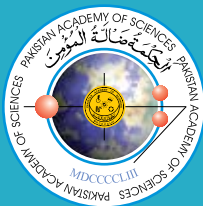




YEAR BOOK

2018-2019

PAKISTAN ACADEMY
OF SCIENCES



YEAR BOOK 2018 - 2019

Pakistan Academy of Sciences
2020

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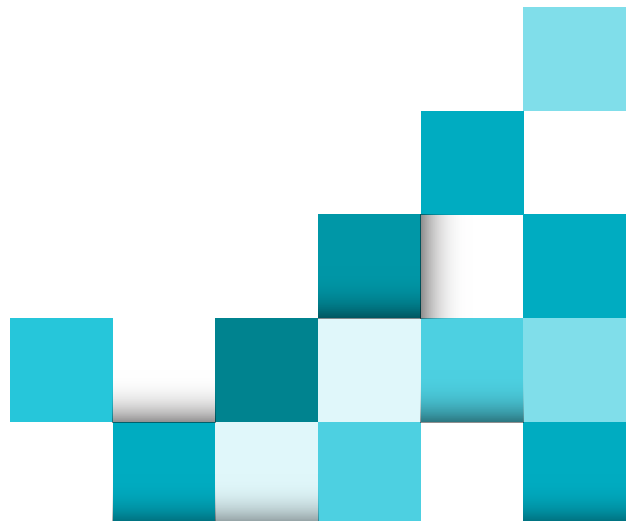
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FOREWORD

Dr M Qasim Jan President



As in the past, the Pakistan Academy of Sciences (PAS) remained active during 2018 and 2019. It pursued several initiatives with international academies and got engaged in many activities nationally. The academy became the Founding Member of the Chinese Academy of Sciences (CAS) initiative “Association of the International Science Organizations (ANSO)” on the Belt & Road. It also remained in contact with many of the 20 international academies with whom MOUs have been signed. The Academy was visited on Dec 22, 2017, by a delegation of the National Academy of Sciences of Belarus to discuss mutual interests in Agriculture, Biotechnology, Pharmacy, Farm Machinery, and Capacity Building. A four-member delegation of CAS visited PAS on March 8, 2018, to communicate on the progress of the establishment of the China-Pak Joint Research Center of Earth Sciences at Islamabad. Another delegation of the CAS visited on May 20, 2019, to discuss: (1) Establishment of the Research Centre on Earth Sciences, (2) Joint projects and research activities between China and other countries in the region (including Pakistan), as initiated by ANSO in the Belt and Road region, and (3) Education Support to Pakistani Students in China. The Academy was also visited by members of the US National Academy of Sciences, Engineering, and Medicine (US NASEM, March 18, 2019) and of the Association of Academies and Societies of Sciences in Asia (AASSA, Aug 19-21, 2019).

The PAS hosted/ jointly convened conferences, seminars, and workshops with international and national academies and science organizations. Some of these were: Launching of Commonwealth Environment Day with Technology Times, March 12, 2018; Workshop on Plant Biotechnology for Food & Security at FC College University (FCCU) Lahore (Nov 28, 2018); Commemorative Ceremony for Prof. Stephen Hawking (April 2, 2018, HEC); 16th National Symposium on Frontiers in Physics, at GCU Lahore (Jan 29-31, 2019,); International Conference on Microbes for Sustainable Agriculture, at FCCU (Lahore, March 25-28, 2019; International Conference on Chemical Sciences, at QAU Islamabad (April 24-26, 2019); International conf. on Complementary Medicine, Islamabad (with AAASA-PAS, Aug 19-21 2019); International Symposium on Functional Nano-materials at Air Univ. Islamabad (Oct 8, 2019); One-Health Fellowship Program in Pakistan (US NASEM-PAS, Nov 17, 2019,); Seminar on Science Diplomacy (Nov 27, 2019, in collaboration with Ministry of Foreign Affairs and COMSTECH; over 200 participants, including 20 embassies). The Academy continued with its Popular Science Lecture Series at PAS and initiated a new project with Technology Times for Popularization of Science in Pakistan.



Most Fellows and members of the PAS remained actively engaged in research, contributing papers to international journals, as well as writing/editing books. During 2018,19 the Academy provided support for ten (10) research projects to its Fellows and Members. The Proceedings of the Academy get regularly published and attract papers from outside Pakistan. It devoted a Special Issue to contributions from the AASSA-PAS Regional Workshop on “Complementary Medicine as an Answer to Challenges Faced in Achieving Sustainable Goals in Health” held in 2019. Some special publications were: 1) Report on Water Security Issues of Agriculture in Pakistan (Dr. Riaz Hussain Qureshi and Dr. M. Ashraf) 2019, 2) Launching of Handbook on Good Clinical Laboratory Practices in Pakistan by PAS & NASEM (March 2019) and 3) Dr. Brian F. Windley (Foreign Fellow and distinguished geologist), published “English-Russian, Russian-English Dictionary of Idioms” 2019. Several Fellows and Members of the Academy had prestigious postings and received awards and other recognitions at the international and national levels. These included the election of Dr. M. Asif Khan as Fellow of the Chinese Academy of Sciences, and conferment of Pakistan civil awards on Dr. Tasawar Hayat (Hilal-i-Imtiaz, 2019) and Dr. Zabta Khan Shinwari (Sitar-i-Imtiaz, 2018).

Fellows and members of the Academy actively participated in a large number of international conferences, symposia, and workshops. These included the Inauguration of the “Alliance of International Science Organizations (ANSO)” in Beijing (November 3-5, 2018) in which Prof. Chunli Bai, President of CAS, was elected as President, and Academician A. M. Sergeev, President of Russian Academy of Sciences and Prof. Qaim Jan, President PAS, as Vice Presidents. Prof. Qasim Jan signed the agreement whereby PAS became a Founding Fellow of the ANSO. It is worth noting that the first meeting about the prospects of establishing ANSO was jointly hosted by PAS-CAS in Islamabad (July 16, 2017) and attended by a dozen academies from Asia and Europe. The ANSO is a unique initiative providing a hub for scientists worldwide to collaborate and address the future direction of sciences and global threats to humanity, such as global warming, climate change, food security, energy, water shortage, SDGs, higher education, etc. Dr. Jan addressed the General Assembly of the International Academy of Sciences of the Silk Road (IASSR), at Xi’an, China, Sept 10, 2019, and the Sri Lankan Association for the Advancement of Science in Colombo on Dec 8-13, 2019.

The charter has placed on the Academy an important agenda to follow, including consultative and advisory status on policy matters of national and international importance in Science and Technology. In the past two years, the Academy explored the possibilities of lending advice and services in critically important areas in S&T and Education. Resource constraint has been a hindrance in the vigorous pursuit of expanded scientific activities, so efforts were made to convince the Government that strengthening the Academy would be in the interest of S&T in Pakistan. Some of our bilateral understandings with other Academies have remained dormant and it is time to activate these MoUs to achieve the stipulated goals through cooperation. Consequently, two major proposals were submitted to the Planning Commission (PC-1) by the Pakistan Academy of Sciences, soliciting funds for the fulfillment of its statutory obligations and pursuing new initiatives: 1) Upgradation and Capacity Building of Pakistan Academy of Sciences, submitted through Higher



Education Commission, and 2) Science Diplomacy Initiatives: Strengthening of International Collaboration of the Pakistan Academy of Sciences, submitted through the Ministry of Foreign Affairs.

In summary, the Academy has become a dynamic institution, commanding national respect and international recognition. We have the potential to do better with the continued support and contribution of our distinguished Fellows/Members and patronage of the Government of Pakistan.

Before ending this note, I would like to express my deepest sorrow over the sad demise of eleven (11) distinguished Fellows over the two years, including Dr. Ishfaq Ahmad, a former President of the Academy. May their souls rest in eternal peace.



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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 79 Fellows, 30 Foreign Fellows, and 21 Members, who have been elected by the General Body. The President of the Academy for the term 2018-2020 is Prof. Dr. M. Qasim Jan, *HI, SI, TI*.





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 |

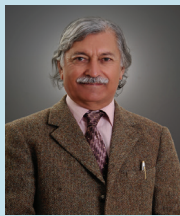
2.3 Former Secretaries General

- | | |
|---|----------------------|
| 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 2018 - 2020 Council of the Academy



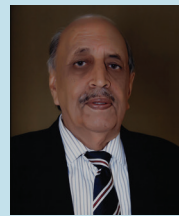
Prof. Dr. M. Qasim Jan
HI, SI, TI
President



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



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



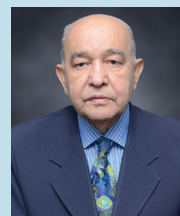
Dr. Anwar Nasim
SI
Past President



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



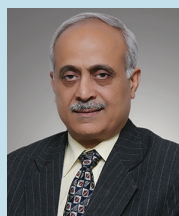
Prof. Dr. Saqib Ali
Member



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



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



Prof. Dr. Iqrar Ahmed Khan
SI
Secretary, Lahore Chapter



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



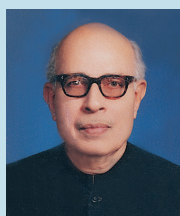
Prof. Dr. Masoom Yasinza
Secretary, Quetta Chapter



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.



A 4 member delegation of Chinese Academy of Sciences (CAS) visited the Pakistan Academy of Sciences Headquarter, Islamabad to show the progress of the establishment of China-Pak Joint Research Center of Earth Sciences in Pakistan - March 8, 2018



ECO Science Foundation in collaboration with IAP Science Education Programme, Pakistan Academy of Sciences and Higher Education Commission Islamabad organized the Workshop on “Fusion of OBOR Civilizations School Curriculum Design” in Islamabad - April 9-10, 2018



Visit of Belarusian Expert Delegation to the Pakistan Academy of Sciences - December 6, 2018



Launching Ceremony of Handbook on Good Clinical Laboratory Practices in Pakistan by Pakistan Academy of Sciences & US National Academies of Science, Engineering and Medicine (NASEM) - March 18, 2019



Visit of Chinese Academy of Sciences (CAS) Delegation to Pakistan Academy of Sciences (PAS) - May 20, 2019



Participants of Inaugural Session of AASSA-PAS Regional Workshop on Complementary Medicine as an Answer to Challenges Faced in Achieving Sustainable Goals in Health with the Chief Guest, **H.E. Zartaj Gul Wazir**, Minister of State for Climate Change, and Guest of Honour **Prof. Dr. Atta-ur-Rahman**, former Minister S & T and Higher Education organized in Islamabad by the Pakistan Academy of Sciences (PAS) and the Associations of Academies and Societies of Sciences in Asia (AASSA) - August 19-21, 2019



Participants of Concluding Session of AASSA-PAS Regional Workshop on Complementary Medicine as an Answer to Challenges Faced in Achieving Sustainable Goals in Health with the Chief Guest, **H.E. Mr. Chaudhry Fawad Hussain**, Federal Minister for Science and Technology, Minister of State for Climate Change, and Guest of Honour **Prof. Dr. Atta-ur-Rahman**, former Minister S & T and Higher Education organized in Islamabad by the Pakistan Academy of Sciences (PAS) and the Associations of Academies and Societies of Sciences in Asia (AASSA) August 19-21, 2019



Participants of One - Health (1 - H) Research Symposium organized by the Pakistan Academy of Sciences (PAS) in Collaboration with the US National Academies of Sciences, Engineering, and Medicine (NASEM) – November 17, 2019



Participants of Seminar on Science Diplomacy with the Chief Guest, Dr. Tariq Banuri (Chairman, Higher Education Commission, Islamabad) jointly organized by Ministry of Foreign Affairs of Pakistan, Pakistan Academy of Sciences and COMSTECH at COMSTECH Secretariat, Islamabad - November 27, 2019

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) (a) 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)

(b) *Fellows shall be Pakistani Social Scientists eminent for their original contribution to social sciences, who will be elected according to the procedure laid down in the Bye-Laws. The total number of Fellows in social sciences will be fifty (50)

(*As approved 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 November 1, 2017)

- 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, excepts 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;
- vii. To be the custodian of the Files and other property of the Academy.

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.

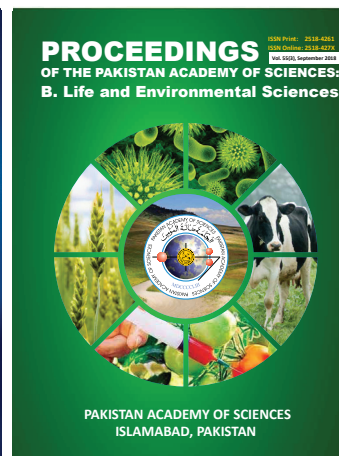
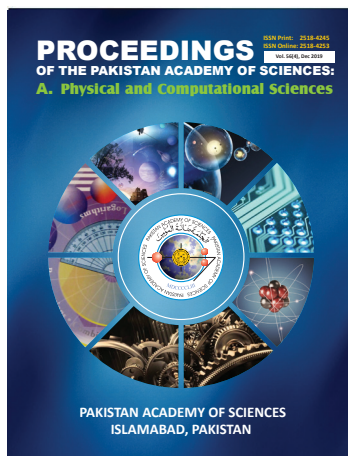
Since March 2016, the Proceedings have been bifurcated into Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences; and Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences. The affairs of the Proceedings are managed by the Editor-in-Chief, Editor, 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 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 publication of manuscripts are received by the Editor at the following address:

Editor

Pakistan Academy of Sciences
3-Constitution Avenue
Islamabad, Pakistan
Email: editor@paspk.org





Discipline Editors

Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences

- i. **Engineering Sciences:**
Prof. Dr. Fazal A. Khalid,
University of Engineering &
Technology, Lahore
- ii. **Computer Sciences:**
Prof. Dr. Sharifullah Khan,
National University of Science &
Technology, Islamabad
- iii. **Mathematical Sciences:**
Prof. Dr. Muhammad Sharif,
University of the Punjab, Lahore
- iv. **Physical Sciences:**
Prof. Dr. M. Aslam Baig,
National Center for Physics
Quaid-i-Azam University campus,
Islamabad

Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences

- i. **Animal Sciences:**
Prof. Dr. Abdul Rauf Shakoori,
University of the Punjab,
Lahore
- ii. **Environmental Sciences:**
Prof. Dr. Zahir Ahmad Zahir,
University of Agriculture, Faisalabad
- iii. **Health Sciences:**
Prof. Dr. Rumina Hasan,
The Aga Khan University, Karachi
- iv. **Plant Sciences:**
Prof. Dr. Muhammad Ashraf,
Pakistan Science Foundation,
Islamabad

The following issues of both journals of the Pakistan Academy of Sciences were published during the years 2018 and 2019:

Volume 55 (No. 1), March 2018
Volume 55 (No. 2), June 2018
Volume 55 (No. 3), September 2018
Volume 55 (No. 4), December 2018

Volume 56 (No. 1), March 2019
Volume 56 (No. 2), June 2019
Volume 56 (No. 3), September 2019
Volume 56 (No. 4), December 2019

Both journals of the Pakistan Academy of Sciences are freely accessible on website of the Academy, i.e., <http://www.paspk.org/proceedings/> and <http://www.ppaspk.org>.

