

Newsletter

PAKISTAN ACADEMY OF SCIENCES

Promoting Science, Technology and Innovation for Socio-economic Development

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SI

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Message by the President

My sincere gratitude to the Fellows of Pakistan Academy of Sciences (PAS) for electing me as President of the Academy.

PAS is a premier organization of Scientists that is striving to promote higher education and Research in Scientific disciplines which includes both pure and applied sciences. It also formulates the standard of scientific efforts. PAS Fellows are a pool of the highest scientific talent in the country, they all have excelled in their respective fields as is shown by the fact that their achievements are well recognized by the Government. We have been honoured with three *Nishan-i-Imtiaz*, fourteen *Hilal-i-Imtiaz*, and thirty-four *Sitara-i-Imtiaz* apart from many pride of Performance and *Tamgha-i-Imtiaz* decorated Scientists.



They are well-positioned to lead the development of S&T in the country. Apart from few highly respected fellows largely our fellows' efforts are directed to the research and development of the subject only rather than the development of R&D of the country. We must try to help stakeholders and policymakers as a think tank and constantly introduce new global trends and technologies in science and educational policies.

I hope that Fellows will give attention to this aspect and come up with policy documents on different subjects so that the PAS is recognized as a credible source of knowledge by the Government of Pakistan.

**Fellows and Members
may submit news and
views related to Science
and Technology to:**

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New Council of Pakistan Academy of Sciences

The newly elected office bearers of the Pakistan Academy of Sciences for the term 2021 – 2023 are:



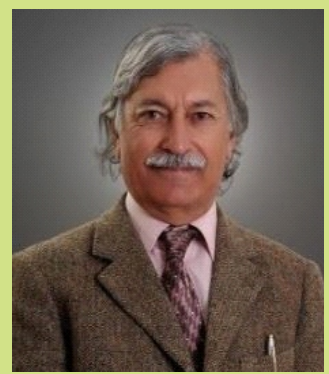
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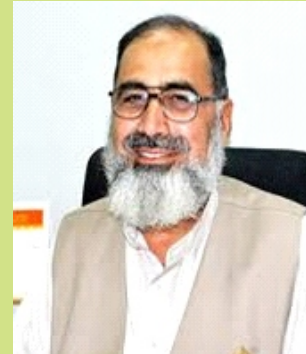
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Secretary Punjab Chapter



Dr. Mohammad Wasay
Secretary Sindh Chapter



Dr. Khan Bahadur Marwat
Secretary KP Chapter



Dr. Anwar-ul-Hassan Gilani
Member



Dr. Mohammad Perwaiz Iqbal
Member



Dr. M. Rasul Jan
Member



Dr. Azra Khanum
Member

Note: The General Body (GB) approved the successful candidates for the period 2021-2023. Secretary Quetta Chapter is yet to be elected. Similarly, nominations are awaited from the Ministry of Education, Higher Education Commission, and Ministry of Science & Technology for three Members of the Council.

2020 General Body Meeting of the Pakistan Academy of Sciences



A meeting of the PAS General Body (GB) was held on December 29, 2020 in the Auditorium of PAS. The meeting comprised of the induction of a Fellow elected in 2020, Foreign Fellows and Members elected in 2020, and announcement the PAS Gold Medals and prizes to the winning scientists for their contributions to Science in Pakistan. Prof. Dr. Khalid Mahmood Khan, President PAS, complimented the outgoing Council in his address. He also stated that now the Academy has become more vibrant internationally, leading to greater global recognition.

Prof. Dr. M. Aslam Baig, Former Secretary General PAS, gave a presentation portraying the remarkable contributions of PAS in terms of collaborations with

other scientific institutions in the country and international scientific forums during 2019-2020. It also included all the MoUs, conferences, seminars, visits of foreign scientists to the academy, and consultative workshops on boosting the science and technology sector.

Prof. Dr. M. Qasim Jan, Former President PAS, briefly addressed the meeting and mentioned that the PAS activities were hampered by a bad year of pandemic, although several events were arranged as informed by the Secretary General. He particularly appreciated the contributions of Prof. Dr. Iqar Ahmad Khan and said that the webinar series on Agriculture plugged the gap created by COVID-19.

