

Newsletter

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Pakistan Academy of Sciences, Islamabad, organized “National Dialogue on Biotechnology-A Strategic Tool to Address Climate Change & National Food Security” (April 07, 2026)



Realizing the fact that Pakistan's agriculture sector is facing increasing pressures from climate change, declining productivity, water scarcity, and rapid population growth, the Pakistan Academy of Sciences (PAS) organized a one-day National Dialogue on “Biotechnology – A Strategic Tool to Address Climate Change and National Food Security” in hybrid format at its Secretariat in Islamabad on 07 April, 2026 in a hybrid format. The event brought together senior government officials, leading scientists and researchers and participants from national institutions, Fellows & Members of the Pakistan Academy of Sciences, representatives and stakeholders from the agriculture, poultry and livestock sectors, biotechnology industry experts, international experts from CropLife Asia, as well as media representatives and policy analysts to discuss the role of biotechnology in addressing Pakistan's climate and food security challenges.

The event was inaugurated by Ms. Aisha Humera Chaudhry, Federal Secretary, Ministry of Climate Change and Environmental Coordination, Islamabad. In his opening remarks, Prof. Dr. Kauser Abdullah Malik (HI, SI, TI), President Pakistan Academy of Sciences highlighted the salient objectives and importance of the event. He mentioned that the main objective of the event is to provide a platform to highlight biotechnology innovations relevant to Pakistan's agricultural landscape and to facilitate constructive dialogue on policy pathways that can support responsible innovation and technological advancement in the sector; as well as to examine the evolving food security dynamics in Pakistan, including developments in the crop, poultry, and livestock sectors, which are critical components of the country's food supply system.

The technical part of the event consisted of Lecture Sessions on Government Perspective (Strengthening Food Security through Innovation and Industry Perspective), as well as Industrial perspectives followed by Session on Panel Discussions. The key speakers of the technical sessions included, Mr. Ahmed Umair, Coordinator to PM on Agriculture & Food Security; Prof. Dr. Asif Ali, Chairman National Seed Development and Regulatory Authority (NSDRA); Mr. Shahzad Ali Malik, Chief Executive Officer Guard Agri Pvt. Limited. It was highlighted that biotechnology is not a luxury but a necessity to cope up the challenges of food security and climate change. Therefore, innovations in biotechnology including transgenomes and genome editing must be supported for commercialization.

The Panel Session on Biotechnology and Pakistan's Food Security Future was moderated by Dr. Yusuf Zafar, Vice President, Pakistan Central Cotton Committee (PCCC). Seven panelists including the Vice Chancellor University of Agriculture Faisalabad; Director General EPA (MoCC)-Islamabad; Director Centre of Excellence in Molecular Biology (CEMB)-University of The Punjab; Director NIGAB-NARC, Islamabad; Member Agriculture PAFDA-Lahore; Representative of Regulatory Affairs-CropLife Pakistan; and Representative of Pakistan Poultry Association (PPA) deliberated at the panel session. Each panelists highlighted the achievements and challenges present in their sub-sector and suggested some possible solutions. Several recommendations were made during the Session on Panel Discussions: These included the following: (i) The panelists urged the Government of Pakistan to approve two pending policies namely, the National Agriculture Biotechnology Policy, and the National Seed Policy; (ii) The panelists emphasized to review and approve Biosafety Rules Amendment as developed extensive

consultation as well as to address the needs to resolve regulatory confusions on new breeding technologies; (iii) It was suggested that to get maximum benefit of Biotechnology, Pakistan needs to address the gaps related to biotechnology, investment in biotechnology research, public-private partnership and standard settings for experts; (iv) The panelists urged for better public-private cooperation for harnessing benefits of biotechnology specifically in the domain of agriculture and food security.

The event was concluded with vote of thanks by Prof. Dr. Muhammad Aslam Baig (HI, SI, TI), Secretary General, Pakistan Academy of Sciences. He thanked the participants for their full time attendance by physical and on-line participation which shows the importance of the event on National Dialogue on Biotechnology. He mentioned that globally, biotechnology has become an important scientific tool in addressing agricultural challenges related to climate change and food security.

Prof. Dr. Nadim J. Shah, Director, Institute of Neuroscience and Medicine - 4, Jülich, Germany Delivered an Invited Talk on “Imaging the Human Brain” at Pakistan Academy of Sciences, Islamabad (February 2, 2026)



Pakistan Academy of Sciences (PAS) organized a popular talk on “Imaging the Human Brain, particularly MRI and MR-PET, with their Applications” by Prof. Dr. Nadim J. Shah, University Distinguished Professor and Director, Institute of Neuroscience and Medicine – 4, Jülich, Germany, on February 02, 2026, in the Auditorium of the Academy at Islamabad.