6.2. Open Journal System (OJS)

The Higher Education Commission (HEC), Islamabad required that the Proceedings of the Pakistan Academy of Sciences (PPAS) must be switched to Open Journal System (OJS) which is an online Submission and Review System. As per requirement of HEC, the “Proceedings of the Pakistan Academy of Sciences” have now been shifted to OJS (Open Journal System). The new website of the PPAS (www.ppaspk.org/) is now functional and current issues have been uploaded. Accordingly, the mandatory condition of the HEC for placement of journals on OJS has been fulfilled by the Academy. The Online Manuscript Submission and Review Process for the PPAS are in progress. For the time being, the manuscript submission and review process through email has been maintained till online manuscript submission and review process is adequately tested.

The Manuscripts can be submitted online at <http://www.ppaspk.org>.

6.3. Newsletter of the Pakistan Academy of Sciences

Following issues of quarterly Newsletter of the Pakistan Academy of Sciences were published during the years 2018 and 2019:

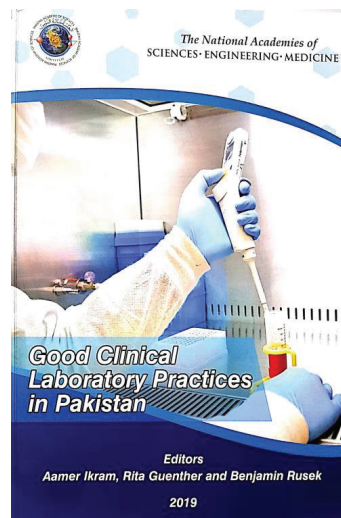
- Volume 13 (No. 1), January 2018
- Volume 13 (No. 2), April 2018
- Volume 13 (No. 3), July 2018
- Volume 13 (No. 4), October 2018
- Volume 14 (No. 1), January 2019
- Volume 14 (No. 2), April 2019
- Volume 14 (No. 3), July 2019
- Volume 14 (No. 4), October 2019



In addition to publishing hard copies of the Newsletter, it is also accessible at official website of the Academy, i.e., <http://www.paspk.org/all-newsletters/>.

6.4. Handbook on Good Clinical Laboratory Practices in Pakistan

The Pakistan Academy of Sciences (PAS) in collaboration with the National Academies of Sciences, Engineering and Medicine (NASEM), USA, launched the first edition of a comprehensive handbook on “Good Clinical Laboratory Practices in Pakistan” on March 18, 2019 at Marriott Hotel, Islamabad. The handbook has discrete sections focusing on laboratory management, biosafety, laboratory operations & quality management systems. As such, this Handbook is intended to serve as an informational guide for clinical laboratories in order to improve the health and wellbeing of people and animals in Pakistan, in accordance with the concept of One Health. Syed Abu Ahmad Akif, Member, Prime Minister’s Inspection Commission and Maj. Gen. Tahir Khadim were the chief guests of the ceremony. Prof. Dr. M. Aslam Baig, Secretary General PAS, represented Pakistan Academy of Sciences at the Laboratory Handbook Launch Ceremony.



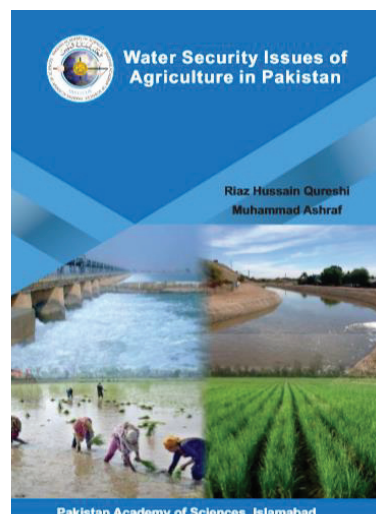
Prof. Dr. Zabta Khan Shinwari (Former Secretary General, PAS) led a team of 22 experts from Pakistan to participate in the joint Pakistan-U.S. Workshop to “Review PAS-NAS Clinical Laboratory Handbook” in Bangkok, Thailand from January 28-30, 2018. The Handbook has been authored by Pakistani laboratory experts from various specialities in collaboration with their U.S. counterparts.

The Handbook has been written in simple format, especially for laboratory technical staff working in public, private and university/academic laboratories across Pakistan. Maj. Gen. Aamer Ikram (Executive Director, NIH) and Dr. Dave Franz led the effort from the US Pakistan PAS and US NASEM sides respectively.



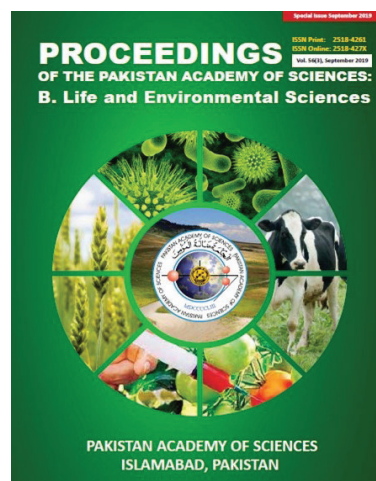
6.5. Report on Water Security Issues of Agriculture in Pakistan

Pakistan is confronting several issues of national concern and the issue of growing water scarcity, specially the water security issues of agriculture is among the prime concerns at the moment. Prof. Dr. Riaz Hussain Qureshi, a soil scientist (Prof. Emeritus and former Vice Chancellor, University of Agriculture, Faisalabad) and Fellow of the Pakistan Academy of Sciences, and Dr. Muhammad Ashraf, an agricultural engineer (Director General and former Chairman, Pakistan Council of Research in Water Resources, Islamabad) have jointly compiled and published the book on “Water Security Issues of Agriculture in Pakistan” at the platform of the Academy. It provides a comprehensive overview of the status of water security issue in Pakistan and encompasses features such as water availability indicators, water quality, statistics of land and water use in Pakistan, water wastage at the field level, causes of water shortage and the way forward, misuse of water, key forces of climate change affecting the future of water security in the country, water storage situation and misconceptions about dams, dryland agriculture, implementation of national water policy-2018, solutions for a way forward to secure water for agriculture in Pakistan. The book emphasizes the need for a closer alignment between water and agricultural policies and makes the case for immediate implementation of “no-regrets” strategies which have both positive development outcomes and make agricultural water supply systems resilient to future impacts. The book has been distributed among the relevant professionals, policy makers, stake holders and water managers for their perusal.



6.6. Special Issue: Proceedings of the Associations of Academies and Societies of Sciences in Asia (AASSA) and Pakistan Academy of Sciences (PAS) Regional Workshop

A special issue was published by the Pakistan Academy of Sciences (PAS) as a result of regional workshop on “Complementary Medicine as an Answer to Challenges Faced in Achieving Sustainable Goals in Health” held on August 19 - 21, 2019 at PAS Secretariat, Islamabad. The special issue included the research and review articles presented by the invited speakers and guests on the complementary medicine and sustainable developmental goals role of media and practitioners in highlighting the importance, and benefits, current issues and challenges in Asia for herbal medicine followed with the land and tenure and their sustainable use.



Global surveys and scientific studies indicate that about 80% of the world population is dependent on the traditional, folklore or herbal medicines, as they possess certain advantages over the conventional medicines like being economical and having no side effects. Medicinal plants are a huge reservoir of therapeutic chemical entities which can yield massive health care benefits. Plants are rich in such components that can be exploited for beneficial use. At present, the global community is facing threats of drug resistance, as well as emerging and re-emerging infections. In order to deliberate upon the gigantic role of medicinal plants/complementary medicines in treating health care issues and to arrive at possible strategies, this Regional Workshop organized jointly by the Pakistan Academy of Sciences (PAS) and the Association of Academies and Societies of Sciences in Asia (AASSA) in Islamabad during August 2019. Leading experts from Korea, Malaysia, Indonesia, Sri Lanka and Pakistan served as resource persons in this workshop.

At the end of the workshop some recommendations were presented based on the presentations and discussion during the conference in line with the strategies recommended in the World Health Organization (WHO) 2014 – 2023 Strategic Frame Work, for instance, to establish Higher Education and Research to Enhance Quality and Expand the Knowledge base of Traditional and Complementary Medicine and the Integration of Traditional Medicine with Primary Health Care (PHC).

6.7. 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.
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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.
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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.
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7. 2018 - 2019 ACTIVITIES OF THE ACADEMY

7.1. Projects Executed

7.1.1. Projects Executed by Fellows of the Academy

1. Designing fusion antigens for diagnostic and prophylactic applications in tuberculosis; by **Dr. M. Waheed Akhtar**
2. Discovery of Anti-biofilm Agents against Multi-drug Resistance Staphylococcus aureus as Potential New Antibiotics and Study of their Mechanism of Action; by **Dr. Atta-ur-Rahman**
3. Study of therapeutic targeting of tumor necrosis factor alpha in lymphocytes using Nano particles for limiting cardiovascular disease; by **Dr. N. M. Butt**
4. Association of Bone Metabolic Characteristics and Endocrine and Inflammatory Markers, with Severe Obesity in Children and Adolescents; by **Dr. M. Arslan**
5. Effect of Advanced Glycation End products on a Pakistani Breast Cancer Cell line BC-PAK-1: Link between Diabetes and Breast Cancer; by **Dr. M. Iqbal Choudhary**
6. Design Synthesis, α -Amylase and α -Glucosidase Inhibition Study of Pyridine Derivatives for the Treatment of Diabetes Complications and Other Pathologies; by **Dr. Khalid Mohammed Khan**
7. Relation of ABO genotypes and soluble adhesion molecules with myocardial infarction in Pakistani population and methylation status of ABO gene promoter in this disease; by **Dr. M. Perwaiz Iqbal**
8. Mapping Genes Involved in Familial Infertility; by **Dr. Wasim Ahmad**

7.1.2. Projects Executed by Members of the Academy

1. Understanding the Progression of Heart Failure in Ischemic Heart Disease Patients using Metabolomics tool; by **Dr. Syed Ghulam Musharraf**
2. Systematic Screening of Environment Friendly Biodiesel from Non-Edible Oil Yielding Plants; by **Dr. Mushtaq Ahmad**

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

7.2.1. Conferences/Workshops at PAS Headquarters

S. No.	Topic	Organizers	Date
1.	PAS-IAS Condolence Reference of Late Prof. Dr. Ishfaq Ahmad	Pakistan Academy of Sciences, and Islamic World Academy of Sciences	March 1, 2018
2.	Launching of Commonwealth Environment Day	Pakistan Academy of Sciences, and Technology Times	March 12, 2018

3	Workshop on “Fusion of OBOR Civilizations School Curriculum Design”	ECO Science Foundation, IAP-SEP, Higher Education Commission, and Pakistan Academy of Sciences	April 9-10, 2018
4	Seminar and Election of Pakistan Nuclear Society	Pakistan Nuclear Society, Pakistan Academy of Sciences, and Pakistan Science Foundation	May 10, 2018
5	National workshop on “Need and Importance of Innovation in Tibbi Education System”	National Council for Tibb (NCT), and Pakistan Academy of Sciences	December 19-20, 2018
6	Tribute to Dr. Ishfaq Ahmad (Late)	Pakistan Academy of Sciences, and Pakistan Nuclear Society	January 30, 2019
7	Introductory Seminar on China Pakistan Network on Science Popularization-CPNSP	Pakistan Academy of Sciences, and Technology Times	July 8, 2019
8	AASSA-PAS Regional Workshop on “Alternative Medicine as an answer to challenges faced in achieving sustainable goals in health”	Pakistan Academy of Sciences, and Association of Academies & Societies of Sciences in Asia (AASSA)	August 19-21, 2019
9	Book Launching, Science: Talash-e-Haq authored by Prof. Dr. Hamid Saleem, Fellow PAS	Pakistan Academy of Sciences (PAS) and Islamabad Circle	October 18, 2019
10	One-Health Research Symposium	Pakistan Academy of Sciences, and US National Academy of Sciences, Engineering and Medicine	November 17, 2019

7.2.2. Popular Science Lecture Series

S. No.	Topic	Speaker	Date
1	Emerging Research trends for sustainable utilization of Plant Diversity to Industry in Pakistan	Dr. Mushtaq Ahmad (Member PAS) Associate Professor Plant Sciences & Director, Herbarium & Botanical Garden Quaid-i-Azam University, Islamabad	November 6, 2018
2	Global Warming & Impact on South Asia	Dr. Bob Reynolds Adjunct Professor Colorado School of Mines, USA	November 23, 2018
3	Plate Tectonics: Concepts & Issues	Dr. Ghulam Sarwar, Famous Pakistani Geologist, USA	November 23, 2018
4	Science and Humanities	Prof. Dr. Sayed Amjad Hussain Emeritus Professor of Cardiovascular Surgery and Emeritus Professor of Humanities at University of Toledo	January 8, 2019



7.2.3. Commemorative Ceremony for Prof. Stephen Hawking at HEC, Islamabad - April 2, 2018

It was a Joint Venture between Higher Education Commission (HEC) and Pakistan Academy of Sciences (PAS) held at HEC auditorium held on April 2, 2018. Chairman, HEC Dr. Mukhtar Ahmed gave welcome address about Dr. Stephan Hawking's scientific contribution. It was followed by remarks from Dr. Shaukat Hameed Khan, Coordinator General COMSTECH and by Dr. Arshad Bhatti, Dean Faculty of Natural Sciences, CIIT. President PAS, Prof. Dr. M. Qasim Jan gave his inaugural lecture.

7.2.4. International Forum on Science Education - April 9, 2018

The International Forum on Science Education was held in Islamabad on April 9, 2018 in conjunction with the 2018 meeting of the Global Council of the InterAcademy Partnership Science Education Programme (IAP SEP) and a workshop on "Fusion of OBOR Civilizations School Curriculum Design" on April 9-10, 2018. The three events were mainly hosted by the ECO Science Foundation (ECOSF) in strong partnership with Higher Education Commission (HEC) of Pakistan, Pakistan Academy of Sciences and Alif Ailaan. The International Forum was themed; "Quality Science Education at Schools- A Must for Quality Higher Education and Economic Development". The Forum attracted more than 200 speakers including 20 international participants from 12 countries as well as some diplomats from Pakistan based Embassies of various countries. The International Forum engendered animated and constructive deliberations, culminating in the recommendations and outcomes in an "Islamabad Declaration".

