Service Award 2014; Galileo Galilei Silver Medal, Italian Physical Society (2015); Dwight Nicholson Medal, American Physical Society (2016).
- Fellowships/ Memberships:** Elected Fellow, American Physical Society 2015; Member, Committee on International Scientific Affairs (CISA), American Physical Society; Chair, Forum on International Physics (FIP), American Physical Society (2022); Chair, Inter-divisional Group Physics for Development, European Physical Society, 2015-present; Chair, TWAS Physics Grants Committee, 2015-present; Treasurer, International Commission for Optics; Convener, IQQ225 Executive Committee, American Physical Society; Co-Chair, UNESCO International Day of Light; Regular Member Sigma Xi.
- Research/Areas:** Low Temperature Physics, Fluid Turbulence, Quantum Turbulence.



Nieschlag, Eberhard

FOREIGN FELLOW: Elected 1996

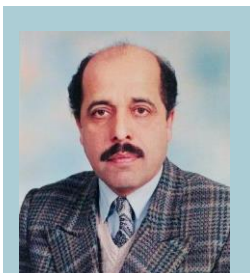
Born in Germany, on July 16, 1941

Former Director, Institute of Reproductive Medicine University of Münster, Domagkstr. 11, D-48149, Münster, Germany

Email: eberhard.nieschlag@ukmuenster.de

- Education:** University of Bonn and Munich: Study of Medicine, 1961-1967 University of Bonn: Doctoral degree (Dr. med.) 1967; Studies at several other institutions in UK, USA and Sweden.
- Positions Held:** Since 2011 Director of QuaDeGA (Quality Control Program of the German Society of Andrology); University of Munster, Germany: Full Professor of Reproductive Medicine, 1992 to date; Associate Professor of Internal Medicine, 1976; Director, Institute of Reproductive Medicine, 1986 to 2008; Director, Max Planck Clinical Research Unit for Reproductive Medicine, Munster, 1980 to 1989.
- Awards:** "Grandmaster of Testosterone" awarded by the US Androgen Society 2021; Honorary Membership of the German Society of Reproductive Medicine (DGRM) 2017, Honorary Member of the European Society of Endocrinology (ESE) 2015, Berthold-Medal of the German Society of Endocrinology (DGE) 2012, Honorary Member of the German Society of Endocrinology (DGE) 2011, German Federal Cross of Merit, 2008; "Distinguished Andrologist" of the American Society of Andrology, 2007; Doctor honoris causa, Medical University of Łódź (Poland), 2006; Premio di Andrologia J. M. Pomerol, Fundació Puigvert (Barcelona), 2005; Clinical Endocrinology Trust Visiting Professor (UK), 2001; Ernst-Jung Prize for Medicine (DM 200,000), 1996; Clinical Endocrinology Trust Medal, London, 1994; Keith-Harrison Plaque and Lecture of the Endocrine Society, Australia, 1993; European Medal and Lecture of the British Endocrine Society, London, 1990.
- Fellowships/ Memberships:** Fellow, Royal College of Physicians, London, 1994 to date; Member, Executive Council, European Society for Human Reproduction (ESHRE), 1996-1999; Executive Council, European Federation of Endocrine Societies (EFES), 1994-2001; Chairman, WHO Steering Committee of the Task Force on the Regulation of Male Fertility, 1985-1990. International Society of Andrology, 1981-1985; German Society of Endocrinology, 1990-1993; European Academy of Andrology, 1992-1998; German Society of Andrology, 2001-2007; German Society of Reproductive Medicine, 2001-2003; European Society of Endocrinology 2007-2011. German Society of Urology 2007, German Society of Andrology 2008, Polish Society of Endocrinology 2008, German Society of Endocrinology 2011, European Society of Endocrinology 2014, German Society of Reproductive Medicine 2018, European Academy of Andrology 2019.
- Research/Areas:** Internal Medicine, Reproductive Medicine, Endocrinology and Andrology (Male infertility, male hypogonadism, testosterone treatment, male contraception, doping control for anabolic steroids).

