



Pakistan Nuclear Society



Waqar Ahmad
Executive Member





Introduction

- A non-governmental, non-profit, scientific/academic body
- Established in **1990** and registered under the societies' registration Act-1860
- A forum of highly qualified professional from nuclear fields and allied disciplines
- More than **1100** lifetime members and 70 Fellows
- PNS Council comprises of 9 members; elected for 2 years
- Two advisory boards (SAB & AAB)
- Organizes conferences, seminars and lectures related to peaceful uses of nuclear technology
- A website and a quarterly Newsletter





Vision

To become a resource centre for disseminating information and to promote practical applications on peaceful uses of nuclear science, engineering and technology for sustainable socio-economic development





Mission

*To create public awareness about the benefits of nuclear technology in **power generation, human health, environmental protection, water management, agriculture, industry, safety and security**. To achieve this purpose, seminars, conferences, workshops, etc are held. Experts in relevant fields are engaged to transfer knowledge to future generations. Enhance linkages with national S&T organizations and universities by signing MoU for joint ventures in areas of common interest. The Society acts as a hub for promoting its cause of peaceful applications worldwide alongwith international partners.*





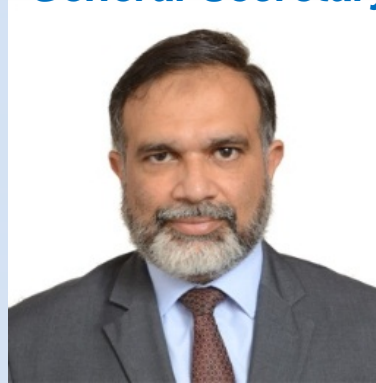
PNS Council (2021-22)

President



Dr. Muhammad Tahir Khaleeq
CS (R) / Former DG (NPE), PAEC

General Secretary



Dr. Mohammad Mohsin
DCS / Director (HRD), PAEC

Finance Secretary

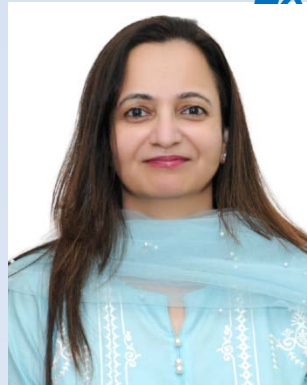


Mr. Ghulam Sarwar
DCS (R) / Head SID, PINSTECH

Executive Members



Mr. Waqar Ahmad Butt
*CS (R) / Former DG (IA&T)
Former Minister (Technical)
Pakistan Embassy, Vienna*



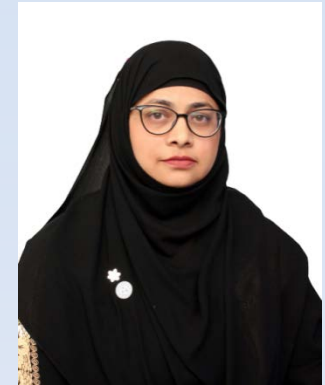
Dr. Shazia Fatima
Director (KIRAN)



Dr. Niaz Ahmad
DCS (R), PINSTECH



Syed Zahid Hussain
PS, PINSTECH



Ms. Shazia Fayyaz
*Unit Head, IAEA
PSO PNRA*





Scientific Advisory Board (SAB)

- **Engr. Pervaz Butt** former Chairman PAEC/Sec. MoST (*Chair*)
- **Mr. Anwar Habib**, former Chairman PNRA
- **Dr. Yusuf Zafar**, former Chairman PARC
- **Dr. Abdullah Sadiq**, former Rector GIKI
- **Mr. Waqar Murtaza Butt**, former Member Eng.
- **Syed Ziauddin**, former Member Eng. PAEC
- **Syed Yusuf Raza**, former Member Power, PAEC
- **Dr. Rakhshanda Bilal** , Ex-DG Tech, PAEC
- **Dr. Javed Hanif** former President PNS
- **Dr. Mohammad Faheem** Director NORI
- **Dr. M. Tahir Khaleeq** President PNS (*Secretary*)