Prof. Dr. Noor Muhammad Butt (Fellow PAS) and Dr. Riffat M. Qureshi (Director Admin. PAS) welcomed the honorable speaker and the participants. Around 70 participants, including professionals, scientists, academicians, policy makers and International Liaison Officials, and postgraduate students from various Nuclear

Medicine, Oncology and Radiotherapy related institutions and hospitals of PAEC like NORI, CENUM, INMOL, INOR; PIEAS, as well as those from Pakistan Nuclear Regulatory Authority (PNRA), Pakistan Nuclear Society (PNS), Health Services Academy (HSA), ECO-Science Foundation (ECO-SF), National Academy of Young Scientists (NAYS), National Institute of Health (NIH), Quaid-i-Azam University (QAU), Ministry of Science & Technology (MoST); Pakistan Science Foundation (PSF), NORI, PAEC, NILOP, Islamabad Medical & Dental College (IMDC), National University of Medical Sciences (NUMS), Islamic International University Islamabad (IIUI), and National Univ. of Science & Technology (NUST) attended the lecture physically and virtually.

In his talk, Prof. Shah mainly discussed the importance of MRI and MR-PET, particularly focusing on: Advances in ultra-high-field (7T) human brain MRI; multimodal and multidimensional MRI for brain research; layer-specific functional MRI and its significance; metabolic and molecular brain imaging using MRI and MR-PET; Simultaneous MR-PET systems for in vivo neuroscience; and future research directions and clinical translation. Starting from a Brief Introduction into MRI, Prof. Shah highlighted the advances in structural-functional-metabolic imaging of the human brain with emphasis on innovations in multimodal MRI-PET; structural imaging at 7T; mapping of whole-brain resting-state networks with half-millimeter in-plane resolution; layer-specific fMRI of the human brain using EPIK; sodium imaging at 4T, 7T; metabolic imaging at 3T, 7T, and 7T MR-PET; and GE-SE EPIK: fast multi-parametric QMRI towards OEF: from the idea to its application on tumour patients. In his concluding remarks, Dr. Riffat M. Qureshi (Director Administration, PAS) highlighted the role of Pakistan

Academy of Sciences in providing a unique platform to scientists, academicians and postgraduate researchers in the country to deliberate on matters related to various disciplines of S&T for socioeconomic development in the Country. He mentioned that today's session with Prof. Dr. Nadim J. Shah has provided a great opportunity to young professionals present in the PAS auditorium as well as online participants to have an interactive discussion regarding the topic of the invited talk. He also emphasized the need to promote active and meaningful collaboration between scientists, academicians, researchers, regulators and policymakers working at the Nuclear Medical Centers, National Institutes of Health, Universities and the Ministry of Health in Pakistan to improve the health services and education in Pakistan. Towards the end of the talk, Prof. Dr. Noor M. Butt (Fellow PAS) presented a Souvenir to the Guest Speaker Prof. Dr. Nadim J. Shah, on behalf of the Secretary General, Pakistan Academy of Sciences.

Women in Science: Leading the Future, International Day of Women & Girls in Science Islamabad (February 16, 2026)



The National Academy of Young Scientists (NAYS) Pakistan, in collaboration with the Pakistan Academy of Sciences (PAS), organized a high-level seminar titled “Women in Science: Leading the Future” at the Pakistan Academy of Sciences, Islamabad, to commemorate the International Day of Women and Girls in Science.

The event commenced with a welcome address by Dr. Sara Qaiser, Director Policy Unit, PAS. Prof. Dr. Aslam Baig, Secretary General, PAS, introduced the Academy and highlighted the significance of the International Day, emphasizing the need to support women scientists at every stage of their careers and ensure equal opportunities for their professional growth.

The technical sessions featured distinguished speakers from academia and industry: Prof. Dr. Zartasha Mustansar, Senior Academic and Representative of SINES at the National University of Sciences and Technology

(NUST), spoke on Women as Science Leaders. She underscored the distinct leadership styles often demonstrated by women, noting that empathy, inclusivity, and collaborative decision-making strengthen institutional environments. Dr. Gulshan Irshad, Faculty Member at PMAS-Arid Agriculture University Rawalpindi, presented on Empowering Science Students through CETEWA. She highlighted the transformative role of the Center of Excellence for Women in AgriTech in providing opportunities to young women researchers and emphasized that enabling women in science directly contributes to national economic growth. Dr. Zoya Khalid, Faculty Member at COMSATS University Islamabad, delivered a talk titled Breaking Barriers: Women Leading the Future of AI-Driven Life Sciences. She discussed challenges faced by women researchers, shared personal insights from her journey, and noted the increasing return on investment (ROI) of women-led enterprises globally.