ÖZTÜRK, MÜNİR



FELLOW: Elected 2020

Born in Srinagar-Kashmir, on December 6, 1943

Retired Professor, Ege University, Izmir, Türkiye

Home Address: 915 Sokak, NU:200, Atatürk Mahallesi, Bornova, Izmir

Mob: ++90 535 309 8104

Email: munirozturk@gmail.com

Education: University of Jammu & Kashmir, KASHMIR: M.Sc. (Botany), 1964; Ege University-Izmir, Türkiye: PhD (Ecology), 1970.; D.Sc. Ege University -Izmir, Türkiye; Full Professor, 1980 Ege University -Izmir, Türkiye.

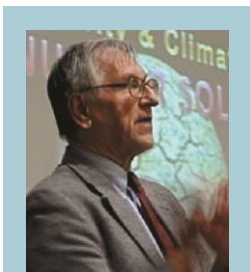
Positions Held: Rtd. Professor, Ege University, Izmir-Türkiye-2000: Vice President, Islamic World Academy of Sciences: 2017 onwards; Founding Director Centre for Environmental Studies, Ege University, Türkiye: 1990-2000; Chairman, Botany Department, Ege University: 1982-1984; Director Botanical Garden Ege University, 1982-1984.

Awards: TUBITAK Scientific Publication Awards (15) 1996-2009; Turkish Biological Society 30 Years Services Award, 1993; Certificates of Honour- in Pollution Control Studies and Biodiversity, Municipalities of Kusadası, Soke, Izmir, Urla-Türkiye: 1993, 1995, 1996, 1997; Certificates of Honour-Environmental Protection & Res. Foundation, Izmir, Türkiye: 1991, 1996, 1997; OLEYİS Labour Foundation for Social Security & Assistance Award- Tourism and Environment Competition, Ankara, Türkiye: 1997; Izmir Governorate Awards for Assistance to Foreign Students (5): 1997, 2001; Newly recorded plant species from Turkey in my name: *Sideritis ozturkii*; *Verbascum ozturkii*.

Fellowships/ Memberships: AvH-Alexander von Humboldt Fellowship: 1977-1978, 1979, 1986, 1993; JSPS-Japanese Society for the Promotion of Science Fellowship: 1984-1985; National Science Foundation Researcher- USA: 1997-1998; Fellow Islamic Academy of Science: 2000 onwards; Consultant Fellow, Faculty of Forestry, Univ. of Putra Malaysia, Selangor- Malaysia: 2012-2013, 2016; Distinguished Visiting Scientist, ICCBS, Karachi Univ., Pakistan: 2013- 2014; 25 Board Memberships in International Journals

Research/Areas: Medicinal and Aromatic Plants, Eco-Physiology, Conservation & Management of Plant Diversity, Pollution, Biomonitoring, Wastewater Renovation, Biosaline Agriculture, Biomass & Bioenergy.

Peterson, R. J.



FOREIGN FELLOW: Elected 1996

Born in Everett, Washington State USA, on October 10, 1939

Professor Emeritus of Physics,

University of Colorado, Boulder, Colorado 80309-0390, USA

Tel: (303) 492-1686

Email: jerry.peterson@colorado.edu

Education: University of Washington, USA: BS, magna cum laude, 1961, Ph.D., 1966.

Positions Held: Professor Emeritus of Physics, University of Colorado, USA; Professor of Physics and of International Affairs, former Interim Vice Chancellor for Research, University of Colorado Boulder, USA; Visiting Professor, University of Copenhagen, Niels Bohr Institute, Denmark, University of Tokyo, Japan and University of Rio de Janeiro, Brazil; Various ranks, University of Colorado, Boulder, 1970-present; Research Faculty Member, Yale University, USA, 1968-1970; Instructor, Princeton University, USA, 1966-1968.

Awards: Fellow, American Physical Society; Foreign Fellow, Pakistan Academy of Sciences; Fellow, Japan Society for the Promotion of Science; Jefferson Science Fellow, US Department of State.

Fellowships/ Memberships: Member, American Physical Society, American Nuclear Society; Member, Long Range Plan Panel, Nuclear Sciences Advisory Committee, 1992; Member, US National Science Foundation (NSF), Physics Division Committee of Visitors, 1994, 1997; Chairman, Nuclear Physics Laboratory, 1980-81, 1988-89, 1994-96; Chairman, LAMPF User Group, 1992-93; Program Director, Intermediate Energy Physics, Physics Division, NSF, 1978-79; Member, International Conference on Nuclear Science and Technology, Turkey, 2nd & 3rd International conferences on Nuclear and Radiation Science, Kazakhstan, and others.