Induction of Fellows Elected during 2019

The following candidates were approved by the GB to be inducted as PAS Fellow in the year 2020. They have been formally inducted as PAS Fellow.

Prof. Dr. Habib Ahmed, Former Vice-Chancellor, Islamia College Peshawar, Pakistan, was elected as Fellow of the Academy in 2019. He was formally inducted and given a medallion and certificate by the President PAS, Dr. Qasim Jan, during the GB meeting held in Islamabad on December 29, 2020. The inducted Fellow signed the Charter Book of the PAS.

Prof. Dr. Aamer Saeed Bhatti, Professor Chemistry, Quaid-e-Azam University Islamabad, Pakistan, was elected as Fellow of the Academy in 2019. He was formally inducted and given a medallion and certificate by the President PAS, Dr. Qasim Jan, during the GB meeting held in Islamabad on December 29, 2020. The inducted Fellow signed the Charter Book of the PAS.



Induction of Fellows Elected during 2019

Prof. Dr. Arshad Saleem Bhatti, Professor/Dean Faculty of Science, Comsats University, Islamabad, was elected as Fellow of the Academy in 2019. He was formally inducted and given a medallion and certificate by the President PAS, Dr. Qasim Jan, during the GB meeting held in Islamabad on December 29, 2020. The inducted Fellow signed the Charter Book of the PAS.



Maj. Gen. Dr. Aamer Ikram, Executive Director, National Institute of Health, Islamabad, Pakistan, was elected as Fellow of the Academy in 2019. He was formally inducted and given a medallion and certificate by the President PAS, Dr. Qasim Jan, during the GB meeting held in Islamabad on December 29, 2020. The inducted Fellow signed the Charter Book of the PAS.



Prof. Dr. Sohail Nadeem, Department of Mathematics, Quaid-i-Azam University Islamabad, Pakistan, was elected as Fellow of the Academy in 2019. He was formally inducted and given a medallion and certificate by the President PAS, Dr. Qasim Jan, during the GB meeting held in Islamabad on December 29, 2020. The inducted Fellow signed the Charter Book of the PAS. .



New Fellows of PAS Elected during 2020

The following eminent scientists were elected as Fellows of the PAS during 2020.

Dr. Iftikhar Ahmad

Vice Chancellor
Gomal University
D.I. Khan, KP

Dr. Osman Yusuf

Chief Consultant
The Allergy and Asthma Institute
Islamabad

Dr. Muhammad Ali

Vice Chancellor
Quaid-i-Azam University
Islamabad

Dr. M. Raza Shah

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

Dr. Abdul Hameed

Department of Microbiology
Quaid-i-Azam University
Islamabad

Foreign Fellows of PAS Elected during 2020

The following eminent scientists were elected as Foreign Fellows of the PAS during 2020.

Dr. Munir Ozturk

Rtd. Professor
Botany Department
Ege University
Izmir, Turkey

Dr. Peng CUI

Professor
Institute of Mountain Hazards and
Environment (IMHE),
Chinese Academy of Sciences (CAS), Chengdu

Dr. Sayed Amjad Hussain

Emeritus Professor
Thoracic and Cardiovascular Surgery College of
Medicine and Life Sciences,
The University of Toledo and Op-ed Columnist,
the Toledo Blade,
Portland, USA

Members of PAS Elected during 2020

The following eminent scientists were elected as Members of the PAS during 2020.

Dr. Ali Haider

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

Dr. Muazzam Ali Khan Khattak

Tenured Associate Professor
Department of Computer Science
Quaid-i-Azam University, Islamabad

Dr. Muhammad Ali

Assistant Professor
Department of Biotechnology
Quaid-i-Azam University, Islamabad

PAS Gold Medals and Prizes during 2020

The General Body has approved the PAS Gold Medals and Prizes 2020 in various disciplines for the following scientists.