Dr. Kubra Mehmood, Chief Executive Officer of Planet BioLabs, addressed Empowering Women Scientists through Entrepreneurship, focusing on research commercialization, innovation-driven enterprises, and women-led startups in Pakistan. She shared inspiring success stories of women entrepreneurs such as Sehat Kahani, BJ MicroLab, and Ecobricks, encouraging young researchers to translate scientific ideas into impactful ventures.

The Chief Guest, Prof. Dr. S. Komail Tayebi, President of the Economic Cooperation Organization Science Foundation (ECOSF), delivered a keynote address highlighting the importance of regional scientific collaboration, science diplomacy, and empowering women researchers for sustainable development. He reflected on his professional experience, recognizing the

vital contributions of female scientists in various organizations, and reaffirmed ECOSF's full support for advancing opportunities for women in science.

The event concluded with a vote of thanks by Dr. Aftab Ahmad, President of NAYS Pakistan, who expressed gratitude to PAS leadership—particularly Prof. Dr. Aslam Baig and Dr. Riffat Qureshi—for their support, as well as to the speakers and participants for their valuable contributions. The seminar ended with souvenir distribution and a group photograph.

The seminar successfully reinforced Pakistan's commitment to inclusive scientific development and highlighted the critical role of women scientists in driving innovation, leadership, and sustainable national progress.

Meeting with Delegation from China to Pakistan Academy of Sciences (PAS) for TCM Collaboration and S&T Engagements (April 28, 2026)

On the invitation of COMSTECH, a Visit of Delegation from China to Pakistan Academy of Sciences (PAS) was organized to discuss matters related to training of OIC Scientists in Traditional Chinese Medicine (TCM) and to

explore collaborative engagements such as prospects for a joint S&T Program with COMSTECH and Pakistan Academy of Sciences.



Meeting of Prof. Dr. Aslam Baig, Secretary General, PAS, with Dr. Kumail Tayebi, President of the ECO Science Foundation (February 16, 2026)

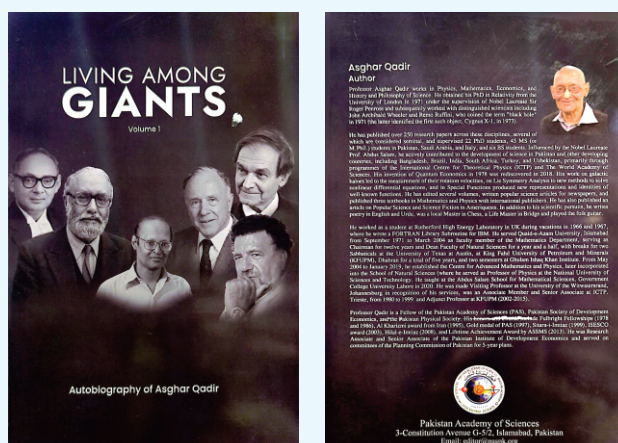
Prof. Dr. M. Aslam Baig (Secretary General, PAS) and Dr. Riffat M. Qureshi (Director Admin., PAS) held a productive meeting with Dr. Kumail Tayebi, President of the ECO Science Foundation, on Feb. 16, 2026. The meeting aimed to explore avenues for strengthening scientific collaboration among Academies of Sciences of Pakistan, Iran, and Turkey. The discussion focused on initiating joint research programs, academic exchanges, and capacity-building initiatives in the priority areas of Quantum Sciences, Materials Science, and Artificial Intelligence (AI). They emphasized the importance of regional cooperation in advancing frontier technologies and agreed to work toward structured collaborative ventures that would benefit the scientific communities of the three countries.



Autobiography:

Living Among Giants: The Autobiography of Asghar Qadir (Volume 1)

Published by the Pakistan Academy of Sciences in March 2026



Pakistan Academy of Sciences (PAS) sponsored the publication of book titled: “Living Among Giants: Autobiography of Asghar Qadir, Volume-I” by Prof. Dr. Asghar Qadir (Fellow, PAS). The Book has been printed and circulated by PAS among Fellows working in the domain of Physics.