Research/Areas: Experimental Nuclear Physics, Nuclear Astrophysics, Exotic Fission Mechanisms, High Energy Nuclear Reactions with Mesons and Light Ions.



Qaim, Syed Muhammad

FOREIGN FELLOW: Elected 1990

Born in Fatehpur, British India, on January 5, 1941

Advisor, Institute of Nuclear Chemistry, Forschungszentrum, Jülich GmbH, and Professor of Nuclear Chemistry, Universität zu Köln D-52425, JÜLICH, Germany

Tel: +49 (0) 2461 613282

Fax: +49 (0) 2461 612535

Email: s.m.qaim@fz-juelich.de

- Education:** Govt. College and University of the Punjab, Lahore, Pakistan: B.Sc., 1958; M.Sc., 1961; Liverpool University, United Kingdom: Ph.D., 1964; Birmingham University, United Kingdom: D.Sc., 1977
- Positions Held:** Research Associate, Birmingham University, United Kingdom, 1964–1966; Senior Scientific Officer, Atomic Energy Centre, Lahore, Pakistan, 1966–1968; Alexander von Humboldt Fellow, Mainz University, Germany, 1968–1970; Institute of Nuclear Chemistry of the Research Centre Jülich, Germany: Scientist, 1970–1975; Group Leader, 1975–1985; Division Leader, 1985–1995; Acting Director, 1995–1996; Vice Director 1996–2006; Advisor/Guest, 2006 to date; also Professor of Nuclear Chemistry at University of Cologne, Germany, 1997 to date; Chairman International Nuclear Data Committee of IAEA, 2002–2008; Chairman of Education and Training Committee of the World Council on Isotopes (WCI), 2020 to date
- Awards:** Roland Eötvös Medal of Hungarian Physical Society (for contributions to understanding of complex particle emission reactions), 1988; JARI Medal Award and Prize of Pergamon Press (for developing novel medical radionuclides), 1990; Honorary Citizen, Kossuth University Debrecen, Hungary, 1995; Sitara-i-Imtiaz by President of Pakistan, 1999; Doctor of Science honoris causa, Kossuth University, Debrecen, Hungary, 1999; Doctor of Science honoris causa, The Yorker International University, New York/Milan/Florence, 2007; Honorary Professor, Government College University, Lahore, Pakistan, 2003; Medal of Honour of Egyptian Atomic Energy Authority, 2005; Medal and Certificate of Merit, Egyptian Association of Nuclear Physicists, 2005; Hevesy Medal of Nuclear Chemistry (for outstanding contributions to nuclear and radiochemistry), 2008; Becquerel Medal of Radiochemistry Group of Royal Society of Chemistry, London (for outstanding career contributions to radiochemistry), 2008; Golden Jubilee Award of Radiochimica Acta (for lifetime contributions to the Journal), 2012; Medal of Honour of Rajshahi University, Bangladesh, 2013; Medal of Honour of Government College University Lahore, Pakistan, 2018.
- Fellowships/ Memberships:** Fellow Royal Society of Chemistry, London, 1974; Fellow Institute of Physics, London, 1974; Honorary Fellow, Hungarian Physical Society, 1988; Foreign Fellow, Pakistan Nuclear Society, 1997; Foreign Fellow, Pakistan Institute of Chemists, 1998; Fellow, Islamic World Academy of Sciences, 1994; Fellow, The World Academy of Sciences, 2001.
- Research/Areas:** Nuclear chemistry, analytical radiochemistry, medical radionuclides.



Siddique, Kadambot H.M.

FELLOW: Elected 2021

Born in India, on November 20, 1955

Hackett Professor,
The University of Western Australia (UWA), Perth, Western Australia

Mobile: +61 411 155 396

Email: Kadambot.siddique@uwa.edu.au

Education:

The University of Western Australia, Western Australia, Australia, PhD, Environmental and Crop Physiology, 1985; Indian Agricultural Research Institute, New Delhi, India, MSc (Ag), Crop Physiology, 1979; Kerala Agricultural University, Kerala, India, BSc (Ag) Hons, Agricultural Science, 1977.