Agricultural Sciences

Dr. Mehboob ur Rehman

Plant Biotechnology Division
NIBGE, Faisalabad

Emerging Technologies

Dr. Amjad Ali

Atta-ur-Rahman School of Applied Biosciences
NUST, Islamabad

Biological Sciences

Dr. Rehmat Ali Khan

Department of Biotechnology
University of Science & Technology, Bannu

Engineering Sciences

Dr. Muhammad Zahir Iqbal

GIK Institute of Engineering Science &
Technology, Topi, KP

Chemical Sciences

Dr. Shehnaz Perveen

Pakistan Council of Scientific & Industrial
Research Laboratories Complex, Karachi

Health Sciences

Dr. Yasir Waheed

Foundation University Medical College
Foundation University, Islamabad

Earth and Environmental Sciences

Dr. Muhammad Afzal

NIBGE, Faisalabad

Physics

Dr. Maaz Khan

Physics Division, PINSTECH
Nilore Islamabad

Prof. Zabta K. Shinwari Gold Medal in Biotechnology for scientists(under 50)

Dr. Abdul Rehman

Department of Microbiology & Molecular Genetics
University of Punjab, Lahore.

World Science Day for Peace and Development 2020 November 10, 2020



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

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

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

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

National Science Day (January 29, 2021)



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

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

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

He further added that such events, including World Science Day, are also celebrated by, the Ministry of Science and Technology (MoST) and MoST- PAS can join hands for future activities. Three talks were delivered by Fellows of the PAS:

Prof. Dr. Iftikhar Ahmad (VC Gomal University) talked on "Growing shadows of uncertainties in Higher Education Sector of Pakistan", Prof. Dr. Hafeez-ur-Rehman Hoorani (Director-General, National Centre for Physics, Quaid-i-Azam University (QAU)) spoke on "Unification of fundamental forces", and Prof. Dr. Ghulam Murtaza (Emeritus Professor of Physics at QAU) delivered an engaging talk on "Abdus Salam-- Journey from Jhang to Royal Palace Stockholm".

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

Brief News

Prof. Dr. M. Qasim Jan, Former President PAS, has started sharing his time between Islamabad and the National Center of Excellence in Geology, the University of Peshawar, where he is a Distinguished National Professor Emeritus.

Prof. Dr. Zabta Khan Shinwari (Fellows PAS & Professor Emeritus, QAU) gave a presentation on "Belt and Road Initiative: Impact on Science with and for Society" organized by Xinjiang Institute of Geography and Ecology of the Chinese Academy of Sciences on December 4, 2020.

PAS Agriculture Series of Online Webinars on Agriculture Organized by the Punjab Chapter, PAS

Prof. Dr. Iqar A. Khan (Fellow PAS and Secretary Punjab Chapter PAS) led the Series of Online Webinars on Agriculture. The series had collaborations with several national and international partners and the Chinese Embassy in Islamabad. The international partners included FAO, IFAD, Chinese Academy of Sciences, ACIAR-Australia, COMSTECH, ICB-Dubai, and numerous universities. The events were viewed in more than 30 countries. The keynote speakers (>50) were resourced from across the globe in 20 of the 22 events. They were top names in their respective fields, including the 2020 winner of the World Food Prize (Prof. Ratan Lal, Ohio State University).

Episode 15 entitled Vegetable Seed Production and Supply Chain - November 3, 2020

Episode 16 entitled Oilseed Crop Production and Supply Chain - November 6, 2020

Episode 17 entitled World Science Day for Peace and Development - Recarbonization of Global Soils: Challenges & Opportunities
November 10, 2020

Episode 18 entitled Potential of CRISPR/CAS Technology for Improving Agricultural Productivity
November 27, 2020

Episode 19 entitled Genome Editing in Crops and Livestock Improvement and Human Health
December 4, 2020

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

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

A Virtual Seminar on One Health Organized by COMSTECH Organized in Collaboration with UPSIGN, UK and PAS (December 17, 2020)

A virtual was organized by the COMSTECH in collaboration with the UK-Pak Science and Innovation Global Network (UPSIGN), United Kingdom, and PAS ON December 17, 2020. Speakers at a webinar "One Health" addressed various health issues and diseases in detail, including multiple types of cancers, emerging risks of covid-19, and chemicals that may cause more than 200 diseases. Prof. Dr. M. Iqbal Choudhary Coordinator-General, COMSTECH & Fellow PAS, was the chief guest of this event.