President Pakistan Academy of Sciences, Prof. Dr. Qasim Jan opened the Forum and welcomed all the international guests, delegates and local participants. He also spoke about the role of Pakistan Academy of Sciences for promotion of science education in the national development of the country and endorsed the initiative of ECOSF for promotion of science education in Pakistan and neighbouring countries. He also appreciated the IAP-SEP for promoting Science Education in Pakistan.

7.2.5. Global Council Meeting of InterAcademy Partnership Science Education Programme (IAP SEP) - April 10, 2018

The ECO Science Foundation (ECOSF) hosted the Global Council (GC) of InterAcademy Partnership Science Education Programme (IAP SEP) on April 10, 2018 at Marriott Hotel Islamabad, Pakistan under the auspices of Pakistan Academy of Sciences (PAS). The main focus IAP SEP is to promote Inquiry Based Science Education (IBSE) and to improve science literacy among the general population through national academies of sciences.

7.2.6. Popularization of Science in Pakistan - July 2018

Pakistan Academy of Sciences has initiated a new project in collaboration with Technology Times for the popularization of science in the country. In this collaborative venture the Technology Times will record interviews of the Eminent Scientists and Fellows of PAS that will be telecast on different TV Channels. The idea behind this project is to highlight the achievements and contributions of PAS Fellows to the masses to improve the image as well as scientific development of the scientists of the Country. These interviews are based on



the personal life as well as the scientific contributions presented in a relax mood so that general public are made aware of the Scientists and Engineers contributions.

7.2.7. Seminar on Science Diplomacy - November 27, 2019

A one-day seminar on Science Diplomacy was jointly organized by the Ministry of Foreign Affairs of Pakistan, Pakistan Academy of Sciences and COMSTECH at the COMSTECH Secretariat, Islamabad. The event was supported by COMSATS, ECO Science Foundation and Technology Times. This seminar focused on the role of science in diplomacy noting that science, technology and innovation, the key drivers in achieving the United Nations (UN) 2030 Sustainable Development Agenda.

Dr. Aslam Baig, Secretary General PAS, welcomed the Chief Guest, Dr. Tariq Banuri, Chairman HEC and Coordinator General COMSTECH, participants and audience in the inaugural session. The expert/speakers included Prof. Dr. M. Aslam Baig (Secretary General, PAS), Muhammad Kamran Akhter (DG ACDIS/Science Diplomacy, MoFA), Prof. Dr. M. Qasim Jan (Advisor COMSTECH and President PAS), Prof. Dr. Manzoor Hussain Soomro (President ECOSF), Dr. S. M. Junaid Zaidi (Executive Director COMSATS), Syed Ammar Jaffry (Former Additional DG FIA and CEO Security Experts Pakistan), Dr. Zaigham Abbas (Deputy Director IC Wing, Ministry of Climate Change) and Sayyed Paras Ali (CEO/Editor Technology Times).

The seminar was attended by the members of diplomatic corps, the think tank community, public and private sector civil society organizations, members of academia and students from various universities in Islamabad. The Additional Secretary, Ministry of Foreign Affairs, Aftab Khokhar also attended the seminar and appreciated this event in his concluding remarks.

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

1. Two days Symposium entitled: “Food and Nutrition Security and Health: Pakistan Perspective”, January 25-26, 2018, Karachi, Pakistan; by **Dr. Bina Shaheen Siddiqui**
2. International Scientific School (ISS)-2018, from March 12-16, 2018, at National Center for Physics (NCP); by **Dr. M. Aslam Baig**
3. Awareness Seminar on Activities of Pakistan Academy of Sciences and its Membership and Fellowship. December 2017/ March 2018; by **Dr. Masoom Yasinzai**
4. 15th National Symposium on Frontiers in Physics at the GC University Lahore, on 29-31 January, 2018; by **Dr. Ghulam Murtaza**
5. Global Chemist Code of Ethics for all, on 20 March, 2018, at Quaid-i-Azam University, Islamabad; by **Dr. G. A. Miana**
6. Challenges and Opportunities of Herbal Medicine in Contemporary World on August 17-18, 2018, at University of Poonch, Rawalakot; by **Dr. M. Rasul Jan**
7. Fourteenth Biennial Conference of Pakistan Society for biochemistry and Molecular Biology (PSBMB) on “Molecular Biosciences: Research and Innovations” to be held on 9-12 December, 2018; by **Dr. Syed Irtifaq Ali**
8. International Workshop on. “Alternative Medicines as an answer to challenges faced in achieving sustainable goals in health” to be held on August 19-21, 2019 at Pakistan Academy of Sciences, Islamabad; by **Dr. Zabta Khan Shinwari**



9. 1st PU International Conference on Gravitation and Cosmology (1st PUICGC) during 27-31 January, 2019; by **Dr. Muhammad Sharif**
10. 6th Italian-Pakistani Workshop on Relativistic Astrophysics on 24-26 January, 2019 at SNS, NUST, Sector H-12 Islamabad; by **Dr. Asghar Qadir**
11. Research Training Workshop on Advance Eco-physiological Techniques at Institute of Sustainable Halophyte Utilization, University of Karachi from January 10 -11,2019; by **Dr. M. Ajmal Khan**
12. 16th National Symposium on Frontiers in Physics at Government College Lahore on 29-31 January, 2019; by **Dr. Ghulam Murtaza**
13. 39th Pakistan Congress of Zoology (International) at The Islamia College University, Peshawar on March 4-6, 2019; by **Dr. A. R. Shakoori**
14. International School on Physics and Allied Disciplines (ISPAD) -2019 at National Center for Physics (NCP) on March 11-15, 2019; by **Dr. Hafeez R. Hoorani**
15. International Conference on Microbes for Sustainable Agriculture in Forman Christian College University, Lahore, on March 25-28, 2019; by **Dr. Kuaser A. Malik**
16. International Conference on Chemical Sciences at Department of Chemistry, Quaid-i-Azam University, Islamabad from April 24-26, 2019; by **Dr. Amin Badshah**
17. 6th International Conference on “Sustainable Agriculture in changing Climate: Strategies and Management at University of Poonch Rawalakot, Azad Jammu and Kashmir from 19-21 June, 2019; by **Dr. M. Rasul Jan**
18. 2nd International Conference on Nano science and Nanotechnology (ICONN-2019) at Lahore University of Management Sciences (LUMS) from November 1-2, 2019; by **Dr. N. M. Butt**
19. 7th International Symposium-cum-Training Course on Molecular Medicine and Drug Research at International Center for Chemical and Biological Sciences, University of Karachi on November 4 - 7, 2019; by **Dr. M. Iqbal Choudhry**
20. Recent Innovation in Molecular Sciences held on November 06-08, 2019, at University of the Punjab, Lahore; by **Dr. M. Waheed Akhtar**
21. 18th International and 30th National Chemistry Conference on Recent Trends in Chemistry on November 27, 2019 at University of Management and Technology, Lahore; by **Dr. G. A. Miana**

7.3. Travel Grants to the Fellows of the Academy for Participation in Conferences, Workshops, Meetings Abroad

1. Travel Grant for invited talk in the “Asian Council of Science Editor Meeting, Dubai, held in March 20-22, 2018, Carlton Palace Hotel, Deira Dubai; **Dr. Amin Badshah**
2. Travel Grant to present invited talk in the “South Asian Biotechnology Conference (SABC 2018) held on March 28 to 30, 2018, in Colombo, Sri Lanka; **Dr. Azra Khanum**
3. Travel Grant to present invited talk in the “World Congress of Soil Science, Rio de Janeiro, Brazil, held on August 12-17, 2018; **Dr. Abdul Rashid**
4. Partial Travel Grant to present talk and represent PAS in the AASSA International Workshop on “SHARE (Science, Agriculture, Health, Environment and Risk)

Communication: The Importance of Media to Engage Research and Development with Public Understanding at Jakarta, Indonesia from August 5-8, 2018; **Dr. Zabta K. Shinwari**

5. Partial Travel Grant to present talk and represent PAS in FEB RAS- AASSA International Workshop on “Climate change adaptation and mitigation: sustainable agriculture and health security” at Hotel Bira, Birobidzhan, Russia, 01-05 October, 2018; **Dr. Muhammad Qasim Jan**
6. Travel Grant to present invited talk in the “2nd Asia-Pacific Conference on Plasma Physics (AAPPS-DPP 2018), held on November 12-17, 2018, in the Kanazawa, Japan; **Dr. Hamid Saleem**
7. Travel Grant to present invited talk in the “International Symposium: The Plant Microbiome, Exploration of Plant-Microbe Interactions for Improving Agriculture Productivity, Hurghada-Egypt, 18-22 November, 2018; **Dr. Kauser A. Malik**
8. Travel Grant to attend 28th TWAS General Meeting in Trieste, Italy, from November 27-29, 2018; **Dr. Imtiaz Ahmad**
9. Travel Grant for 2nd Regional Conference on Women in Physics at Kathmandu University, Dhulikhel, Kavre, Nepal on March 27-29, 2019; **Dr. Asghari Maqsood**
10. Travel Grant for 10th Alexander Friedmann International Seminar on Gravitation and Cosmology at Saint Petersburg, Russia, on June 23-29, 2019; **Dr. Muhammad Sharif**
11. Travel Grant for 12th International Symposium on Modern Optics and Its Applications (ISMOA 2019) at Jakarta, Indonesia from June 22 - July 5, 2019; **Dr. M. Aslam Baig**
12. Travel Grant for International Conference on Bio Medical Sciences (ICBMS-19) at Istanbul, Turkey, from September 27-28, 2019; **Dr. M. Waheed Akhtar**
13. Travel Grant for 3rd Annual Conference on Microbes and Beneficial Microbes on September 27-28, 2019 at Toronto, Canada; **Dr. Ikram ul Haq**
14. Travel Grant for 3rd International Agricultural Conference at College of Agricultural Duhok University, Iraqi Kurdistan from October 2-3, 2019; **Dr. Khan Bahadar Marwat**
15. Travel Grant for Annual Session of the Sri Lanka Association for the Advancement of Science at University of Colombo, Colombo, from 08-13 December, 2019; **Dr. M. Qasim Jan**
16. Travel Grant for 18th Asian Chemical Congress (ACC) and 20 General Assembly, Taipei Taiwan, December 5 -11, 2019; **Dr. G. A. Miana**

7.4. PC-1 on Up gradation and Capacity Building of Pakistan Academy of Sciences (Natural and Social Sciences) submitted through HEC

The Project Concept Proposal (PC-I) titled “Upgradation and Capacity Building of Pakistan Academy of Sciences (Natural and Social Sciences)” with Capital Cost: Pak Rs. 364.997 million was compiled and submitted to the Planning Commission (GoP) through the Higher Education Commission (HEC). The PC-I was discussed in the Pre-CDWP meeting held at the Planning Commission (P-Block, Pak Secretariat), Islamabad on January 09, 2019. The Post CDWP Meeting was held at PPMI Complex on October 24, 2019 and Secretary General briefed the representatives of P&D Wing (HEC) and Chief (S&T) Planning Commission about



the following revisions/ modifications made in the PC-I Document in the light of decisions of CDWP Meeting held on July 4, 2019:

- (i) Organizational Structure of PAS
- (ii) Achievements of PAS since its inception
- (iii) Exact requirements of Endowment Fund for sustainability of PAS activities
- (iv) Detailed plan of activities of “Policy Advice to Government-Unit” Number of internships decreased from 10 to 3 internees with yearly internship plan.
- (v) Ref. market inflation, the contingency rate was increased from 2% to 5% in budget estimates.
- (vi) Revised PC-I with Capital Cost of Pak Rs. 756.272 M with duration of 36 months (FY: 2019-2022)

The Revised PC-1 submitted to HEC was defended by the President, Secretary General and Admin Officer in the DDWP Meeting on November 28, 2019. Following recommendations were made in the DDWP meeting.

- (i) DDWP increased Endowment Fund by 54 Million
- (ii) Revised Total Endowment Fund: Rs. 500 Million
- (iii) Revised Total Cost of Project: 810.272 Million
- (iv) DDWP provisionally approved the PC-1 subject to the condition that PAS will submit dully completed & signed “Endowment Deed” as soon as possible.
- (v) HEC will issue final approval after endorsement of minutes of meeting by concerned authorities.

7.5. International Liaison

The Pakistan Academy of Sciences has been signing MoUs with different science academies of the world from time to time 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.

7.5.1. 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

7.5.2. 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, Uzbekistan	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. Butt
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 29, 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

7.5.3. 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, Council of the Academy, and especially the President, Prof. Dr. M. Qasim Jan, are striving for follow up actions regarding the MoUs with various Academies. In the interest of rigorous follow up of activities regarding the MoUs, 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.

7.5.4. 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.

Suggestions on ANSO's Future Development

Mr. Jinhua Cao, Director-General of Bureau of International Co-operation of Chinese Academy of Sciences (CAS), in his email asked for opinions and suggestions for the General Assembly of ANSO on November, 3 2018 in Beijing, Prof. Dr. Qasim Jan on behalf of Pakistan Academy of Sciences sent a document in response to questions regarding ANSO's role and future activities.

Dr. Qasim Jan visualized the uniqueness and distinctiveness of ANSO as an extension of The Belt and Road Initiative and a hub for various scientists worldwide to meet and addressing environmental threats and SDGs, especially humanity. In addition, Dr. Jan projected the collaboration of members that would be possible with communication and active partnership. Mutual planning of programs with shared responsibilities was indicated by Dr. Jan. Lastly, he shared the idea of focusing on crucial and common issues related to member academies and countries, with unbiased commitment while handling issue like climate change, SDGs, responsible conduct of science, etc.

ANSO should focus on common issues related to member academies and countries. It will have colorblind commitment to tackle issues in human interest, e.g. climate change, SDGs, Natural disasters, responsible conduct of science, human health, etc. It should identify future trends and characteristics of the global STI, including the following:

1. Future trends of global economic and social development.
2. Major indicators and features of the world STI powerhouses (countries).
3. The strategies and approaches to be adopted by China if it wants to be at the forefront of the world science and innovation powerhouse.
4. Identifying key scientific and social challenges faced by ANSO member countries, and
5. Joint work on energy, water scarcity, agriculture productivity in era of climate change, Big data handling, storage & security, robotics, ethics in S&T; plasmaphysics, artificial Intelligence, materials science.