Positions Held:

Hackett Professor of Agriculture Chair & Director, The UWA Institute of Agriculture, The University of Western Australia 2012 to present; Associate Dean Research, Faculty of Natural and Agricultural Sciences, The University of Western Australia, 2010-2012; Winthrop Professor of Agriculture Chair & Director, The UWA Institute of Agriculture, The University of Western Australia, 2006-2012; Director and Professor (Crop Science), Centre for Legumes in Mediterranean Agriculture (CLIMA), Faculty of Natural and Agricultural Sciences, The University of Western Australia, 2001-2006; Leader, Pulse Productivity Program, Department of Agriculture Western Australia, 2000-2001; Principal Pulse Agronomist/Physiologist, Department of Agriculture, WA and Sub-Program Leader, CLIMA, The University of Western Australia, 1996-2001; Senior Pulse Agronomist/Physiologist, Department of Agriculture Western Australia, 1992-1996; Cereal Physiologist, Department of Agriculture, Western Australia, 1985-1992; Research Associate, International Centre for Agricultural Research the Dry Areas (ICARDA), Aleppo, Syria, 1980-1981.

Awards:

Elected as the Foreign Fellow of the Pakistan Academy of Sciences (FPAS, 2021; Highly Cited Researcher (Hi Ci) (i) Agricultural Sciences (ii) Plant and Animal Science, 2021; The Australian's 2021 Research magazine nation's "Top Researcher" in the field of Botany, 2021; Western Australian Indian of the Year 2021; Highly Cited (Hi Ci) Researcher in Agricultural Sciences, 2020 and 2019; The Friendship Award from the Chinese Central Government, 2019; Excellence Award for community service from the World Malayalee Council (WMC), 2019; elected Foreign Fellow of the African Academy of Sciences, 2018; Global Agricultural Research Leadership Award from the Indian Council of Food and Agriculture (ICFA), 2017; Government of India Minister for Agriculture honoured Professor Siddique for his outstanding contributions to global pulses research and development, 2016; Grains Industry Association of Western Australia (GIWA) award for his lifetime contribution to the pulse industry, 2016; designated Special Ambassador by the UN FAO for the International Year of Pulses, 2016; The Knowledge Nation 100-a group of Australians named in The Australian newspaper's The Deal Magazine as the "stars of the Australian innovation constellation", 2015; elected as the Foreign Fellow of the Indian National Academy of Agricultural Sciences (FNAAS, 2015; elected as the International Fellow of Indian Society of Plant Physiologist, 2015; Western Australian of the Year Award for his contribution to agricultural science and the farming community, 2014; Dunhuang Award by China's Gansu Provincial Government, 2013; elected as a Fellow of the Agriculture Institute of Australia (FAIA), 2013; awarded the prestigious Hackett Professor of Agriculture Chair at The University of Western Australia, 2012; Member of the Order of Australia (AM) in the Queen's Birthday Honours List, 2011; gold medal and citation from the former President of India, Dr APJ Abdul Kalam, for his international contribution to agricultural science and education, 2009; elected as a Fellow of the Australian Academy of Technological Sciences and Engineering (FTSE), 2005; Urrbrae Memorial Award for his contribution to Australian agricultural science and the industry, 2001.

Fellowships/ Memberships:

Fellow of the Pakistan Academy of Science; Fellow, African Academy of Science; Fellow, Australian Academy of Technological Science and Engineering; Member, Australian Society of Agronomy; Member, European Society of Agronomy; Member, European Grain Legume Association; Member, Indian Society of Pulse Research; Member, International Society of Lentil Research; Fellow, Australian Ag Institute Australia.

Research/Areas:

Over 30 years' experience in agricultural research, teaching and management in both Australia and overseas. Developed a national and international reputation in agricultural science especially in the fields of crop physiology, production agronomy, farming systems, genetic resources, breeding research in cereal, grain and pasture legumes and oilseed crops. Conducted research on adaptation of crops to dryland environments and the phenological, morphological, physiological, biochemical and genetic traits that enable crops to cope with various abiotic stresses.

As a result of personal research and with others with whom he collaborates, Australia has become one of the major grain legume (pulse) exporting nations in the world. Pioneering research on chickpea has contributed enormously to the Australian chickpea industry, which is currently valued at more than \$600 million per annum.