PNS Administrative Advisory Board

- **Dr. Ansar Parvez**, Advisor NCA / Former Chairman PAEC (*Chair*)
- **Maj. Gen. (R) Ahmad Bilal**, Advisor NCA/Ex-Chairman SUPARCO
- **Senator Nauman Wazir Khattak**, Chairman FF Steels
- **Mr. Ahmer Bilal Soofi**, Lawyer / Ex- Caretaker Federal Minister
- **Prof. Dr. Muhammad Mujahid**, Rector PAF-IAST
- **Prof. Dr. Robina Farooq**, VC GCWU
- **Air Commodore Khalid Banuri®**, Ex-DG ACDA
- **Mr. Kamran Akhtar**, DG ACDIS, MoFA
- **Prof. Dr. Zafar Nawaz Jaspal**, QAU
- **Mr. Nusrat Mirza**, Journalist, Author and TV Personality
- **Dr. M. Tahir Khaleeq** President PNS (*Member/Secretary*)





Activities of PNS Council 2021-22

- Conducted 12 Seminars since 2021 in different cities of Pakistan
- Conducted 3 Webinars during Covid-19 pandemic
- Three days International Conference on the Applications of Nuclear Technology for Sustainable Socioeconomic Development, 24-26 October, 2022 in Islamabad
- Outreach/Linkages: Meetings with 11 different organizations, universities etc.
- MoUs with NCP, PPS, SASSI, CEES and Technology Times
- A dynamic website launched and updated regularly
- Quarterly newsletter is being published timely



- Panels of Experts have been reconstituted
- PNS Focal Persons have been appointed in different Centers
- WiN Pakistan has been re-established
- A Student Chapter has been formed
- Industrial Support Programme has been Initiated with the help of EDB, Ministry of Industries & Production, Islamabad
- Social Events are being conducted for PNS Members and their families: Annual dinner, trips, picnics, etc.
- Discounts from different hotels, restaurants, shops and other privileges for PNS Members
- Informative/promotional programmes on TV and social media





PNS Industrial Support Programme

- PNS has initiated industrial liaison to support indigenization in local industry
- PNS is preparing a database of interested retired members which will be hired as advisors and consultants to provide linkages with industries according to their expertise
- Industries may also submit their problems/questions online via PNS Website
- Recently, EDB has asked for help in surgical industry for indigenous production of medical devices
- EDB is interested to provide help for mass production of ventilator and other medical instruments



Pakistan's Nuclear Programme - Initial Strides

1956

Pakistan Atomic Energy Commission was formed



1960

First nuclear medical center in Karachi.
Atomic Energy Medical Center
(AEMC)



1962

First Agriculture Center established in Tandojam
Nuclear Institute of Agriculture
(NIA)



1965

First research reactor went critical at
Pakistan Institute of Nuclear Science and Technology
(PINSTECH)



1971

Karachi Nuclear Power Plant commissioned
(KANUPP)



**1960's
and
70's**

Trained large number of professionals abroad
Set-up PAEC's own training/education centers



Where are we at present

- ❖ NPPs = 6
- ❖ Academic Institutions = 3
- ❖ R & D Centres = 6
- ❖ Engineering setups = 4
- ❖ Agri. & Bio-Tech Centres = 4
- ❖ Nuclear Medical Centres = 19



Current Status of Nuclear Power in Pakistan

<u>Nuclear Reactor</u>	<u>Power (MWe)</u>
C-1	325
C-2	325
C-3	340
C-4	340
K-2	1100
K-3	1100



Research and Development



PARR-1 = 10 MW

Isotope Production, R&D, etc.

PARR-2: MNSR (27 kW)

For Neutron Activation and training

- Fission Mo-99 production
- Linear accelerator development
- Radiation detectors fabrication
- Ageing management of PARR-1
- PINSTech Phase-II/ PARR-3



Application of Nuclear S & T in Industry

AI-Technique Corporation of Pakistan (ATCOP)

Irradiation Plants:

- *Pakistan Radiation Services (PARAS)*

Sterilization of medical, surgical products and pharmaceutical raw materials

- *PARAS FOODS*

Fresh fruits and vegetables, bulbs, roots, cereal, pulses, nuts, sea foods, dried herbs, spices etc.