Workshop on 'Aquaponics for Entrepreneurs' Organized by The Institute of Zoology, University of the Punjab, in collaboration with the Pakistan Academy of Sciences (April 21, 2026)



The Institute of Zoology, University of the Punjab, with support and collaboration of the Pakistan Academy of Sciences, organized a one-day workshop on Aquaponics for Entrepreneurs on 21 April 2026. The workshop aimed to promote aquaponics as an innovative, sustainable, and climate-smart technology that integrates fish farming and soilless plant cultivation in a closed-loop system. The event brought together students, researchers, entrepreneurs, and professionals interested in sustainable agriculture and food production systems.

Prof. Dr. Muhammad Ali (S.I., T.I.), Vice Chancellor, University of the Punjab was the Chief Guest at this occasion, while organization of event was coordinated by Prof. Emeritus M. Waheed Akhtar, Prof. Nabila Roohi, and Prof. Noor Khan. Renowned experts, including Prof. Emeritus M. Waheed Akhtar, Prof. Noshawan Shoaib, Dr. Hafiz Abdullah Shakir, Dr. Mahroze Fatima, and Dr. Mubeen Sarwar, delivered technical presentations and shared their expertise on aquaponics system design, water quality management, nutrient cycling, fish and

plant selection, and entrepreneurial opportunities in the sector.

More than 50 participants from academia, fish industry and Punjab Fisheries Department received both theoretical knowledge and practical training through hands-on demonstrations of aquaponic system. They emphasized that the aquaponics offer significant potential for youth entrepreneurship and can play an important role in strengthening Pakistan's food security and climate resilience.

Participants acknowledged the gain in technical aspects of the aquaponic system and appreciated the opportunity to engage directly with the operational system and interaction with the experts. The organizers expressed their sincere gratitude to the Pakistan Academy of Sciences and the Institute of Zoology for their valuable support and collaboration in making the event a big success.

Pakistan Academy of Sciences (Sindh Chapter) in collaboration with SIREN, International Center for Chemical and Biological Sciences (ICCBS), University of Karachi

The Pakistan Academy of Sciences (Sindh Chapter), in collaboration with SIREN, ICCBS, University of Karachi, organized a series of academic and public-engagement activities between January and July 2026. These events included hybrid workshops, lectures, and a short course, spanning a wide range of disciplines, including data analysis, infrastructure policy, and climate science, scientific philosophy, public health, condensed matter physics, personal finance, and institutional quality management. Each activity brought together subject-matter experts and participants to build knowledge, exchange ideas, and address contemporary scientific and societal challenges. A descriptive account of each activity follows.

Activity 1 | February 26-27, 2026 Quantitative Data Analysis for Quality Control Using SPSS Two-Day Hybrid Workshop

Resource Person: Dr. Ayaz ul Haq, Campus Director & HOD MS, University of Greater Manchester, Islamabad

This two-day hybrid workshop introduced participants to SPSS, one of the most widely used statistical software packages, as a tool for quantitative research in the sciences. The sessions covered a broad range of statistical procedures, including techniques for summarizing data and testing for significant differences between groups, such as t-tests and analysis of variance (ANOVA). The workshop gave participants a practical, hands-on opportunity to build proficiency in applying SPSS to real-world quality-control data analysis.



Activity 2 | March 3, 2026 Infrastructure Development under CPEC: Progress and Challenges Hybrid Lecture

Resource Person: Dr. Ayaz ul Haq, Campus Director & HOD MS, University of Greater Manchester, Islamabad

This lecture examined the major infrastructure projects undertaken under the China–Pakistan Economic Corridor (CPEC), with particular focus on progress achieved in the road, rail, and energy sectors. It explored the role of Special Economic Zones (SEZs) in driving industrial development and identified key challenges facing the initiative, including financing constraints, security concerns, and implementation delays. The session concluded with an assessment of the long-term impact of infrastructure modernization on Pakistan's economy.



Activity 3 | April 8, 2026

Climate Change and (Im)mobility: The Case of Bangladesh and Implications for Pakistan

Hybrid Lecture

Resource Person: Dr. Jan Freihardt, Postdoctoral Researcher, Chair of International Political Economy and Environmental Politics, ETH Zurich

This lecture explored the complex relationship between climate change and human (im)mobility, drawing on Bangladesh as a detailed case study. The discussion extended these findings to consider their implications for Pakistan, offering participants a comparative perspective on how climate-driven displacement and migration patterns might inform national policy responses.