Trained numerous Honours, MSc and PhD students. Developed an extensive network of scientists within Australia and has also established a diverse range of overseas (China, India, Turkey, Syria, Iraq, Iran, Saudi Arabia, Oman, Malaysia, East Timor, Nepal, Bangladesh, Pakistan, Europe, Canada, USA) collaborative research and educational projects. He holds a number of national and international committee positions.



Smith, David L.

Foreign Fellow: Elected 2017

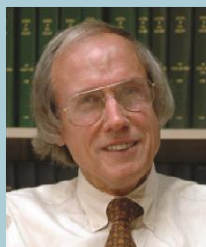
Born in USA, on June 7, 1944

Emeritus Professor of Chemistry,
University of Nebraska, USA

Tel: 970 264 6647

Email: dsmith7@unl.edu

- Education:** B.S. 1966, Ph.D. 1969, University of Kansas, Lawrence, Kansas; Postgraduate research at the University of Utah, Salt Lake City, Utah
- Positions Held:** Postdoctoral Research Associate, Department of Chemistry, University of Utah, 1969-1973; NATO Fellow, University of Paris-Sud, Orsay, France, 1974; Research Assistant Professor, University of Utah, 1975-1980; Research Associate Professor, University of Utah, 1981-1984; Associate Professor, Department of Medicinal Chemistry and Pharmacognosy, Purdue University, 1984-1989; Professor, Department of Medicinal Chemistry and Pharmacognosy, Purdue University, 1990-1994; Professor, Department of Chemistry, Director of Nebraska Center for Mass Spectrometry, University of Nebraska, 1994-2004.
- Fellowships/Memberships:** Thesis Honors; NATO Fellow, Petroleum Research Fund Fellowship; USAID Science Advisor for Pakistan; Editorial Board, Analytical Biochemistry; Editorial Board Molecular and Cellular Proteomics; National Institutes of Health Bioanalytical, Engineering and Chemistry Study Section; many ad-hoc Review Committees for the National Institutes of Health; CoChair Asilomar Conference on Mass Spectrometry; Fogarty Fellowship for Research at the Institute de Biologie Structurale, Grenoble, France; Protein Society; American Society for Mass Spectrometry; American Chemical Society; Association for Research in Vision and Ophthalmology.
- Research/Areas:** Physical Chemistry, Mass Spectrometry, Protein Structure and Dynamics.



Stein, Gary

FOREIGN FELLOW: Elected 1997

Born in 1943

Chair, Department of Biochemistry,
Co-Director, Vermont Cancer Center Burlington, VT, USA.

Tel: (802) 656-4874

Fax: (802) 656-8220

Email: gary.stein@med.uvm.edu

Education:

B.A., Biology, Hofstra University, Hempstead, New York, 1965; M.S., Biology, Hofstra University Hempstead, New York, 1966; Ph.D., Biology, University of Vermont, Burlington, Vermont, 1969.

Positions Held:

Temple University, Department of Pathology Philadelphia, Pennsylvania, 1969 – 1972; Postdoctoral Fellow (with Dr. Renato Baserga), University of Florida College of Medicine Department of Biochemistry and Molecular Biology, Gainesville, Florida; Assistant Professor, 1972 – 1975; Associate Professor, 1975 – 1979; Professor, 1979 – 1987; Associate Chairman, 1981 – 1986; University of Massachusetts Medical School Department of Cell Biology, Worcester, Massachusetts: Professor and Chairman, 1987 – present; Haidak Distinguished Professor & Chair of Cell Biology; Professor of Medicine; University of Massachusetts Cancer Center: Associate Director, 1993 – 1994; Deputy Director for Research, 1994 – 2005; Deputy Director, 2005 – 2009; Interim Director, 2009 – 2010; Co-Director, 2010-present; Center for Stem Cell Biology & Regenerative Medicine: Interim Director, 2007 – 2010; Director, The Human Embryonic Stem Cell Core, 2007-present.