7.5.4.1. MoU signed between Pakistan Academy of Sciences (PAS) & Alliance of International Science Organization in the Belt & Road Region (ANSO)

Prof. Dr. M. Qasim Jan, President PAS attended the First General Assembly of Alliance of International Sciences Organizations (ANSO) in the Belt and Road Region & The Second International Science Forum of Scientific Organizations on the Belt and Road Initiative on November 3-5, 2018. Prof. Dr. M. Qasim Jan was elected as Vice President of ANSO in the Belt and Road Region. On behalf of the Pakistan Academy of Sciences (PAS), he signed an agreement on November 3, 2018, whereby PAS became a Founding Member of ANSO.

7.5.4.2. First (1st) Working Group Meeting of Alliance of International Science Organizations (ANSO) (May 13-14, 2019) & Strategic Plan Drafting Workshop (May 15-17, 2019)

Alliance of International Science Organizations (ANSO) is a non-profit, non-governmental International Scientific organization founded in 2018 by the Chinese Academy of Sciences (CAS) and 36 other International Science & Education Institutions around the world. Prof. Dr. M. Qasim Jan, President, PAS, Vice President ANSO and Prof. Dr. Zabta Khan Shinwari, Fellow PAS, Working Group Member, ANSO participated as core group members in the 1st Working Group Meeting of ANSO held from May 13 -14, 2019 at Ya'ao International Hotel, Beijing. Following the 1st Working Group Meeting, Prof. Dr. M. Qasim Jan, President Pakistan Academy of Sciences and Prof. Dr. Zabta Khan Shinwari, Fellow PAS also attended the Strategic Plan Drafting Workshop, Chapter 3 (ANSO Action Plan 2020- 2022) of strategic Plan from May 15 - 17, 2019 at Beijing, China.

7.5.5 Pakistan Academy of Sciences Suggestions on 15 Years Development Platform of the Chinese Academy of Sciences

Pakistan Academy of Sciences and many academic institutions and science organizations in Pakistan are engaged in a number of collaborations in different areas of Science and Technology with their Chinese counterparts. Research areas range from agriculture to energy production, communication, natural disasters, biotechnology, physical sciences, trade and business. The scope and extent of collaboration will further increase in view of the implementation of the CPEC. The PAS provided suggestions on the CAS Mid and Long term (2021-2035) S & T development plan, including the strategies and approaches, to be adopted by China.

PAS suggested that areas such as artificial intelligences, big data handling and cyber security, material science and Nano-Sciences and Technology need hot pursuits. A good balance between fundamental and applied (technological) research, research and innovation-oriented university structure and faculties, and rapid adaptation of new technologies may



be adopted if China wants to be at the forefront of the world science and become innovation powerhouse. STI have strong impact on sustainable development and socio-economic prosperity of nations. Through effective multinational collaborations, STI can play a pivotal role in solving global issues and problems behind abject poverty and under-development in various regions of the world.

The CAS knows that the pursuit of S&T is becoming highly competitive on the global scale; hence emphasis needs to be laid on quality manpower. The imminent threats of energy crisis, global warming and climate change, and fresh water scarcity, dual use of science, food insecurity and infectious diseases need immediate attention. The CAS may continue with the present policy of investment in human resource development and frontier areas of fundamental Science. Youth involvement and gender equality are important for future development in STI.

7.6. Visit of Foreign Delegations to the Academy

7.6.1. Visit of Delegation from the Chinese Academy of Sciences - March 8, 2018

A four-member delegation of Chinese Academy of Sciences (CAS) visited the Pakistan Academy of Sciences (PAS) Headquarters, Islamabad on March 8, 2018 to show the progress of the establishment of China-Pak Joint Research Center of Earth Sciences in Pakistan. Prof. Dr. Qasim Jan (President, PAS) and Prof. Dr. Aslam Baig (Secretary General, PAS) led the PAS side; the Fellow present on the occasion included Prof. Dr. Asif Khan. On behalf of the Pakistan Academy of Sciences, Dr. Qasim Jan warmly welcomed the Chinese delegation.

The Chinese Delegation thanked the President for brief introduction about the Academy and collaboration between PAS and CAS. CAS member presented a slide show on progress of the establishment of China-Pak Joint Research Center of Earth Sciences in Pakistan. They further added that CAS is bound to strengthen the cooperation between CAS and PAS. They briefed the PAS leadership about the aims and objectives of the China-Pak Joint Research Center that will deal with earth sciences issues in the dry range areas of mountains, i.e. Himalayas, Hindu Kush and Karakorum. The Center will provide a security support for China-Pakistan Economic Corridor (CPEC) by developing navigation for its course and technologies on natural hazards and providing sustainable capability by technology development of eco-environment protecting and recovery.

Dr. Asif Khan stated that PC1 is the requirement from the Planning Commission of Pakistan which will include objective and mission of the Center, plan of construction, number of labs, instruments, and design of center. HEC has the expertise so they will help in making PC1 for the Center. Dr. Qasim Jan complimented CAS members on the comprehensive presentation. He added that HEC has already taken the initiative in this regard. He suggested some places for the Center and also emphasized that the Center should be given an autonomous status. In the end, the President PAS thanked the participants of the meeting and assured lasting support of PAS for scientific collaboration between China and Pakistan.

7.6.2. Visit of Delegation from the Chinese Academy of Sciences (CAS) - May 20, 2019

A nine-member delegation of the Chinese Academy of Sciences (CAS) led by Dr. Yaping ZHANG, Deputy President CAS visited the Pakistan Academy of Sciences (PAS) on

May 20, 2019 and held a meeting with Officials and Fellows of the Academy in the PAS Committee Room. Prof. Dr. M. Qasim Jan, President PAS welcomed the CAS delegation with pleasure. The meeting discussed three collaborative aspects between China and Pakistan: (1) Establishment of China–Pakistan Joint Research Centre on Earth Sciences; (2) Joint projects and research activities between China and other countries (including Pakistan) in the region as initiated by Association of International Science Organizations (ANSO) in the Belt and Road region; and (3) Education Support to Pakistani Students in China. The Deputy President, CAS expressed that the cooperation for Science and Technology Initiatives (STI) is one of the most important aspect of bilateral relations between China and Pakistan.

7.7. PAS US-NASEM Collaborative Projects

7.7.1. Workshop on Review of PAS-NAS Clinical Laboratory Handbook- January 28-30, 2018

In order to promote cooperation between American and Pakistani public health and infectious disease experts, the Pakistan Academy of Sciences (PAS), together with the US National Academy of Sciences (NAS), had convened a joint Workshop on September 27-29, 2016 in Islamabad. The purpose of that event was to improve communications, cooperation, and coordination among public, private, military, and animal health clinical laboratories.

A follow up Meeting was held in April 2017 in Islamabad with officials of US National Academy of Sciences to plan a Handbook for improving clinical laboratories and laboratory networks in Pakistan with a special focus on raising the quality and capabilities of labs in more remote parts of the country. During this meeting, a Workshop was planned to be held in September 2017 in Islamabad to draft the chapters for the Clinical Laboratory Handbook by the authors selected by PAS and NAS.

Due to non-security clearance for the US participants, this Workshop was shifted from Islamabad to Bangkok, Thailand on January 28-30, 2018. Prof. Dr. Zabta K. Shinwari led a team of 22 from experts from Pakistan to participate in the joint Pakistan-U.S. Workshop to “Review PAS-NAS Clinical Laboratory Handbook”.

7.7.2. NAS-PAS collaboration - One-Health Fellowship Program in Pakistan - July 9, 2018

President PAS had a video talk in “One-Health Fellowship Program in Pakistan” with Dr. Lida Anestidou, Dr. Joanna Roberts and Dr. Audrey D. Thévenon. This program is in collaboration with the Pakistan Academy of Sciences and was initiated in 2015.

7.7.3. Launching of Handbook on Good Clinical Laboratory Practices in Pakistan by PAS & US-NASEM - March 18, 2019

The Pakistan Academy of Sciences (PAS) in collaboration with the National Academies of Sciences, Engineering and Medicine (NASEM), USA, launched the first edition of a comprehensive handbook on “Good Clinical Laboratory Practices in Pakistan” on March 18, 2019 at Marriott Hotel, Islamabad. The handbook has discrete sections focusing on laboratory management, biosafety, laboratory operations & quality management systems. As such, this Handbook is intended to serve as an informational guide for clinical laboratories in order to improve the health and wellbeing of people and animals in Pakistan, in accordance with the concept of One Health.



7.7.4. A Joint Workshop of the U.S. National Academies of Sciences, Engineering, Medicine (US-NASEM) and the Pakistan Academy of Sciences (PAS) - October 22-24, 2019

Prof. Dr. Zabta Khan Shinwari (Fellow, PAS) as a PAS representative co-organized a Joint Pakistan-US Workshop on Implementation of Good Clinical Laboratory Practices from October 22-24, 2019 at Georgetown University, Qatar Campus. This event aimed the assembly of leading figures in biosecurity and biosafety to discuss the shared responsibility of meeting the challenges to public health and national security.

7.7.5. One Health (1-H) Research Symposium - November 17, 2019

Pakistan Academy of Sciences (PAS) in collaboration with the U. S. National Academies of Sciences, Engineering and Medicine (NASEM) organized a “One - Health (1 - H) Research Symposium” on November 17, 2019 under US NAS-PAS collaboration - One-Health Fellowship Program in Pakistan.

The symposium was attended by around 50 participants including young and senior researchers, current and former US-NAS fellows, representatives from different research organizations and universities working in different disciplines pertaining to all the three main components of One-Health i.e. humans, animals and the environment.

The symposium was organized to disseminate information about One-Health approach i.e. fostering enduring international and national collaborations in multidisciplinary research themes to achieve sustainable health for all. The symposium featured US-NAS fellowship program which aims to build capacity of early to mid-career Pakistani scientists whose research projects follow the 1-H approach and at large, form a 1-H research network in Pakistan.

Invited participants included:

- All One-Health current, former fellows and mentors
- Dignitaries and representatives of one health related research organizations and institutes (NIH, NARC)
- Potential future fellows, Young PhDs, early career researchers, and research students (Quaid-i-Azam University and NUST, Islamabad, Qarshi University, Lahore etc.)

In the symposium, Dr. Zabta Khan Shinwari (Convener) and Dr. Audrey Thevenon (Program Officer, US NASEM) delivered their talks on the theme of One-Health and US-NAS fellowships program in Pakistan. The current fellows who have completed their first phase of the project i.e. traveled abroad and worked under their international mentors in Kenya, Thailand and Singapore, presented their work in the symposium. The posters on One-Health theme were also invited from the young researchers to encourage their participation which were presented during the symposium and evaluated by Dr. Audrey Thevenon, US-NAS and Dr. Aamer Ikram, Executive Director, NIH. One selected poster was given the Best Poster Certificate towards the end of the symposium program.

7.8. AASSA-PAS Collaborative Regional Workshop

The Pakistan Academy of Sciences (PAS) and the Association of Academies & Societies of Sciences in Asia (AASSA) jointly organized a three-day Regional Workshop on Complementary Medicine as an Answer to the Challenges Faced in Achieving Sustainable Goals in Health

held from August 19-21, 2019 at the PAS Secretariat, Islamabad. The workshop focused on: (a) Complementary Medicine and SDGs; (b) Media & Complementary Medicine; (c) Land Tenure & Sustainable use of Medicinal Plants and; (d) Role of practitioners in maximizing benefits of Herbal Medicine, with the objective to conduct a survey among the herbal practitioners & scientists about SDGs, current issues, challenges in Asia for herbal medicine. The workshop was attended by young researchers and experts from academia, industries and research institutes from within Pakistan as well as from participant countries naming, Malaysia, Bangladesh, Japan, Russia, Turkey, Korea, Indonesia, Sri Lanka and China. The workshop comprised of Technical Sessions, Poster Competition, Group discussions and Post Workshop Special Lecture organized at the National Institute of Health (NIH), Islamabad. This event provided an excellent opportunity to the local researchers to exchange knowledge through interaction with the foreign experts at the workshop.

In his opening address, Prof. Dr. M. Aslam Baig, Secretary General, PAS welcomed the diverse gathering of the workshop and thanked the Chief Guest, H.E. Zartaj Gul Wazir, Minister of State for Climate Change for her gracious presence to inaugurate the event. H.E. Zartaj Gul congratulated PAS for organizing the immensely important workshop. Prof. Dr. M. Qasim Jan, President PAS delivered the welcome address and expressed gratitude to the speakers, participants and dignitaries for making this event successful. Prof. Dr. Atta ur Rahman, *FRS* Chairman Prime Minister's Task Force on Science and Technology presented Key Note address. Prof. Dr. Yoo Hang Kim, President AASSA appreciated the incredible efforts of the local organizing committee.

For poster competition, twenty-two posters were short listed. A four-member evaluation committee was formulated comprising of Dato Dr Khairul Anuar Bin Abdullah (Malaysia); Dr. Sri Fatmawati (Indonesia and Prof. Dr. Masoom Yasinzaï and Prof. Asma Gul from Pakistan. This poster money was basically donated by President AASSA from his personal pocket money. Partial contribution was made by organizers of the workshop.

The Federal Minister (S&T), H.E. Chaudhry Fawad Hussain concluded the regional workshop as Chief Guest. In his address, he remarked that this regional workshop will provide excellent opportunity for herbal industry and R & D. Prof. Dr. Zabta Khan Shinwari (FPAS), the Convener of this scientific forum presented vote of thanks and acknowledged the AASSA- PAS for organizing, sponsoring and facilitating the event.

The following recommendations are based on the presentations and discussion during the workshop and are in line with the strategies recommended in the WHO 2014 – 2023 Strategic Frame Work.

1. Establish Higher Education and Research to enhance quality and expand the knowledge base of T&CM
2. Integrate Traditional Medicine with Primary Health Care (PHC)
3. Suppliers of medicines based on natural products must ensure that harvesting of the products from the animal/organisms species providing the source compounds is sustainable or the animals are domesticated in order to meet demands.



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:
 - ii. Agricultural Sciences, including Veterinary Sciences and Forestry;
 - iii. Biological Sciences, including Botany, Zoology, Microbiology, and Bio-Chemistry;
 - iv. Chemical Sciences, Including Pharmaceutical Sciences;
 - v. Earth and Environmental Sciences;
 - vi. Emerging Technologies, including Biotechnology, Nanotechnology, Molecular Biology, and Bioinformatics;
 - vii. Engineering Sciences, including Information Technology;
 - viii. Mathematical Sciences, including Mathematics, Statistics and Computer Sciences;
 - ix. Health Sciences;
 - x. Physics.
2. Dr. Atta-ur-Rahman Gold Medal in Chemistry for Scientists (under 40);
3. Dr. M. Raziuddin Siddiqi Prize in Physics 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 in Engineering Sciences, including Information Technology for Scientists (under 40);
7. *TWAS Abdus Salam Prize in Basic Sciences for Scientists (under 40);
8. *TWAS Salimuzzaman Siddiqui Prize in Applied Science-Technology for Scientists (under 40);
9. Prof. Zabta K. Shinwari Gold Medal in Biotechnology for Scientists (under 50).