National, as well as international speakers, participated in this seminar, including Prof. Fiona Tomley, Prof. Experimental Parasitology and Director, UK Research and Innovation, Global Challenges Research Fund, One Health Poultry, Prof. Munir Iqbal, Head of Avian Influenza Virus (AIV) group, Pirbright Institute, Dr. Osman Dar, Public Health England, Prof. Seval Akgun, Chief Quality Officer, Director, Employee and Environmental Health Departments Baskent University Hospitals Network, Turkey, Dr. Zahida Fatima, Deputy Director, Pakistan Agriculture Research Council (PARC),



Islamabad, Prof. Iqar Ahmed Khan, Fellow PAS, Islamabad and Dr. Khalid Mahmood, UPSIGN, UK participated in this webinar.

Dr. Iqar Ahmad Khan (Fellow PAS) was the moderator of this webinar. He highlighted how the ecosystem is affecting health as a whole. In the end, Dr. M. Iqbal Choudhary appreciated the efforts in arranging this webinar to address these important issues.

Punjab Higher Education Commission (PHEC) Organised an Online Training for Registrars of Public & Private Sector Universities / DAIs of Punjab

PHEC organized an online training (via Microsoft Team) on “Administration, Planning, and Management” for Registrars of Public & Private Sector Universities / DAIs of Punjab from Monday, December 28, 2020, to Tuesday, December 29, 2020.

The major topics covered during the training included the Role of Registrar - Administrative Challenges, Strategies for Organizational Excellence and Practicing Good Governance, Academic Planning & Management, How to achieve performance-based targets & goals, Evolving Role of Registrar in a Modern University, Human Resource Management (HRM) – Challenges, Financial Planning and Budgeting, Procurement, Contract & PPRA Rules and Leveraging Information Technology.

The resource persons for the training included Prof. Dr. Nasir Mahmood (Dean, Faculty of Science Education, AIOU Islamabad), Prof. Dr. M. Khaleeq ur Rehman (Former VC, GCU, Lahore), Dr. Ali Sajid (Director, Lahore School of Professional Studies), Prof. Dr. Mahmood ul Hasan Butt (Former VC, AIOU / Consultant HEC, Islamabad), Prof. Dr. Jawad Syed Professor, (School of Business, LUMS, Lahore), Dr. Syed Mubashir Ali, (Associate Professor, School of Business, LUMS, Lahore), Mr. Amjad Saleemi, (Former

Additional Secretary, Department of Finance, Govt. of Punjab) and Mr. Mohsin Yaseen Director, KICS, UET Lahore.

Prof. Dr. Fazal A. Khalid (Fellow PAS & Chairman, PHEC) inaugurated the training program. He, while addressing the participants, highlighted the importance of administration, planning, and management in universities. Mr. Asif Ali, (Registrar, UET, Lahore) and Dr. Riasat Ali, (Registrar, KEMU, Lahore) shared their views regarding administrative challenges faced by Registrars of universities. Mr. Qasim Ali Shah (Motivational Speaker, Trainer, Writer, and Educator) was specially invited to talk about inspirational leadership and how a registrar can effectively exhibit leadership and become a role model for his/her colleagues.

Vice Chancellors of public and private universities, namely Prof. Dr. Khalid Masood Gondal, (VC, KEMU, Lahore), Prof. Dr. Asghar Zaidi, (VC, GCU, Lahore), Mr. Mian Imran Masood, (VC, USA, Lahore), were also invited to talk about the expectation of Vice Chancellor office from Registrar office and how both offices can synergize their efforts for achieving organizational objectives.

One Day Virtual Conference on “Awareness on the Psychological Consequences and Mental Health in Pandemics; A Case of COVID-19 Infodemic” (December 31, 2020)

One Day Virtual Conference entitled “Awareness on the Psychological Consequences and Mental Health in Pandemics: A case of COVID-19 Infodemic” was organized by the Department of Biotechnology, Quaid-i-Azam University, Islamabad in collaboration with the United Nations Educational, Scientific and Cultural Organisation (UNESCO), Jakarta, celebrating the theme “Science For and With Society in Dealing with Global Pandemic” on 31st December 2020.