Awards:

Basil O'Connor Faculty Fellow, 1970-1972; Elizabeth Winston Lanier-Kappa Delta Award from the American Academy of Orthopaedic Surgeons and the Orthopaedic Research Society (for defining interrelationships between control of cell growth and tissue specific gene expression), 1993; Brown University Steroid Hormone Research Award, 1997; Elected Member: Pakistan Academy of Sciences, 1997; Appointed: The Gerald L. Haidak, M.D. and Zelda S. Haidak Distinguished Professor and Chair of Cell Biology, 1999; William F. Neuman Award from the American Society for Bone and Mineral Research (with Jane Lian, for defining nuclear organization of gene regulatory machinery for biological control and cancer), 2007.

Fellowships/ Memberships:

Elected Fellow, American Association for the Advancement of Science; American Association for Cancer Research; American Chemical Society; American Society for Cell Biology; Fellow: American Association for Advancement of Science; American Society for Microbiology; International Cell Cycle Society Southeastern Cancer Research Association; American Society of Biological Chemists; New York Academy of Sciences; American Society of Bone and Mineral Research; Orthopedic Research Society; American Society of Hematology; International Society for Experimental Hematology; International Bone and Mineral Society; International Society for Stem Cell Research.\

Research/Areas:

The pluripotent cell cycle in human embryonic and reprogrammed (iPS) stem cells. Regulation of cell cycle, cell growth and phenotypic (skeletal and hematopoietic) gene expression in normal and cancer cells. Interrelationships between proliferation and differentiation. Combinatorial organization, assembly and integration of gene regulatory machinery in nuclear microenvironments.



Ting, Samuel C.C. (Nobel Laureate in Physics)

FOREIGN FELLOW: Elected 1983

Born in Ann Arbor, Michigan, USA, on January 27, 1936

Thomas Dudley Cabot Professor of Physics,

Massachusetts Institute of Technology (MIT), USA

Education:

Early education in Chungking, Nanjing (China) and in Taiwan, 1936-1956; University of Michigan, Ann Arbor, Michigan, USA: BSE (Physics & Mathematics), 1959; Ph.D. (Physics), 1962.

Positions Held:

Presently Thomas Dudley Cabot Professor of Physics, Massachusetts Institute of Technology (MIT); Leader, Experimental Group, Deutsches Elektronen Synchrotron, Hamburg, Germany, 1966; Assistant Professor, Columbia University, New York, 1964.

Awards:

Ford Foundation Fellowship, 1963 (working at European Organization for Nuclear Research, Geneva, Switzerland); Nobel Prize in Physics, 1976; Ernest Orlando Lawrence Award, US Government, 1976; The Enringen Medal, Society of Engineering Science, 1977; DeGasperi Award in Science, Government of Italy, 1988; Golden Leopard Award for Excellence by the Town of Taormina, Italy, 1988; Gold Medal for Science by the City of Brescia, Italy, 1988; NASA Public Service Medal, 2001; World Federation of Scientists Erice Prize for Peace, 2011; Award for Compelling Results in Physical Sciences, NASA, 2017; Doctor Honoris Causa by University of Michigan, Ann Arbor, 1978; Chinese University, Hong Kong, 1987; University of Bologna, Italy, 1988; Columbia University, New York, 1991; University of Science & Technology, China, 1992; Moscow State University, Moscow, 1992; University of Bucharest, Romania, 1993; National Tsing Hua University (Taiwan), 2002; Hong Kong Baptist University, 2003; National Chiao Tung University (Taiwan), 2003; Rheinisch-Westfälische Technische Hochschule Aachen, 2004; National Central University (Taiwan), 2005; Hong Kong University of Science and Technology, 2005; Gustavus Adolphus College, 2013, etc.

**Fellowships/
Memberships:**

Ford Foundation Fellowship, 1963 (working at European Organization for Nuclear Research, Geneva, Switzerland); Member, American Academy of Arts and Sciences, 1975; Member, Academia Sinica, 1976; Member, US National Academy of Sciences, 1977; Foreign Member, Soviet Academy of Sciences, 1988; Foreign Member, Hungarian Academy of Sciences, 1993; Foreign Member, Chinese Academy of Sciences, 1994; Foreign Member, Russian Academy of Sciences, 1995; Member, Deutsche Akademie Der Naturforscher Leopoldina (Germany), 1996; Foreign Member, Royal Spanish Academy of Science, 2003; Honorary Fellow of the Tata Institute of Fundamental Research (India); Fellow, American Association for the Advancement of Science, 2013.