(*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.

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
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
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 (NIAB), Faisalabad	Biological Sciences	1991



45	Dr. M. Shabbir, Pakistan Atomic Energy Commission (PAEC), Islamabad	Engineering & Technology	1991
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



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
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
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
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
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
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, Chief Scientist / Director Science, Pakistan Institute of Nuclear Science & Technology (PINSTECH), P.O. Nilore, Islamabad	Physics	2012
36	Prof. Dr. Amin Badshah, Chairman, 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, Director, 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 Director General, Ayub Agriculture Research Institute, Jhang Road, Faisalabad	Agriculture	2014
42	Dr. Muhammad Rashid Khan Associate Professor, Faculty of Biological Sciences, Department of Biochemistry, Quaid-e-Azam University, Islamabad	Biochemistry	2014
43	Dr. Mansoor Hameed Associate Professor, Department of Botany, University of Agriculture, Faisalabad.	Botany	2014
44	Dr. Irshad Hussain Associate Professor and Chair, 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 Chairman, Department of Electronics, Quaid-i-Azam University, Islamabad	Physics	2014
48	Dr. Farah Rauf Shakoori Associate Professor, 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 including Veterinary Sciences and Forestry	2015
50	Dr. Naveed Ahmed Khan Professor and Chairman, Department of Biological Sciences, The Aga Khan University, Karachi	Biological Sciences, including Botany, Zoology, Microbiology and Bio- Chemistry	2015
51	Dr. Shahabuddin Memon Professor NCE in Analytical Chemistry, University of Jamshoro, Sindh	Chemical Sciences including Pharmaceutical Sciences	2015
52	Dr. Riffat Nasim Malik Associate Professor, 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 Professor and Chairman, 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 Assistant Professor Government College University, Faisalabad	Earth and Environmental Sciences	2017
64.	Dr. Muhammad Idrees Hazara University, Mansehra, KP	Emerging Technologies	2017
65.	Dr. Masood Khan Quaid-i-Azam University, Islamabad	Mathematical Sciences	2017
66.	Dr. Yaseen Iqbal Materials Research Laboratory, University of Peshawar	Physics	2017
67.	Prof. Dr. Jehan Bakht Vice Chancellor, Khushal Khan Khattak University Karak, KP Pakistan	Agricultural Sciences	2018
68.	Dr. Muhammad Asgher Tenured Professor Dean, Faculty of Sciences Department of Biochemistry University of Agriculture Faisalabad	Biological Sciences	2018
69.	Dr. Aamer Ali Shah Associate Professor, 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	Emerging Technologies	2018
74.	Prof. Dr. Riaz Ahmad Head of Physics Department, Dean Faculty of Engineering, GC University, Lahore	Physics	2018
75.	Dr. Masroor Ellahi Babar Professor/Dean, Faculty of Science and Technology, Virtual University, Lahore	Agricultural Sciences	2019
76.	Dr. Habib Ahmad Professor/Vice Chancellor Islamia College, Peshawar	Biological Sciences	2019
77.	Dr. Syed Ghulam Musharraf Professor Dr. Panjwani Centre for Molecular Medicine and Drug Research, University of Karachi	Chemical Sciences	2019
78.	Dr. Muhammad Rizwan Assistant Professor, Department of Environmental Sciences and Engineering, GC University, Faisalabad	Earth and Environmental Sciences	2019
79.	Dr. Iftikhar Ahmed Principal Scientific Officer NARC, Islamabad	Emerging Technologies	2019
80.	Dr. M. Sajid Hamid Akash Associate Professor Department of Pharmaceutical Chemistry, GC University Faisalabad	Health Sciences	2019



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
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
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. Mrs. 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
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/Infaq 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 Cash Prize & Gold Medal (Under 40 Years)*

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
8	Dr. Muhammad Ayub, Quaid-i-Azam University, Islamabad	Mathematics	1997
9	Dr. M. Masoom Yasinai, 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
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 Assistant Professor, Department of Mathematics, The Islamia University of Bahawalpur, Bahawalpur	Mathematics	2014
24	Dr. M. Raza Shah Associate Professor, H.E.J. Research Institute of Chemistry, International Center for Chemical and Biological Sciences (ICCBS), University of Karachi	Chemistry	2015
25.	Dr. Rashid Jalil Associate Professor UET, Lahore	Physics	2016
26	Dr. Noreen Sher Akbar Assistant Professor 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



8.7. TWAS Cash Prize (Under 40 Years)

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

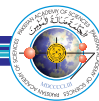
S.No.	Award Winner	Discipline	Year
1	Dr. Muhammad Yaqub, PCSIR, Karachi	Computer Science (Software)	1998
2	Dr. Mohammad Mahboob, Pakistan Atomic Energy Commission (PAEC), Islamabad	Computer Science (Software)	1999
3	Mr. Ghulam Mustafa, Pakistan Atomic Energy Commission (PAEC), Islamabad	Computer Science (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, Assistant Professor Department of Computer Science and IT University of Malakand, Chakdara	Computer Science (Software)	2015

8.9. PAS/COMSTECH Gold Medal 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
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, Assistant Professor, HEJ Research Institute of Chemistry, International Center for Chemical and Biological Sciences (ICCBS), University of Karachi, Karachi	Chemistry	2013
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, Assistant. Professor, National Center of Excellence in analytical Chemistry, University of Sindh, Jamshoro	Chemistry	2016
13	Dr. Zia-ur-Rehman, Assistant Professor 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,
Associate Professor
Institute of Chemical Sciences,
Bahauddin Zakariya University (BZU),
Multan | Chemistry | 2019 |

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 (NCEMB), 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
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,	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	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	Year
1	Dr. A. Quadeer Khan, Advisor to the Prime Minister on Strategic Programme, Islamabad	2000

8.14. Dr. Shah Jahan Prize

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 Principal Engineer 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 Assistant Professor Division of Science and Technology, University of Education, Lahore	Physics	2019



8.15. TWAS Abdus Salam Prize in Basic Sciences

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 Associate Professor, Department of Mathematics, Quaid-i-Azam University, Islamabad	Mathematics	2012
3	Dr. Mubasher Jamil Assistant professor School of Natural Sciences (SNS) National University of Sciences and Technology (NUST), H-12, Islamabad	Mathematics	2016
4	Dr. Tariq Mahmood Associate Professor/Chairman 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

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 Associate Professor Department of Biotechnology QAU, Islamabad	Biotechnology	2016

2	Dr. Zulfiqar Ali Professor/Chairman Department of Plant Breeding & Genetics, Muhammad Nawaz Shareef University of Agriculture, Multan	Biotechnology	2017
3	Dr. Moazur Rahman NIBGE, Faisalabad	Biotechnology	2018
4	Dr. Muhammad Imran Qadir Institute of Molecular Biology and Biotechnology, Bahauddin Zakariya University (BZU), Multan	Biotechnology	2019

***8.18. Abdus Salam Prize in Basic Sciences**

S. No.	Award Winner	Discipline	Year
1	Dr. Munawar Iqbal Assistant Professor Department of Chemistry, University of Lahore	Chemistry	2019

**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, UAF, Faisalabad	Agricultural Sciences	2019

**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
2020



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

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- 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

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- 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; Izz-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

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University of Karachi, Karachi-75270

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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

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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

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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

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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, Saqib

FELLOW: Elected 2012

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

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

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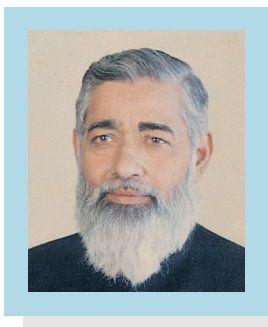
Education: University of Peshawar, KP: B.Sc., 1975; M.Sc., 1977; N. Copernicus University Torun, Poland: Ph.D., 1984; University of Bayreuth, Germany: Post-Doc., 1995-1996; 1998-1999; 2001-2002.

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.



Ali, Syed Irtifaq

FELLOW: Elected 1982

Born in Lucknow, India, on September 14, 1930

Centre for Plant Conservation, Dr. A. Q. Khan Institute of Biotechnology & Genetic Engineering, University of Karachi, Karachi-75270

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Mob: 0300-703 8189

- Education:** University of Allahabad, India: M.Sc. in Botany, 1952; University of London, United Kingdom: Ph.D. 1958; D.Sc. 1979.
- Positions Held:** Professor Emeritus, University of Karachi, Karachi, Pakistan, 2011; Director General, Dr. A. Q. Khan Institute of Biotechnology and Genetic Engineering (KIBGE), University of Karachi, 2008-2011; Distinguished National Professor, 2004; Vice Chancellor, 1990-1994; Professor of Botany, Al-Fatah University, Tripoli, Libya, 1972-1976; Dean, Faculty of Science, 1981-1990; Professor of Botany, 1969-1990; Research Fellow, University of Melbourne, Melbourne, Australia, 1961-1963.
- Awards:** Gold Medal and Certificate of Merit, United States Department of Agriculture (USDA) and Pakistan Agricultural Research Council (PARC), 1985; Gold Medal, University of Karachi, 1987; Open Gold Medal for Biological Sciences, Pakistan Academy of Sciences, 1987; *Sitara-e-Imtiaz*, Government of Pakistan, 1988.
- Fellowships/ Memberships:** Fellow, Linnean Society of London, since 1966; Sectional President, International Legume Conference, Kew, England, 1976; Member, National Science Council of Pakistan, 1982-1985; Fellow, The World Academy of Sciences, 1988; Vice-President, Pakistan Academy of Sciences, 1992-1996, 2004-2008; Member, Species Survival Commission, Indian Subcontinent Plant Specialists Group, IUCN, 1988-2004; Member, World Commission on Protected Areas for South Asia, IUCN, 1994 to date; President, Botanical Society of Pakistan, 1981-82; President, Scientific Society of Pakistan, 1988-89; Vice-President, Institute of Central and West Asian Studies, 1995-2008; Vice-President, Association for History & Philosophy of Sciences, 2000 to 2012; Honorary Vice-President, XVI International Botanical Congress, Saint Louis, Missouri, USA, 1999
- Research Areas:** Systematic Botany, Biosystematics, Reproductive Biology, Conservation Biology, and Flora of Pakistan.



Anwar-ul-Haq

FELLOW: Elected 1996

Born in Ujjain, India, on January 1, 1947

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

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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-Baqqa*, 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,
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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

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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.



Ashfaq, Muhammad

FELLOW: Elected 2006

Born in Jhang city, Pakistan, on November 16, 1952

Professor/ Registrar, National Textile University, Faisalabad

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Education: University of Agriculture, Faisalabad, Pakistan: B.Sc., 1972; M.Sc., 1975; Ph.D., 1985; University of the Punjab: L.L.B., 1995.

Positions Held: Professor/Registrar, National Textile University, Faisalabad, 2014 - date; Pro-Rector, University of Faisalabad, 2012; Professor/Dean Faculty of Agriculture, 2012; Chairman, Dept. of Entomology, 2007-2009; Post Doc., Ibraki University, Japan, 2007. Dean, Faculty of Agriculture, 2003-2006; Chairman, Department of Agri. Entomology, 2002-2004; Principal Officer (Student Affairs), 2003-2004; Head, University Library, 1997-2002; Director Student Affairs, 1991-1995; Acting Vice Chancellor, University of Agriculture, Faisalabad.

Awards: Included in top 10 "Most Productive Scientists of Pakistan", PCST 2014; *Sitara-i-Imtiaz* by Government of Pakistan, 2013; Gold Medal by GC University, Faisalabad, 2012; Scientist of the Islamic World by FUIW (O.I.C.), Morocco, 2011; Research Productivity Award, by Govt. of Pakistan, 2011; Award of Honor "Asian Peace Seminar" by India, 2010; Quaid-e-Azam Gold Medal, 2010; Zoologist of the Year Award, by Zoological Society of Pakistan, 2009; Better Incentive Award, by UAF, 2006-2009; 19th Bolan Excellence Award, 2008; AUS-PAK Education Excellence Award, 2008; Shield of Honor, by President of Pakistan, 2006; *Tamgha-i-Imtiaz* by Govt. of Pakistan, 2003; Best University Teacher Award, by HEC, 2002; National Education Award, 2002; "Star Man in Agriculture" by South Asia Publications, 1999; "Role of Honour" by University of Agriculture, Faisalabad.

Fellowships/ Memberships: Fellow, Member and Diploma holder of TWAS (The World Academy of Sciences), 2011; Member, National Curriculum Committee of Ministry of Education; Managing Editor, Pakistan Entomologist; President, Entomological Society of Pakistan, 2002 to date; Executive Member, International Congress of Entomology, Durban, South Africa, 2008; Member, Society for Advancement of Agricultural Sciences, Pakistan; International Society of Environmental Botanists.

Research Areas: Integrated Pest Management with special reference to Biological Control; Stored Grain and Stored Product Acarology; Sericulture.



Ashraf, Muhammad

FELLOW: Elected 2000

Born in Faisalabad, Pakistan on July 15, 1953

Chairman, Pakistan Science Foundation, Islamabad

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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: Chairman, Pakistan Science Foundation, 2015 to date; 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: HEC Lifetime Achievement Award, 2012; Honorary Professor, Lanzhou University, China, 2013; Khwarizmi-Lecture, 2012; FAO Medal for Excellent Research in Plant Stress Biology, 2012; *Sitara-i-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, *Izz-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.



Aslam, M.

FELLOW: Elected 1974

Born in Gurdaspur, India, on February 1, 1924

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Education: Bombay University, India: B.Sc., 1943; M.Sc., 1946; West Coast University, USA; Diploma in Plastic Technology, 1950; University of Southern California, USA; B.E. (Chemical), 1951.

Positions Held: Professional Member, Institute of Food Technologies, 1987 to date; Technological and Industrial Consultant, 1984 to date; Chairman, Pakistan Council of Scientific and Industrial Research (PCSIR), 1980-1984; Member (Technical), PCSIR, 1976-1980; Director, PCSIR, Karachi, 1972-1976; Director, PCSIR, Lahore, 1966-1972; Principal Research Officer, Senior Research Officer and Research Officer, PCSIR, 1954-1966.