More than a hundred participants attended this event and participants in questions and answer sessions regarding the COVID-19. The objective of organizing this event was to create awareness of disseminating authentic information about the global pandemic and to assist people in living a new normal using the platform of young researchers and senior experts. Prof. Dr. Muhammad Ali, Vice Chancellor, QAU & Fellow-Elect PAS Islamabad delivered the welcome address and appreciated the organizers for this fruitful event. This event was honored by distinguished

speakers including; Prof. Dr. Zabta Khan Shinwari (Fellow, PAS and Professor Emeritus, QAU, Islamabad), who shared his views about the responsibility and role of the responsible researchers in sharing the right information during this global viral attack, while Prof. Dr. Anila Kamal, Director, National Institute of Psychology, Quaid-i-Azam University Islamabad benefited the participants and shared the consequences of COVID-19.

Prof. Dr. M. Idrees CEMB, University of the Punjab, Lahore. Dr. Muhammad Ali, Department of Biotechnology, QAU, Islamabad, and Dr. Shahbaz Khan, Director UNESCO Jakarta and UNESCO representative, moderated this event successfully. The conference was concluded by Dr. Bilal Haider Abbasi (Member, PAS) with a vote of thanks to the invited speakers and the participants for their time and contribution.

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

PAS will be on Inter-Academy Partnership working groups on Open Science and Biosecurity to promote responsible/ethical research practices in the biosciences and related fields, to engage with international organizations and conventions by feeding information into their discussions on the latest scientific developments and providing recommendations, and to engage more IAP member academies in the work of the BWG.

Prof. Zabta Shinwari was chosen as a member of both the working group.

Dr. Zabta Khan Shinwari participated in the IAP-International Biosecurity Working Group and expressed his opinion and views over Anti-social social media: Infodemic in pandemics” on December 2, 2020.

22nd Conference of the Islamic World Academy of Sciences (IAS) entitled 'Landscape of Science, Technology, and Innovation in the Islamic Countries (December 1, 2020)

22nd Science Conference entitled 'Landscape of Science, Technology, and Innovation in the Islamic Countries.' organized by the Islamic World Academy of Sciences (IAS) virtually under the patronage of His Royal Highness Prince El-Hassan Bin Talal, Founding Patron of the Islamic World Academy of Sciences (IAS) was held on December 1, 2020. Addressing the conference, Prince Hassan highlighted the significance of Science for resolving all the emerging risks of climate emergencies and humanitarian emergencies.

Three of PAS Fellows presented at the conference

- 1) Climate Change and its Impact on Sustainable Agriculture and Food Security - **Dr. M. Qasim Jan**
- 2) Nurturing the Thinking Mind: The OIC Dilemma in Science, Technology & Innovation
Dr. Shaukat Khan
- 3) Islamic Countries: Open Science: Inclusive Society and Ethics - **Dr. Zabta Khan Shinwari**



In this conference, the emphasis was laid upon development in Science and Technology. Science should be promoted with the development of social infrastructure. But, with enabled and efficient governance and continuous support of patrons, we can achieve success in promoting the role of OIC. The speakers thanked Prince El-Hassan Bin Talal for his patronage. Prince El-Hassan Bin Talal appreciated the efforts of the organizing committee at the conference.

Prof. Dr. Syed. M. Qaim (Foreign FPAS) co-organized a Regional Advanced E-Learning Course in South Korea

Prof. Dr. Dr. h. c. mult. Syed M. Qaim of the Forschungszentrum Juelich and the University of Cologne, Germany, Foreign FPAS and an Honorary Professor at the Government College University Lahore, co-organized a Regional Advanced E-Learning Course sponsored by the International Atomic Energy Agency (IAEA), the World Council on Isotopes (WCI) and the Korean Atomic Energy Research Institute (KAERI), at Seoul, Korea, from 2 to 18th December 2020. As Chair of the Education and Training

Committee of WCI, he welcomed the participants, gave a series of lectures, and also acted as a Tutor. The course was devoted to Medical Radioisotopes and it was attended by about 20 participants from 15 Asian countries, including Pakistan. The resonance to the course by attendees was very positive