Research/Areas: Physics.



Windley, Brian Frederick

FOREIGN FELLOW: Elected 2008

Born in London, UK, on Jan 19, 1936

Emeritus Professor of Tectonics, University of Leicester, UK

Tel: 0116-2414035

Fax: 0116-2523918

Email: brian.windley@btinternet.com

Education:

University of Leicester, UK: B.Sc., 1960; University Exeter, UK: Ph.D., 1963.

Positions Held:

University of Leicester, UK: Emeritus Professor of Tectonics, 2001 to date; Professor of Geology, 1982-2001; Head, Department of Geology, 1983-1986; Reader, Department of Geology, 1975-1982; Lecturer, Department of Geology, 1968-1975. Geologist, Geological Survey of Greenland, Copenhagen, Denmark, 1963-1968. Visiting Professor: Tokyo Institute of Technology, Japan, 2001-2002; Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing, 2002 to date.

Awards:

Bigsby Medal, Geological Society of London, 1977; Murchison Medal, Geological Society of London, 1985. Bronze Medal, University of Helsinki, Finland, 1991. Leopold von Buch Medal, Geological Society of Germany, 2016. Honorary Fellow, Geological Society of America, 2015. Highly Cited Researcher, Web of Science 2019.

**Fellowships/
Memberships:**

Fellow of the Geological Society of London, 1960; Fellow, the Geological Society of America, 1977; Fellow, Geological Association of Canada, 1979; Fellow, Geological Society of India, 1979; Honorary D.Sc. degree, University of Leicester, 1978; Member, Geological Society of Edinburgh, 1965; Mineralogical Society of London, 1974; Royal Geographical Society, 1990; Royal Society of Asian Affairs, 1996; American Geophysical Union, 1997.

Research/Areas: Evolution of the continents with special contributions to understanding Archaean to Cenozoic mountain belts worldwide.

13. ADDITIONAL FOREIGN FELLOWS

(PROFILES NOT PROVIDED)

Sagadiev, K.A	Elected 1998
Kazi, Abdul Mujeeb	Elected 2001
Panjwani, Noorjahan	Elected 2001
Alam, M. Sajjad	Elected 2004
Agre, Peter (Nobel Laureate, Chemistry 2003)	Elected 2008
Plant, Tony M.	Elected 2008
Rode, Bernd Michael	Elected 2016
Hasnain, S. Samar	Elected 2017
Wei, HUANG	Elected 2018
Betzel, Christian	Elected 2019
Hussain, Sayed Amjad	Elected 2020

14. DECEASED FOREIGN FELLOWS

Prof. Dr. Norman E. Borlaug, Noble Laureate	Elected 1982
Prof. Dr. H. Hartmann, Nobel Laureate	Elected 1982
Prof P.A.M. Dirac, F.R.S., Nobel Laureate	Elected 1982
Prof. Dr. John Bardeen, Nobel Laureate	Elected 1982
Dr. Ralph Randles Stewart E.	Elected 1983
Dr. George Beadle, Nobel Laureate	Elected 1983
Prof. Dr. Gell-Mann Murray, Nobel Laureate	Elected 1983
Prof. Dr. Wolfgang Voelter	Elected 1983
Dr. M. I. Ibrahim	Elected 1986
Prof. R. H. Haynes	Elected 1995
Prof. Dr. Leopoldo de Meis	Elected 1996
Prof. Dr. Pulat Khabibullaev	Elected 1997
Prof. Dr. Mu Shik Jhon	Elected 2000
Prof. Dr. Yousaf Hassan Bangash	Elected 2003
Dr. Nurul Islam	Elected 2004