Activity 4 | April 13–14, 2026

Philosophy of Science

Two-Day Hybrid Short Course

Resource Person: Prof. Dr. M. Iqbal Choudhary, Mustafa (PBUH) Prize Laureate, H.I., S.I., T.I. Coordinator General, OIC–COMSTECH

In a rapidly changing world shaped by advances in artificial intelligence, climate science, biotechnology, and space exploration, this short course revisited the Philosophy of Science as an essential framework for questioning how scientific knowledge is produced, tested, and applied. It connected classical debates on objectivity, theory, and evidence with contemporary scientific challenges, equipping participants to examine the foundations and methods of scientific knowledge, distinguish science from pseudoscience, trace the evolution of scientific theories, and rigorously evaluate scientific claims in light of evidence and context.



Prof. Zaheer Ul-Haq (Fellow, PAS) Elected as a Fellow of the Royal Society of Chemistry (FRSC), United Kingdom

Prof. Zaheer Ul-Haq, Professor of Computational Chemistry at the Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMD), International Center for Chemical and Biological Sciences (ICCBS), University of Karachi, has been elected as a Fellow of the Royal Society of Chemistry (FRSC), United Kingdom, in recognition of his distinguished contributions to computational chemistry, molecular modeling, structure-based drug discovery, and the advancement of chemical sciences. Fellowship (FRSC) is one of the highest professional recognitions conferred by the Royal Society of Chemistry upon scientists who have demonstrated sustained excellence, leadership, and significant impact in the chemical sciences.

In addition, he was awarded the professional designation of Chartered Chemist (CChem), recognizing his advanced professional competence, leadership, and commitment to maintaining the highest standards of professional practice and continuing professional development in the chemical sciences.

Moreover, on the nomination of the Pakistan Academy of Sciences, Prof. Zaheer served as a member of the monitoring team for the National Skill Competency Test (NSCT) conducted nationwide on 4–5 April 2026. The monitoring assignment involved visiting designated examination centers, evaluating operational readiness, ensuring transparency in the conduct of the examination, and documenting observations as part of the Academy's contribution to independent quality assurance.



Book Chapters Published by Prof. Munir Ozturk (Foreign Fellow, PAS)

N. Huda, A. Gul, M. Ozturk, and V. Altay. Chapter 2 - Impact of geopolitical conflicts on food supply chain, droughts, and water scarcity. T.A. Kurniawan and M.N.V. Prasad (Eds.). In: *Climate Change Impacts on the Water-Energy-Food Nexus: Net Zero Emissions and Sustainability*. Elsevier pp. 11-28 (2026). ISBN 9780443223204. <https://doi.org/10.1016/B978-0-443-22320-4.00002-5>.

K. Rafique, A. Gul, V. Altay, and M. Ozturk. Chapter 14 - Technological innovation and its role in waste management and carbon neutrality. T.A. Kurniawan and M.N.V. Prasad (Eds.). In: *Climate Change Impacts on the Water-Energy-Food Nexus: Net Zero Emissions and Sustainability*. Elsevier pp. 185-208 (2026). ISBN 9780443223204. <https://doi.org/10.1016/B978-0-443-22320-4.00016-5>.

H. Imran, H. Iftikhar, A. Gul, M. Ozturk, and V. Altay. Chapter 18 - Nexus and connections of waste management, energy conservation, and economic development. T.A. Kurniawan and M.N.V. Prasad (Eds.). In: *Climate Change Impacts on the Water-Energy-Food Nexus: Net Zero Emissions and Sustainability*. Elsevier pp. 269-288 (2026). ISBN 9780443223204. <https://doi.org/10.1016/B978-0-443-22320-4.00023-2>.

H. Turker, B.T. Ünal, and M. Ozturk. Chapter 9 - Green Nanoparticles for Sustainable Agriculture Opportunities and Challenges. In: *Green Nanoparticles: Valuable Tools for the Food Sector*. Fernanda Maria Policarpo Tonelli H. C. Ananda Murthy Letícia Fernandes de Oliveira, Khalid Rehman Hakeem (Eds.). First edition. Apple Academic Press Inc. CRC pp. 151-159 (2026).

B.T. Unal, H. Turker, and M. Ozturk. Chapter 6 - Osmotic stress protection in plants: the role of exogenous melatonin. In: *Plant Biology, sustainability and climate change, Polyamines-Phytohormones-Nutrients Network*. A. Masood, N.A. Khan, N.A. Anjum, and V. Fotopoulos (Eds.). Academic Press pp. 163-181 (2026). ISBN 9780443247347. <https://doi.org/10.1016/B978-0-443-24734-7.00015-1>.