Awards: Gold Medal, Pakistan Academy of Sciences, 1974; *Tamgha-i-Imtiaz*, Govt. of Pakistan.

Fellowships/ Memberships: Fellow, Royal Institute of Chemistry (FRIC), London, 1965.

Research Areas: Organic Chemistry, Plastic Technology, Food Technology, ISO-9000 QA Systems.



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

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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;

Awards:

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 Tartaqqi 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 Prirodnykh Soedinchiy, 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.

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.

Professor, department of chemistry, Quaid-i-Azam university, Islamabad.

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Education: University of Peshawar B.Sc., 1981; Gomal university, D.I. Khan, M.Sc., 1984., Quaid-I-Azam University, Islamabad, PhD., 1994.

Positions Held: 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.

Fellowships/ Memberships: Fellow, Pakistan academy of Sciences, 2013, 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

Secretary General, Pakistan Academy of Sciences
3-Constitution Avenue, Islamabad

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

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Education: University of the Punjab, Lahore, Pakistan: B.Sc., 1971; University of Karachi, Pakistan: M.Sc., 1973, M.Phil., 1977; Imperial University, UK: D.I.C., 1979; London University, UK: Ph.D., 1979.

Positions Held: Distinguished National Professor, National Center for Physics, 2012 to date; 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. Gold Medal, Pakistan Academy of Sciences, 1987.

Fellowships/ Memberships: Alexander von Humboldt Visiting Professor, Bonn University, Germany (2008); Kaiserslautern University, 1999, 2000, 2001; Fellow, Pakistan Nuclear Society; Member, Institute of Physics, UK; Member, German Physical Society, Germany.

Research Areas: Experimental Atomic, Molecular and Laser Physics.



Beg, Ismat

FELLOW, Elected 2008

Born in Pakistan, on January 4, 1951

Lahore School of Economics
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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, Haq Nawaz

FELLOW: Elected 2014

Born in Nankana Sahib Pakistan, on September 20, 1965

Principal, UAF Community College,
University of Agriculture, Faisalabad

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Education: University of the Punjab, Lahore: B.Sc., 1985; M.Sc., 1987; University of Agriculture, Faisalabad: Ph.D., 2004.

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; University of Winnipeg, Manitoba, Canada: Post-Doc., 2007.

Awards: Gold Medal in M.Sc., University of the Punjab, 1987; Muhammad Ali Gold Medal in M.Sc., University of the Punjab, 1987; Badar-ud-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 & Technology by South Asia Publications; President's Medal for Science & 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 paper award for 2013 by UAF of cash prize Rs. 50,000/-.

Fellowships/ Memberships: Member, Association for the Advancement of Science in Pakistan, Lahore; Life Member, Chemical Society of Pakistan; Member, American Chemical Society; Member, Biochemical Society; Fellow, The Chemical Society of Pakistan.

Research Areas: Production, purification, characterization, and engineering of enzymes; Bioremediation and biosorption of textile dyes and effluents and heavy metals; Bioleaching of low grade ores by indigenous microbes.



Bhutta, Zulfiqar Ahmed

FELLOW, Elected 2004

Born in Peshawar, Pakistan, on October 12, 1955

Professor & Founding Director,
Centre of Excellence in Women and Child Health,
The Aga Khan University Hospital, Stadium Road, Karachi

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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: 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).

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).

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

Registrar, Imperial College of Business Studies, Lahore

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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-date; 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,

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

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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

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- 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

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
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Education: University of Karachi, Pakistan: B.Sc., 1980, M.Sc., 1983; Ph.D., 1987; D.Sc., 2005; D.Sc., 2019.

Positions Held: 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; 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: 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: 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

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

Fellowships/ Memberships: Fellow, TWAS-The World Academy of 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, antidiyslipidemic, hepatoprotective, antiinflammatory, antiurolithic, antiasthmatic, cardiotonic, laxative, antidiarrhoeal, prokinetics, 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

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Education: University of Karachi: MSc and MPhil; London University: PhD.

Positions Held: Meritorious Professor Neuroscience & Senior Research Scientist, 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: 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; Nishan-e-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 Biochemists; Life Member, Pakistan Pharmacological Society; Life Member and Organizer of ISBBP; Life Member, International Brain Research Organization; Member Editorial Board, International Archives of Addiction Research and Medicine, Newark, USA; Member, Board of Faculty, Sir Syed University of Engineering and Technology, Karachi.

Research Areas: Neurotransmitter receptor function; Neuronal plasticity & neurodegeneration; Behavioral neuroscience; Preclinical research on Nutraceuticals Neuroendocrinology.



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

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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-Haq

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

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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

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Education: MBBS, University College Hospital, University of London; MSc, (Medical Microbiology), London School of Hygiene and Tropical Medicine and The Royal Post Graduate Medical School, University of London; PhD, (Immunology), London School of Hygiene and Tropical Medicine, University of London; MRC (Path), Medical Microbiology, UK; FRC (Path), Medical Microbiology, UK.

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 to date; 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.

Fellowships/ Memberships: Fellow, Royal College of Pathologists, UK; Fellow, College of Pathologists Pakistan; 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; Vice Chair, Core Group of the Global Laboratory Initiative, Stop-TB Partnership; Member, New Diagnostic Working Group, Stop-TB Partnership; Member, WHO Eastern Mediterranean Regional Green Light Committee; Associate Editor, BMC Microbiology; Editorial Board Member, The Scientific World Journal; Editorial Board Member, The International Journal of Mycobacteriology; Member, Editorial Committee, Journal of Pakistan Medical Association.

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

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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; Qaid-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

Distinguished National Professor, Department of Mathematics,
Quaid-i-Azam University, Islamabad

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Email: pensy_t@yahoo.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. Mathematics, 2009 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 to date; Visiting Scholar, University of Illinois, Urbana-Champaign, USA, 1999; Visiting Scholar, University of Witwatersrand, Johannesburg, South Africa, 2004-2005; Visiting Scholar, Mabatho University, Mafikeng, South Africa, 2005; Honorary Associate Professor, University of Witwatersrand, Johannesburg, South Africa, 2007 to date.

Awards: *Tamgha-i-Imtiaz*, Govt. of Pakistan, 2005; M. Raziuddin Siddiqi Gold Medal, Pakistan Academy of Sciences, 1999; Prof. Abdus Salam Prize in Mathematics, 1999; TWAS Young Scientist Award, 2000; Silver Medal in B.Sc., 1988; Gold Medal (Mathematics), Pakistan Academy of Sciences, 2006; 17th Khwarizmi International Award, Govt of Iran, 2004; ISESCO International Prize, 2004.

Fellowships/ Memberships: Alexander von Humboldt Fellow, Darmstadt University, F.R. Germany, 2001-2002; ICTP Associate, International Centre for Theoretical Physics, Italy, 2004; Associate Editor, Islamabad Journal of Science, 2005 to date; Member of Prof. Abdus Salam Prize Committee, 2005 to date; 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 date; Fellow, Islamic World Academy of Sciences, 2012.

Research Areas: Wave Mechanics, Newtonian and Non-Newtonian Fluid Mechanics, Mathematical Modeling and Biomechanics.



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

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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 Pittsburgh, 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

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- 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; Taghma-e-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)

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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.



Iqbal, Mohammad Perwaiz

FELLOW: Elected 2002

Born in Pakistan, on August 12, 1949

Department of Biological & Biomedical Sciences, The Aga Khan University, Medical College, Stadium Road, Karachi-74800

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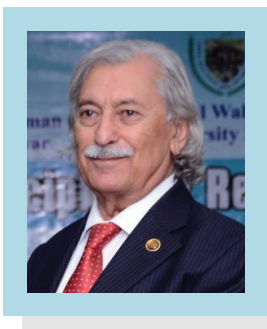
Education: University of the Punjab, Lahore, M.Sc., 1970; New York University, M.S., 1978; New York University, Ph.D., 1981.

Positions Held: Aga Khan University, Karachi: Professor Emeritus, 2019 to date; Professor of Biochemistry, 1992-2019; Director FHS-PhD 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.

Research Areas: Folate Metabolism, Enzymology, Gene Polymorphism, Vitamins' Deficiency and Development of Coronary Artery Disease, Vitamin D and Diabetes Mellitus, Heavy Metal Pollution and Human Health, Hyperhomocysteinemia.



Jan, M. Qasim

FELLOW: Elected 1990

Born in Hangu, KP, India, on January 10, 1944

President, Pakistan Academy of Sciences, Islamabad; Adviser, COMSTECH Secretariat, Islamabad; and Distinguished National Professor (Emeritus), University of Peshawar, Peshawar

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- 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, 2018-2020; 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. 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, Tectonics.



Iqbal, Muhammad

FELLOW: Elected: 2011

Born in Gujrat, Pakistan, on June 15, 1958

Director General, National Physical and Standards Laboratory,
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- 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:** Director General, National Physical and Standards Laboratory, 2016- date; 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

Advisor, Department of Physics, COMSATS Institute of Information Technology, Chak Shahzad, Islamabad

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- Education:** University of the Punjab, Pakistan: B.Sc., 1966, 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; 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, photoluminescence, 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

Vice-Chancellor, University of Poonch, Azad Kashmir, Pakistan

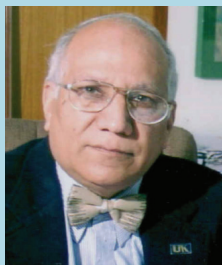
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- Education:** M.Sc. (Chemistry) 1976, M.Phil. (Chemistry) 1979, University of Peshawar; Ph.D. 1983, University College Cork, Ireland.
- Positions Held:** Post-Doctoral Research Fellow, University College Dublin, Ireland, 1983-1985; Assistant, Associate 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-date.
- 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

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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 Nucleartest); 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

Vice Chancellor, University of Engineering and Technology, Lahore

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- 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:** Vice Chancellor, University of Engineering and Technology, Lahore, 2014 to date, and Additional Charge of KFUEIT, RYK, 2014-15 and MNSUET, Multan, 2014-2016; 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; Research Engineer, Rolling Process Laboratory, Central Laboratories, Zaporozhaye Steel Plant Zaporozhaye, Ukraine, 1980-1981; 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, 2007; 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 Royal Microscopical Society (FRMS), Oxford, UK; Fellow of Institute of Materials, London; Member of ASM, USA; Member of The Minerals, Metals and Materials Society, USA; Member of Institute of Nanotechnology; Member of Pakistan Engineering Council (PEC); Member of Board of Trustees, Pakistan Science Foundation (PSF); Member of Engineering Accreditation and Quality Evaluation Committee; Inspector of Examinations, Pakistan Engineering Council; Governing Body PEC; Member of National Commission on Nanoscience and Technology, Government of Pakistan, Member of BoT/BoG/Syndicates – LUMS, NCA, KEMU, UET Taxila, MUET, KFUEIT.
- Research Areas:** Advanced Materials, Nanomaterials and Nanotechnology, Electron Microscopy, Accreditation and Quality assurance of Engineering Programs.



Khan, Abdul Quadeer

FELLOW: Elected 1988

Born in Bhopal, India on April 1, 1936

H. No. 207, Hillside Road, E-7,
Islamabad

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Education:

University of Karachi: B.Sc., 1960; Technical University, Berlin, West Germany: Metallurgical Engineering Courses, 1962-1963; Delft Technological University, Delft, Holland: M.Sc., 1967; University of Leuven, Belgium: Doctor of Engineering, 1972.

Positions Held:

Special Advisor to the Prime Minister on Strategic Program, KRL Affairs, 2001-2004; President, Pakistan Academy of Sciences, 1997-2002; Chairman, Dr. A. Q. Khan Research Labs, Kahuta, Pakistan, 1998-2001; Project Director, Dr. A. Q. Khan Research Labs, Kahuta, Pakistan, 1976-1998; Project Director, GIK Institute of Engineering Sciences & Technology, Topi, Pakistan, 1990-2002; Chief Coordinator for Guided Missile Program, 1990-2000; Senior Metallurgist/Deputy Manager, FDO Eng. Consultants, Amsterdam, Holland, 1972-1975; Research Fellow, Leuven University, Belgium, 1968-1972; Research Assistant to Professor Burgers at Delft Technological University, Holland, 1967-1968; Inspector of Weights & Measures, Govt. of Pakistan, 1959-1961; Practical Trainee with Siemens Pakistan Eng., 1958-1959; Tech. Asst., Star Eng. Works, Karachi, Pakistan, 1956-1958.

Awards:

D.Sc., NED University of Engineering & Technology, 2014; D.Sc., M.A. Jinnah University, Karachi, 2012; Nishan-i-Imtiaz and Bar, Govt. of Pakistan, 1996, 1998; Hilal-i-Imtiaz, Govt. of Pakistan, 1989; D.Sc., University of Karachi, 1993; D.Sc., Baqai Medical University, Karachi, 1998; D.Sc., Hamdard University, Karachi, 1999; D.Sc., Gomal University, D.I. Khan, 1999; D.Sc., University of Engineering & Technology, Lahore, 2000; D.Sc., Sir Syed University, Karachi, 2001; D.Sc., Balochistan University, Quetta, 2003; Distinguished Alumnus of the famous Technical University of Berlin, Germany; the Delft University of Technology, The Netherlands; and University of Leuven, Belgium; 66 Gold Medals and 3 Gold Crowns from various National Organizations; Acclaimed as Mohsin-e-Pakistan by the whole nation; A large number of Institutes, Auditoriums and Research Centers have been named after Dr. A. Q. Khan within Pakistan and abroad.

Fellowships/ Memberships:

Fellow: Islamic World Academy of Sciences, Kazakh National Academy of Sciences, Korean Academy of Sciences, Pakistan Institute of Metallurgical Engineers, Pakistan Institute of Engineers, Institute of Central and West Asian Studies; Chartered Engineer and Member, The Institute of Materials, London; Member, American Society of Metals (ASM), The Metallurgical Society of the American Institute of Mining, Metallurgical and Petroleum Engineers, Canadian Institute of Metals (CIM), Japan Institute of Metals (JIM).

Research Areas:

Metallurgy, Materials Science, Nuclear Technology with keen interest in Physical Metallurgy, especially Structure-Property Relationships in High Strength Alloys, Ballistic Missiles and Enrichment Technologies.



Khan, Arshad M.

FELLOW: Elected 1992

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

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Mob: 0300-856 5236

Email: drarshadm Khan@yahoo.co.uk

Education:

Positions Held:

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

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

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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 Zakaraya 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

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- 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 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:** 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:** 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:** Citrus Genetic, Biotechnology and Virology.