15. MEMBERS OF THE ACADEMY

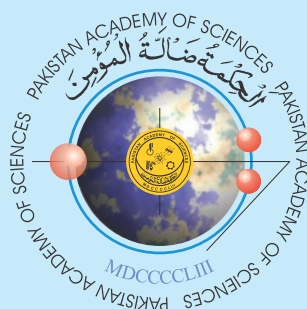
**Pakistan Academy of Sciences
2022**

1. **Dr. Muhammad Sayab** Elected 2012
National Centre of Excellence in Geology
University of Peshawar, Peshawar
2. **Dr. Syed Ghulam Musharraf** Elected 2013
HEJ Research Institute of Chemistry
Dr. Panjwani Center for Molecular Medicine and Drug Research
International Center for Chemical and Biological Sciences
University of Karachi, Karachi
3. **Dr. Asma Saeed** Elected 2013
Food and Biotechnology Research Centre
Pakistan Council of Scientific and Industrial Research Laboratories
Complex, Lahore
4. **Dr. Muhammad Ansar** Elected 2013
Department of Biochemistry
Faculty of Biological Sciences
Quaid-i-Azam University, Islamabad
5. **Dr. Bilal Haider Abbasi** Elected 2014
Department of Biotechnology
Faculty of Biological Sciences
Quaid-i-Azam University, Islamabad
6. **Dr. Reaz Uddin** Elected 2014
Dr. Panjwani Center for Molecular Medicine and
Drug Research Center for Chemical and Biological Sciences
University of Karachi, Karachi
7. **Dr. Gul Shahnaz** Elected 2014
Department of Pharmacy
Faculty of Biological Sciences
Quaid-i-Azam University, Islamabad
8. **Dr. Tariq Mahmood** Elected 2015
Department of Plant Sciences
Faculty of Biological Sciences
Quaid-i-Azam University, Islamabad
9. **Dr. Nudrat Aisha Akram** Elected 2016
Department of Botany
GC University, Faisalabad
10. **Dr. Mushtaq Ahmed** Elected 2016
Department of Plant Sciences
Faculty of Biological Sciences
Quaid-i-Azam University, Islamabad



11. **Dr. Zia-ur-Rehman** Elected 2016
Department of Chemistry
Quaid-i-Azam University, Islamabad
12. **Dr. M. Farooq** Elected 2017
Department of Agronomy
University of Agriculture, Faisalabad
13. **Dr. Sammer Yousaf** Elected 2017
H.E.J. Research Institute of Chemistry
University of Karachi, Karachi
14. **Dr. Muhammad Zaffar Hashmi** Elected 2017
Department of Chemistry
COMSATS Institute of Information Technology, Islamabad
15. **Dr. Syed Sikandar Azam** Elected 2018
National Center of Bio Informatics
Quaid-i-Azam University, Islamabad
16. **Dr. M. Imran Arshad** Elected 2018
Institute of Microbiology
University of Agriculture, Faisalabad
17. **Dr. Aqeel Javeed** Elected 2018
Department of Pharmacology & Toxicology
University of Veterinary and Animal Sciences, Lahore
18. **Dr. Shujaul Mulk Khan** Elected 2019
Department of the Plant Sciences
Faculty of Biological Sciences
Quaid-i-Azam University, Islamabad
19. **Dr. M. Arif Nadeem** Elected 2019
Department of Chemistry
Quaid-i-Azam University, Islamabad
20. **Dr. Muhammad Usman** Elected 2019
Experimental Physics Laboratories
National Center for Physics
Quaid-i-Azam University Campus, Islamabad
21. **Dr. Ali Haider** Elected 2020
Department of Chemistry
Quaid-i-Azam University, Islamabad
22. **Dr. Muhammad Ali** Elected 2020
Department of Biotechnology
Faculty of Biological Sciences
Quaid-i-Azam University, Islamabad

- | | | |
|-----|--|--------------|
| 23. | Dr. Muazzam Ali Khan Khattak
Department of Computer Sciences
Quaid-i-Azam University, Islamabad | Elected 2020 |
| 24. | Dr. Nazir Ahmad Khan
Department of Animal Nutrition
University of Agriculture, Peshawar | Elected 2021 |
| 25. | Dr. Muhammad Ishtiaq Ali
Department of Microbiology
Quaid-i-Azam University, Islamabad | Elected 2021 |
| 26. | Dr. Javed Iqbal Saggu
Department of Physics
Quaid-i-Azam University, Islamabad | Elected 2021 |



PAKISTAN ACADEMY OF SCIENCES ADDRESS:

A. 3-Constitution Avenue, Sector G-5/2,
Islamabad, Pakistan

B. School of Physical Sciences, (Undergraduate Block),
Quaid-e-Azam Campus, University of The Punjab,
Lahore, Pakistan

Tel: +92-51 9204843: +92-51 9207140

Email: sec.gen@paspk.org - editor@paspk.org