Agriculture & Biotechnology Centers



NIA , Tandojam, Sindh , 1962
Nuclear Institute for Agriculture

NIAB, Faisalabad , Punjab, 1972
Nuclear Institute for Agriculture &
Biology



NIFA , Peshawar, KPK, 1982
Nuclear Institute for Food and Agriculture

NIBGE , Faisalabad, Punjab, 1994
National Institute for Biotechnology
and Genetic Engineering



Major R&D Areas

- ❖ **Crop Improvement:** New varieties/ Genetic modifications
- ❖ **Bio-saline Agriculture/Nutrient Management:** Technologies/Processes
- ❖ **Insect Pest Management:** Bio-control, SIT, Pesticide residue
- ❖ **Industrial Biotech:** Enzymes/ Bio-leaching/Bio-fertilizer
- ❖ **Analytical Services:** Testing for wheat, rice, sugarcane, food & feed products, animal vaccines, environment studies, etc.



INOR
Abbotabad



NORI
Islamabad



GINUM
Gujranwala



IRNUM
Peshawar



SINOR

INMOL
Lahore



BINOR



PINUM
Faisalabad

CENUM
Lahore



CENAR
Quetta



DINAR

MINAR
Multan



LINAR
Larkana



BINO
Bhawalpur



AEMC
Karachi



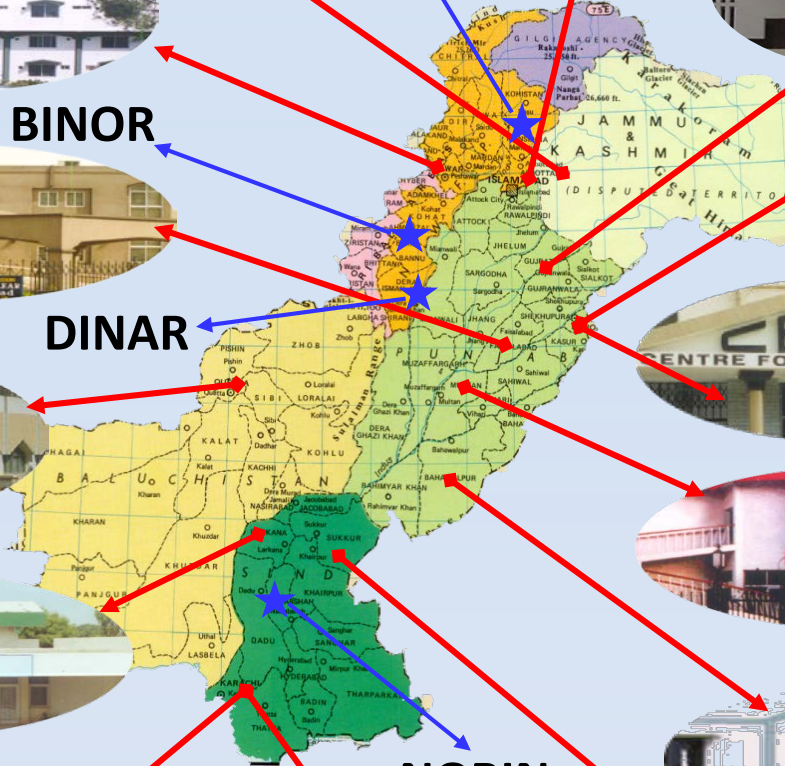
NORIN



NIMRA
Jamshoro



KIRAN
Karachi



Nuclear Medicine and Oncology

- **Functional Hospitals:** **19**
- **Hospitals planned for next 4 years:** **3**
- **Consultations/visits per year:** **> 800,000**
- **New cancer patients registered per year:** **~ 40,000**
- **Cancer patients treated in PAEC hospitals:** **~ 80%**
- *Free treatment for those who cannot afford to pay*





Thank You



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<https://pns.org.pk>