Khan, Khalid Mahmood

FELLOW: Elected 2000

Born in Faisalabad, India, on June 15, 1941

Professor Emeritus, University of Agriculture (UAF), Faisalabad

Pakka Mari, Tariq Abad, Faisalabad

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- Education:** University of the Punjab, Lahore, Pakistan: M.Sc. (Biochemistry), 1966; University of Edinburgh, UK: PhD (Biochemistry), 1970.
- Positions Held:** 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 (DP_n) 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

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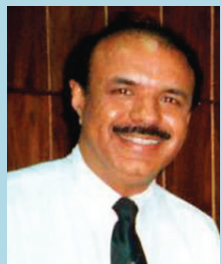
Education: University of Karachi, Pakistan, Ph. D., 1992; Quaid-i-Azam University, Islamabad, Pakistan; M.Sc., 1985; B.Sc. University of Sindh, Jamshoro, Pakistan, 1981.

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

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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,
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- 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

Coordinator General, COMSTECH,
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- 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:** Coordinator General, COMSTECH, 2014 to date; 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, Aiwani-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

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Rawalpindi 46300, Pakistan

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akhanum@hotmail.com, azkiak@yahoo.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-TOKTEN (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/non-edible 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

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- 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

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- 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

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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

Dean, Faculty of Basic and Applied Sciences,
Air University, PAF Complex, E-9, Islamabad

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Education:

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

Positions Held:

Lecturer, Quaid-i-Azam University Islamabad, 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, 2007; Regular Visiting Faculty Professor, NUST, 2008-2013; Head of Department of Materials Engineering, 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 date); Prof. Emeritus, Air University, 2015; Acting Dean Graduate studies since Jan. 2020.

Awards:

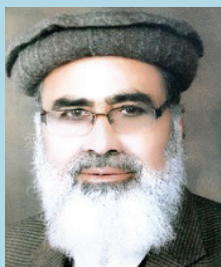
Dr. Z.A. Hashmi Gold Medal by Pakistan Science Foundation, 2014; Life Time Achievement Award by Pakistan Vacuum Society, 2013; Sitara-i-Imtiaz by President of Pakistan, 2011; Izaz-i-Fazeelat by Government of Pakistan, 2005; Prime Minister Gold Medal on World Teacher Day, 2004; HEC Best University Teacher Award, 2002; PCST Research Productivity Award, 2002-2014; Pride of Performance, 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.

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 IUVSTA, 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

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- 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, Sheringel, Dir Upper; Meritorious Professor, 2004-2010; Professor, 1995-2004; Associate Professor, 1987-1995; Assistant Professor, 1982-1986; Lecturer, 1977-1982; Plant Taxonomist, 1976-1977; Agriculture University, 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; 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.
- Research Areas:** Weed Ecology, Parasite 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

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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 Governors (BoG)
Underground Coal Gasification (UCG) Project, Govt. of Sindh
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- Education:** Govt. College Lahore, University of the Punjab: M.Sc. (Physics) with academic roll of honour, 1962; University of Oxford, England: D.Phil. (Experimental Nuclear Physics), 1966.
- 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, Muhammad Ali Jinnah University (MAJU); Member, Board of Governors, FAST National University; Member, Council of the Pakistan Academy of Science 2006-2008, 2011-2012; Member Syndicate, Govt. College University (GCU), Lahore; Member, BoG, Capital University of Science & Technology; Member, BoG, COMSATS.
- 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, Missile Technology.



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

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- 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

Distinguished National Professor, Salam Chair, Government College University, Lahore.

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- 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; 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; 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

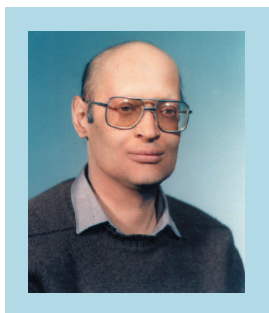
President, Pakistan Academy of Sciences,
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- Education:** University of the Punjab, Lahore: B.Sc., 1955; M.Sc., 1957; University of Edinburgh, UK: Postgraduate Diploma in Genetics, 1963; Ph.D., 1966.
- Positions Held:** Secretary General, Pakistan Academy 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 (COMSTEC), 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:** 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 India, on July 23, 1946

Department of Physics
School of Natural Sciences (SNS)
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- 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:** Professor Emeritus, School of Natural Sciences, National University of Sciences & Technology (NUST), H-12, Islamabad, 2012-date; Professor, CAMP, 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; Quaid-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:** Lifetime Achievement Award by Abdus Salam School for Mathematics and National Centre for Mathematics, 2013; Visiting Professor at School for Computational & Applied Mathematics, University of the Witwatersrand, January 2013 and award from there 2012; Conference held in honour of 70th birthday and 65th birthday at Salento University of Lecce, Italy, 2016 and 2011 and at University of the Punjab, Lahore, 2011; *Hilal-i-Imtiaz*, 2008; Distinguished National Professor, 2004; Best Researcher of the Year, NUST, 2007; ISESCO Award, 2003; *Sitara-i-Imtiaz*, Govt. of Pakistan, 1999; Gold Medal, Pakistan Academy of Sciences, 1996; Khwarizmi First Prize, Govt. of Iran, 1995; Prize, National Book Council of Pakistan, 1991; Senior Fulbright Fellowship, University of Texas at Austin, Texas, USA, 1986-87; Fulbright Hayes Award, 1978-79; 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 Vice-President, 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

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- 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

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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

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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

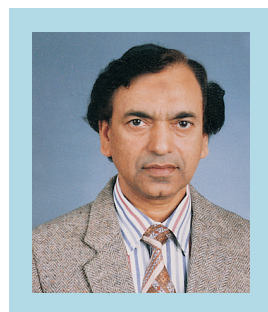
Former Member (Bio-Sciences)
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- Education:** PhD (Agronomy & Soil Science), 1986; University of Hawaii, Honolulu, Hawaii, USA – as East West Center scholar; MSc (Hons) Soil Science, 1972; University of Agriculture, Faisalabad.
- Positions Held:** Coordinator, Harvest Zinc Project in Pakistan, 2008 to date; Editor-in-Chief, Pakistan Academy of Sciences, Islamabad, 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, Islamabad, 1987–2000; East-West Center (Hawaii, USA) Joint Doctoral Research Intern 1984–86; Senior Scientific Officer, NARC, Islamabad, 1979–1987; Scientific Officer, Nuclear Institute for Agriculture & Biology (NIAB), Faisalabad, 1973–1979.
- Awards:** IPNI Science Award, by International Plant Nutrition Institute, 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, by Pakistan Agricultural Research Council, 1999; National Book Foundation Award, 1997; Research Productivity Award, by Pakistan Council for Science & Technology, 2002, 2012; and multiple Awards by PARSA (Pakistan Agricultural Research Council Scientists Association), 1995–2004.
- Fellowships/ Memberships:** Member, 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, Soil Resource Evaluation.



Riazuddin, Sheikh

FELLOW: Elected 1997

Born in Lahore, India, on April 15, 1944

HEC Distinguished National Professor

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- Education:** Government Collage, 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:** LIARC 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

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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- to date; 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 and 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; Post-doc Fellow, National Institute for Fusion Science, Toki, Japan, 1996-1998.

Awards:

Pride of Performance by Govt. of Pakistan, 2013; PAS Gold Medal in Physics, by Pakistan Academy of Sciences, 2004; Tamgha-i-Imtaiz 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; Member, German Alumni Forum, Islamabad; General Secretary, "Pakistan Chapter of AS-ICTP" for the year 2001.

Research Areas:

Plasma Physics and Astrophysics.



Shakoori, Abdul Rauf

FELLOW: Elected 1991

Born in Sialkot, India, on October 1, 1942

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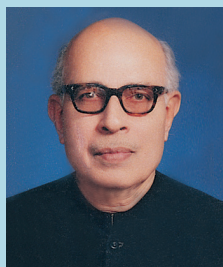
Education: University of the Punjab, Lahore, Pakistan: B.Sc., 1960; M.Sc., 1962; University of Hohenheim, Stuttgart, West Germany: D.Sc. (Dr.rer.net.), 1972.

Positions Held: 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 to date; Distinguished National Professor, 2005 to date; Member, Board of Directors, Punjab Education Foundation (PEF), 2016-date; Member, Executive Council, PEF, 2016-date; 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: Top 100 Scientist 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: Chief Editor, Pakistan Journal of Zoology, 2016 to date; Editor, 1980-2016; Fellow, The World Academy of Sciences for the Developing World (TWAS), 2004 to date; 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.

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

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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

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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:

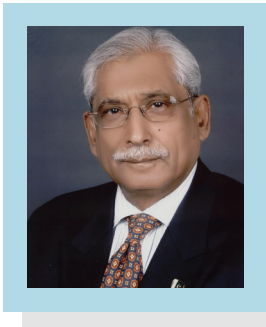
HEC Distinguished National Professor, 2010; Pakistan Academy of Sciences Gold Medal, 2002 and 2009; Best Research Paper Award, 2009 and 2015; Best University Teacher Award, 2008 and 2016; Tamgha-i-Imtiaz, 2008; Izzat-i-Fazeelat, 2007; Dr. Raziuddin Siddiqi Prize, 2002; Research Productivity Award 2001-date.

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 Medallist); Vice-Chair of The World Commission on the Ethics of Scientific Knowledge and Technology (COMEST)-UNESCO

President National Council for Tibb (Alternative Medicine)
Treasurer Association of Academies and Societies of Sciences in Asia (AASSA)

Tel: 92-512612970

Email: shinwari2008@gmail.com, shinwari@qau.edu.pk

- Education:** University of Peshawar, Pakistan: BSc, and MSc 1980 & 1983; Quaid-i-Azam University Islamabad, Pakistan, M. Phil, 1986; Kyoto University Japan, PhD, 1994.
- Positions Held:** 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 Medallist 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.
- Fellowships/ Memberships:** Vice Chair of The World Commission on the Ethics of Scientific Knowledge and Technology (COMEST)-UNESCO since 2016; 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-Shringel, KP, 2013-2016 & 2015-2018 respectively; President South Asian Federation of Japanese Universities Alumni Associations (SAFJUA), 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.
- 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

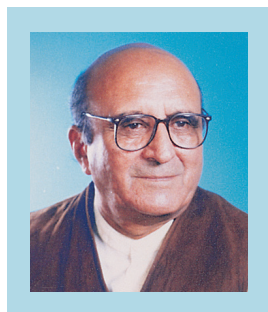
Tel: (Off) 021-9926 1716

Mob: 0300-820 6366

Fax: 021-3481 9018, 3481 9019

Email: sidiqi_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; *Tamgha-i-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.



Tahirkheli, Rashid Ahmad Khan

FELLOW: Elected 1983

Born in Ghazi, KP, India, on April 4, 1928

Vice Chancellor, Gandhara University, Canal Road, Academy Town,
Danishabad, University Town, Peshawar

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Mob: 0300-584 9270

Email: gandhara@brain.net.pk

- Education:** Muslim University, Aligarh, India: B.Sc., 1945; University of St. Andrews, Scotland: M.Sc., 1960; Ph.D., 1964.
- Positions Held:** Vice Chancellor, Gandhara University, Pakistan, 1999 to date; University of Peshawar, Peshawar: Vice Chancellor, 1982-1987; Professor and Director, Center of Excellence in Geology, 1978-1988; Chairman, Department of Geology, 1964-1978; Reader & Chairman, Department of Geology, 1964-1969; Geological Survey of Pakistan: Senior Geologist/Deputy Director, 1962-1964; Geologist, 1959-1962; Assistant Geologist, 1951-1958.
- Awards:** *Sitara-i-Imtiaz*, Govt. of Pakistan, 1982; Medal for Academic Excellence, University of Edinboro, USA, 1986.
- Fellowships/Memberships:** Honorary Fellow, Geological Society of America, 1988; Member: Geological and Mineral Development Coordination, Board, Govt. of Pakistan; National Committee for the International Geological Correlation Program (UNESCO), Govt. of Pakistan; Committee for Earth Science, Pakistan Science Foundation, Govt. of Pakistan; Committee for Formulation of Tectonic Map of Pakistan, Survey of Pakistan, 1980-1981; Mineral Technical Committee, Ministry of Petroleum, Govt. of Pakistan, 1980.
- Research/Areas:** Geology with Special Contributions to Geology of Himalayas, Karakoram and Hindukush.



Wasay, Mohammad

FELLOW: Elected 2017

Department of Medicine,
The Aga Khan University
Stadium Road, Karachi 74800, Pakistan

Tel: (9221) 493 0051 ext. 4665 & 4681

Fax: (9221) 493 4294, 4932095

E-mail: mohammadwasay@hotmail.com, mohammad.wasay@aku.edu

- Education:** Dow Medical College, Karachi, Pakistan. M.B.B.S. 1989; Superior Science College, Karachi, Pakistan. H.S.C., 1981; Govt. Boys Secondary School, Saudabad, Karachi, Pakistan. S.S.C., 1979.
- Positions Held:** Professor, Department of Medicine, Aga Khan University, Karachi: 2013-date; Associate, 2006-2013; Assistant Professor, Department of Medicine, Aga Khan University, Karachi: 1999-2005.
- Awards:** American Academy of Neurology: Teachers Recognition Award, 2006; Advocacy leader of the year, 2005; Pakistan Academy of Science: Gold Medal (Health Sciences) 2015; Junior Award+ Gold medal, 2003; Distinguished Teacher Award, Pakistan Society of Neurology, 2005; University/Hospital, Victor Rivera Award, UT South-western Medical School, 1997; Lester R. Bryant Founder's Award, Marshall University School of Medicine, 1995; Outstanding Teacher Award, Aga Khan University, 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:** Neurological Sciences, Neuro Imaging



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; ISECO Award, 1990; Gold Medal by PWA, for contribution in Sciences & Technology, 1991; Fulbright Award, 1992; Ibn- Al-Hythum 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 to date; 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.