Prof. Dr. Jinde Cao (Foreign FPAS) Elected as a Fellow of the African Academy of Sciences

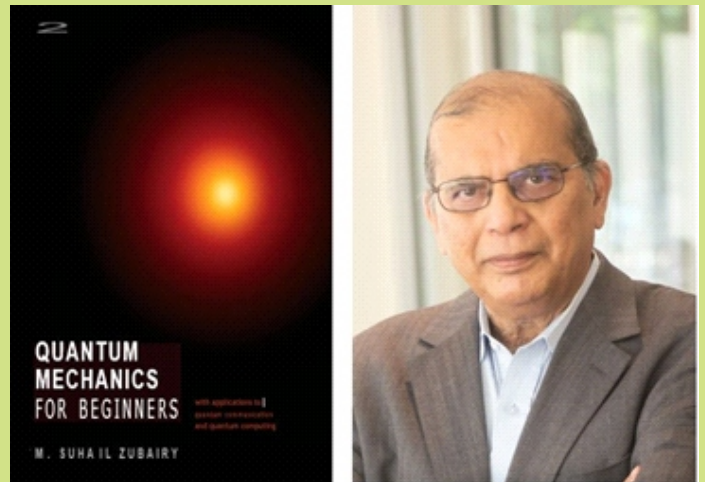
Prof. Dr. Jinde Cao has been elected as a Fellow of the African Academy of Sciences. He has been recognized for this membership due to his remarkable efforts and achievements in the field of Science and Technology.

He has made significant contributions in the field of Science and Technology. Beginning from 1996, there are currently more than 400 fellows in the African Academy of Sciences. AAS Fellows are elected for life based on their publications, researches, leadership roles, and contributions to Science and Technology.

The election was based on series of reviews conducted at various levels. The AAS Fellowship is awarded as a result of series of evaluations by the AAS Membership Advisory Committees (MACs) in various fields of specialization. Fellows of the Academy voted before the decision of Governing Council. Fellows' votes and the recommendations of the MACs were compiled and submitted to the AAS Governing Council for review and final endorsement.

Prof. Dr. Suhail Zubairy (Fellow, PAS) Published a Book on Quantum Mechanics

Prof. Zubairy is a University Distinguished Professor and the holder of the Munnerlyn-Heep Chair in Quantum Optics at Texas A&M University. He has made many pioneering contributions in the fields of quantum optics and quantum information. He is the co-author (with Marlan Scully) of a classic textbook on Quantum Optics. Prof. Zubairy has received many honors including the Willis E. Lamb Award for Laser Science and Quantum Optics, Alexander von Humboldt Research Prize for Distinguished Scientists, and the George H. W. Bush Award for Excellence in International Research. He is a Fellow of the Pakistan Academy of Sciences, American Physical Society, and the Optical Society of America.



Prof. Suhail Zubairy has written a book entitled "Quantum Mechanics for Beginners" which is now published by Oxford University Press. Quantum mechanics is one of the most successful theories of human history as, after the passage of about 100 years, no known effect violates its predictions. Despite this great success, it remains a mysterious theory, and the concepts of wave-particle duality, complementarity, probabilistic nature of measurement, quantum interference, and quantum entanglement are still hotly discussed. These concepts have led to many important applications in the field of quantum computing and quantum communication. Prof. Zubairy's new book introduces, on one hand, the foundation of quantum mechanics, but also provides an accessible account of the fields of quantum computing and quantum communication.

The topics covered in Prof. Zubairy's book include wave-particle duality, Heisenberg uncertainty relation, Bohr's principle of complementarity, quantum superposition and entanglement, Schrodinger's cat, Einstein-Podolsky-Rosen paradox, Bell theorem, quantum no-cloning theorem, and quantum copying, quantum eraser and delayed choice, quantum teleportation, quantum key distribution protocols such as BB-84 and B-92, counterfactual communication, quantum money, quantum Fourier transform, quantum computing protocols including Shor and Grover algorithms, quantum dense coding, and quantum tunneling. All these topics and more are explained fully, but using only elementary mathematics.