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

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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. 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 Ghor	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
Dr. Heshamul Haque	Elected 1978
Dr. Fazal Ahmed Faruqi	Elected 1978
Dr. S. Mahdi Hassan	Elected 1980
Prof. Dr. Mrs. Nasima Trimizi	Elected 1980
Prof. Dr. Muhammad Ataur Rahman	Elected 1980
Dr. M.I. Burney	Elected 1983
Dr. F. H. Shah	Elected 1984
Prof. Dr. Naeem Ahmed Khan	Elected 1986
Dr. Mahbub Ali	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
Dr. Agha Ikram Mohyuddin	Elected 1991
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. M.A. Hafeez	Elected 1999
Prof. Dr. Qasim Mehdi	Elected 1999
Dr. A. Sattar	Elected 2000
Dr. S. Moosa Hasany	Elected 2000
Prof. Dr. Kamaluddin Ahmad	Elected 2002
Prof. Dr. Mustafa Shameel	Elected 2003
Prof. Dr. Shahzad Ahmad Mufti	Elected 2003
Prof. Dr. S. Arshad Saeed	Elected 2007
Prof. Dr. Muhammad Arshad	Elected 2015



Prof. Dr. Muzaffer Ahmad	Elected 1970
Prof. Dr. Riaz Ali Shah	Elected 1974
Mr. Tajammal Hashmi	Elected 1977
Prof. Dr. Khairat Ibne Rasa	Elected 1979
Prof. Dr. Ishfaq Ahmad	Elected 1983
Prof. Dr. Viqar Uddin Ahmad	Elected 1991
Dr. Agha Ikram Mohyuddin	Elected 1992
Prof. Dr. Nasir ud Din	Elected 1996
Prof. Abdul Raouf	Elected 1997
Lt. Gen. Muhammad Saleem	Elected 1999
Prof. Dr. Syed Qasim Mehdi	Elected 1999
Prof. Dr. Ajmal Khan	Elected 2001



11. PROFILES OF FOREIGN FELLOWS

Pakistan Academy of Sciences
2020



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; 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 Chinese Academy of Sciences (CAS),
52 Sanlihe Road, Beijing 100864, China

Tel: +86-10-68597606

Fax: +86-10-68526316

E-mail: president-office@cas.cn

- Education:** Department of Chemistry, Peking University, Beijing, China: undergraduate student, 1978; Institute of Chemistry, CAS, Beijing, China: M.S., 1981, Ph.D., 1985.
- Positions Held:** President, Chinese Academy of Sciences (CAS), (2011 to date); President, Academy of Sciences for the Developing World (TWAS) (2013 to date); President, Graduate University, CAS, (2001 to date); Executive Vice President, CAS, 1996-2004, 2004-2011; Director, National Center for Nanosciences and Technology, China, 2003-2008; Professor and Deputy Director, Institute of Chemistry, CAS, Beijing, 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, 1989; Associate Professor, 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, The World Academy of Sciences, (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.

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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

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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; Distinguished Adjunct Professor, King Abdulaziz University, Saudi Arabia, 2013 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, 2014-2017; Most Cited Chinese Researcher, Elsevier, 2015, 2016; 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

Fellowships/ Memberships: Fellow, IEEE, 2015; Member, Academia Europaea (Academy of Europe), 2016. Member, European Academy of Sciences and Arts, 2018;

Memberships: Academician, The International Academy for Systems and Cybernetic Sciences, 2019

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

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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; Soma 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.



Gilani, G. Sarwar

FOREIGN FELLOW: Elected 2011

Born In India, in 1943

Nutrition & Health Consultant 1429 Forest Valley Drive,
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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

Acid Requirements for Human Nutrition (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

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- 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 InterAcademy 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

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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



Kharin, Stanislav Nikolaevich

FOREIGN FELLOW: Elected 1998

Born in Kaskellen Village of Almaty Region, Kazakhstan, on December 4, 1938

59 Tolebi, Almaty, 050000, Kazkhstan

Residence: 050043 Almaty Orbita-1-24-6, Kazkhstan

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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 Electron 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 Gottingen, Germany (1998-2001); Privatdozent, Heisenberg Research Scholar, University of Gottingen, 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 Lattakia, 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

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Mob: (39 366) 655 0648

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- 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, 2020-present Elected Vice-Chair, Forum on International Physics (FIP), American Physical Society 2020-present; President, Friends of ICTP Association, 2016-present; .Chair, Inter-divisional Group Physics for Development, European Physical Society, 2015-present; Chair, TWAS Physics Grants Committee, 2015-present; Regular Member Sigma Xi
- Research/Areas:** Low Temperature Physics, Fluid Turbulence, Quantum Turbulence



Nieschlag, Eberhard

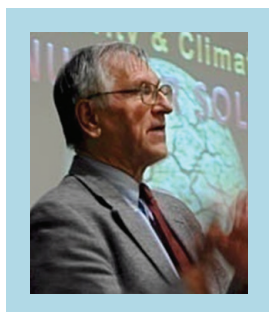
FOREIGN FELLOW: Elected 1996

Born in Germany, on July 16, 1941

Former Director,
Institute of Reproductive Medicine University of Münster,
Domagkstr. 11, D-48149,
Münster, Germany

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- 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:** 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:** 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.
- Presidencies:** 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).



Peterson, R. J.

FOREIGN FELLOW: Elected 1996

Born in Everett, Washington State USA, on October 10, 1939

Department of Physics, University of Colorado,
Boulder, Colorado 80309-0390, USA

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- Education:** University of Washington, USA: BS, magna cum laude, 1961, Ph.D., 1966.
- Positions Held:** 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, 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

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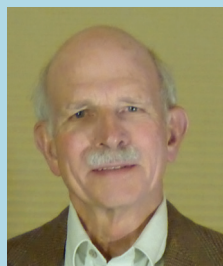
Education: Govt. College and University of the Punjab, Lahore, Pakistan: B.Sc., 1958; M.Sc., 1961; Liverpool University, United Kingdom: Ph.D., 1964; Birmingham University, United Kingdom: D.Sc., 1977

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 Juelich, 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.

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.

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.

Research/Areas: Nuclear chemistry, analytical radiochemistry, medical radionuclides.



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

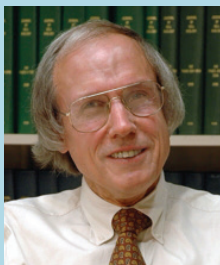
Email: dsmith7@unl.edu

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; Co-Chair Asilomar Conference on Mass Spectrometry; Fogarty Fellowship for Research at the Institut 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

Department of Physics,
Brookhaven National Laboratories Upton, New York, USA

- Education:** Early education in China, 1936-1956; University of Michigan, Ann Arbor, Michigan, USA: BSE (Physics & Mathematics), 1959; Ph.D. (Physics), 1962.
- Positions Held:** Presently Professor of Physics, Brookhaven National Laboratories, Upton, New York; Thomas Dudley Cabot Institute Professor of Physics, Massachusetts Institute of Technology (MIT), 1977; Professor of Physics, MIT, 1969; Leader, Experimental Group, Deutsches Elektronen Synchrotron, Hamburg, Germany, 1966; Instructor, 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 Enrigen 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; Doctor Honoris Causa by University of Michigan, Ann Arbor, 1978; Chinese university, Hong Kong; University of Jiatong, Shanghai, China, 1987; University of Bologna, Italy, 1988; Columbia University, New York, 1990; University of Science & Technology, China, 1990; Moscow State University, Moscow, 1991; University of Bucharest, Romania, 1993; Doctor Honoris Causa by the University of Michigan, Columbia University, Moscow State University, Rheinische Westfälisch Technische Hochschule (Germany), University of Bologna (Italy), University of Bucharest (Romania), Hong Kong University of Science and Technology, etc.
- Fellowships/ Memberships:** Ford Foundation Fellow, 1963; Member, American Academy of Arts and Sciences, 1975; Member, Academia Sinica, Republic of China, 1975; Member, US National Academy of Sciences, 1977; Member, Soviet Academy of Sciences, 1989; Member, Hungarian Academy of Sciences, 1993; Member, Chinese Academy of Sciences, 1994; Member, Russian Academy of Sciences, 1995; Member, Deutsche Akademie Der Naturforscher Leopoldina (Germany), 1996; Royal Spanish Academy of Science; Honorary Fellow of the Tata Institute of Fundamental Research (India).
- Research/Areas:** Physics.



Voelter, Wolfgang

FOREIGN FELLOW: Elected 1983

Born in Ludwigsburg, Germany, on October 20, 1936

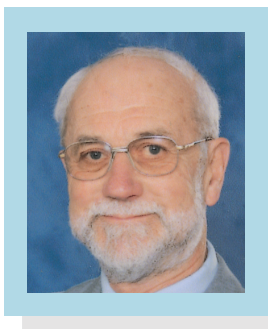
Head of the Board of the Institute for Scientific Cooperation, Germany

Tel: (07071) 297 3041; 610113

Fax: (07071) 650016

Email: wolfgang.voelter@uni-tuebingen.de

- Education:** Tübingen University, Tübingen, Germany: Diplom in Chemistry, 1963, Vorphysikum in Medicine, 1964, Dr.rer.nat., 1966; Erlangen University, Erlangen, Germany: Physikum in Medicine, 1966.
- Positions Held:** Head, Board of the Institute for Scientific Cooperation, Tübingen, Germany, 1985-2005; Tübingen University, Tübingen, Germany: Head, Department of Physical Biochemistry, 1976-2005; Vice Dean, Faculty of Chemistry and Pharmacy, 1976-1980; Vice Director, Chemisches Zentralinstitut, 1976-1980; University Professor 1973 to date; Research Fellow, Kaiser Foundation Research Institute, San Francisco, California, USA, 1967; Research Associate, Stanford University, Stanford, California, USA, 1966-67.
- Awards:** Kneipp Award (for structure elucidation of natural products), 1983; Erich Krieg Award (for studies on drug metabolism), 1984; Japan Society for the Promotion of Science Award, 1986; Special Award and Gold Medal of the President of Pakistan, 1986; Sitara-i-Imtiaz, Govt. of Pakistan, 1995; Doctor of Science Honoris Causa, University of Karachi, Pakistan, 1990; Doctor of Science Honoris Causa, Hamdard University, Pakistan, 2003; *Hila-i-Pakistan* by President of Pakistan, 2005; Felicitation Volume Award, Hamdard Foundation, 2006; Honorary Badge, Bulgarian Academy of Sciences, Sofia, 2006; Foundation-Stone Laying of Völter Foundation (support of young children's education), 2012; Elected Vice President of Völter Foundation, 2013.
- Fellowships/ Memberships:** Member, International Advisory Board of Dr. Panjwani Center for Molecular Medicine and Drug Research, 2004; Member Board of Prof. Dr. Harald Grübler Foundation, 2003; Elected Member, Art Foundation Baden-Württemberg, 1978-2000; Elected Member, Third World Academy of Sciences, Trieste, Italy, 1996; Elected Member, Bergmann-Kreis since 1980; Numerous grants and fellowships donated; Co-organizer of numerous symposia.
- Research/Areas:** Isolation, synthesis and bioactivity of natural products.



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.



12. 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 (Noble Laureate, Chemistry 2003)	Elected 2008
Plant, Tony M.	Elected 2008
Rode, Bernd Michael	Elected 2016
Hasnain, S. Samar	Elected 2017
Huang, Wei	Elected 2018
Betzel, Christian	Elected 2019

13. Deceased Foreign Fellows

Prof. Dr. Norman E. Borlaug, Noble Laureate	Elected 1982
Prof. Dr. H. Hartmann, Noble Laureate	Elected 1982
Prof P.A.M. Dirac, F.R.S., Noble Laureate	Elected 1982
Prof. Dr. John Bardeen, Noble Laureate	Elected 1982
Dr. Ralph Randles Stewart E.	Elected 1983
Dr. George Beadle, Noble Laureate	Elected 1983
Prof. Dr. Gell-Mann Murra	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



14. Members of the Academy

Pakistan Academy of Sciences
2020



14. Members of the Academy

1. **Dr. Muhammad Sayab** Elected 2012
Assistant Professor,
National Centre of Excellence in Geology
University of Peshawar, Peshawar
2. **Dr. Sohail Nadeem** Elected 2012
Professor, Department of Mathematics
Quaid-i-Azam University, Islamabad
3. **Dr. Syed Ghulam Musharraf** Elected 2013
Associate Professor
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
4. **Dr. Asma Saeed** Elected 2013
Senior Scientific Officer
Food and Biotechnology Research Centre
Pakistan Council of Scientific and Industrial Research Laboratories
Complex, Lahore
5. **Dr. Muhammad Ansar** Elected 2013
Associate Professor, Department of Biochemistry
Faculty of Biological Sciences
Quaid-i-Azam University, Islamabad
6. **Dr. Bilal Haider Abbasi** Elected 2014
Associate Professor, Department of Biotechnology
Faculty of Biological Sciences
Quaid-i-Azam University, Islamabad
7. **Dr. Reaz Uddin** Elected 2014
Assistant Professor
Dr. Panjwani Center for Molecular Medicine and Drug Research Center
for Chemical and Biological Sciences
University of Karachi, Karachi
8. **Dr. Gul Shahnaz** Elected 2014
Assistant Professor
Department of Pharmacy
Faculty of Biological Sciences
Quaid-i-Azam University, Islamabad
9. **Dr. Tariq Mahmood** Elected 2015
Associate Professor and Chairperson
Department of Plant Sciences
Quaid-i-Azam University, Islamabad



10. **Dr. Nudrat Aisha Akram** Elected 2016
Assistant Professor
Department of Botany
GC University, Faisalabad
11. **Dr. Mushtaq Ahmed** Elected 2016
Associate Professor
Department of Plant Science
Quaid-i-Azam University, Islamabad
12. **Dr. Zia-ur-Rehman** Elected 2016
Assistant Professor
Department of Chemistry
Quaid-i-Azam University, Islamabad
13. **Dr. M. Farooq** Elected 2017
Associate Professor
Department of Agronomy
University of Agriculture, Faisalabad
14. **Dr. Sammer Yousaf** Elected 2017
Assistant Professor
H.E.J. Research Institute of Chemistry
University of Karachi, Karachi
15. **Dr. Muhammad Zaffar Hashmi** Elected 2017
Assistant Professor
Department of Meteorology
COMSATS Institute of Information Technology Islamabad
16. **Dr. Syed Sikandar Azam** Elected 2018
Assistant Professor
National Center of Bio Informatics
Quid Azam University Islamabad
17. **Dr. M. Imran Arshad** Elected 2018
Assistant Professor
Institute of Microbiology,
University of Agriculture, Faisalabad
18. **Dr. Aqeel Javeed** Elected 2018
Associate Professor
Department of Pharmacology & Toxicology,
University of Veterinary and Animal Sciences, Lahore



19. **Dr. Shujaul Mulk Khan** Elected 2019
Assistant Professor,
Department of the Plant Sciences,
Faculty of Biological Sciences,
Quaid-i-Azam University, Islamabad
20. **Dr. M. Arif Nadeem** Elected 2019
Assistant Professor
Department of Chemistry,
Quaid-i-Azam University, Islamabad
21. **Dr. Muhammad Usman** Elected 2019
Experimental Physics Laboratories,
National Center for Physics,
Quaid-i-Azam University campus, Islamabad



Pakistan Academy of Sciences

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