



Issue 1/2021

January-March, 2021

PNS Newsletter

A Quarterly Newsletter of the Pakistan Nuclear Society

Patron:

Dr. Imtinan Elahi Qureshi, T.I.

Editor-in-Chief:

Waqar Ahmad Butt

Editors

Dr. Riffat M. Qureshi

Dr. Muhammad Sadiq

Mr. Waheed Akram

Inside this Issue

From the desk of Editor-in-Chief	01
Oath taking of the new Council	02
Activities during the 1st Quarter	03
Outreach	04
Reports by PNS Members	05
From the international media	06
Renowned Pakistani scientists	07
Social events	08
A historical photo	08
Nuclear news	09
Some personal reflections of the first PNS President	10
Message from the President	11
Announcements	12



The Council Members (see Page-12) with the Chief Guest Mr. Muhammad Naeem, Chairman PAEC, after oath-taking ceremony on 24th December 2020.

From the desk of Editor-in-Chief

The newly elected Council is grateful to all PNS members for reposing confidence in their guardianship and extending kind support during the election process. The new team is fully committed to its election manifesto and determined to come up to the expectations of the PNS members.

Previously, the PNS Newsletter had been published in hard-copy form on regular basis. But this practice was discontinued a few years ago. Even the on-line version could not be published after 2016 for various reasons. The new Council intends to publish it again on quarterly basis with an improved look. It is intended that, in a limited quantity, hard copies will be printed, however, the major distribution mode will be the on-line posting on PNS website.

The purpose of this publication will be three-fold:

1. creating awareness about the benefits of the peaceful applications of nuclear technology, and publicizing the contributions being made by Pakistani professionals working in this field;
2. dissemination of information about the developments taking place in the nuclear field world-wide; and,
3. to provide a forum for PNS members to share their views and learn about the ongoing activities and future programmes of their Society.

Meeting all these objectives would require active participation of PNS members. It is my pleasure to invite contributions in the form of short articles from readers on any matter relevant to the peaceful applications of nuclear science and technology as well as allied disciplines. Any interesting and informative material that members wish their colleagues to know about will also be welcome. Of course, your valuable suggestions to improve the quality of the newsletter or any other venture of PNS will be highly appreciated.

Vision

The vision of Pakistan Nuclear Society (PNS) is to become a resource centre for disseminating news and information about peaceful applications of nuclear science and technology in Pakistan and a hub of promoting this cause world-wide along with international partners for global environmental and economic stability. The principal tools to be used for this purpose would be PNS Website and PNS Newsletter.

Contact Us

Pakistan Nuclear Society
PAEC Rest House, Hanna Road
Sector G-8/3, Islamabad
URL: www.pns.org.pk
Email: council@pns.org.pk
Ph. Nos. (+92-51) 8895194/ 9262274

Oath taking of the new Council

The election of PNS Council for the term 2020-22 was held at the Pakistan Atomic Energy Commission (PAEC) Rest House, Sector G-8/3, Islamabad on 26th November 2020. The Oath Taking Ceremony of the elected Council took place at the same venue on 24th December 2020. Chairman PAEC Mr. Muhammad Naeem, HI, SI, took oath in a simple and elegant ceremony. Due to Corona restrictions, only office bearers of the present and the previous Council and three officials from PAEC HQ, Mr. Qamar Mahboob (Member Materials), Mr. Muhammad Munir (Secretary PAEC) and Dr. Imtiaz Ahmed (DG International Affairs) were invited.

The former President of the PNS Council, Dr. Muhammad Ashraf Chaudhry presented a brief summary of the PNS activities during his tenure. He especially mentioned about the two-day conference on "Water Problems in Pakistan and their Solutions" at Holiday Inn, Islamabad. He also mentioned the

with respect to educating general public about nuclear science and applications of nuclear technology in the areas of health, agriculture, industry, water resource management, environmental and climate change, etc. He stated that since its inception in 1991, several hundred elite scientists, engineers and medical doctors joined PNS as its member, yet the Society has not been able to realize its full potentials as a representative body of highly qualified professionals associated with nuclear science and technology in Pakistan. He showed his determination to project Pakistan's nuclear contributions from the platform of Pakistan Nuclear Society. He further added that PNS will also conduct programmes for attracting young students towards nuclear science, provide policy inputs on strategic issues, engage decision makers and approach international audiences through participation in Science Diplomacy Programmes, including those of the Ministry of Foreign Affairs (MoFA). He also appreciated the efforts of Convener Election Committee, Mr. Azhar Inayat, DG (Nuclear Power Engineering), PAEC and his team, especially



Chairman PAEC Mr. Muhammad Naeem talking oath from the elected members of the PNS Council

other main programmes arranged by PNS including Memorial Reference on the 1st Anniversary of Dr. Ishfaq Ahmad, former Chairman PAEC at Pakistan Academy of Sciences (PAS), Islamabad, Seminar on Cyber Security and Effects of Radiation on Human Health at Allama Iqbal Open University (AIU), Islamabad, Symposium on Nano-Medicine at INMOL, Lahore and Seminar on Energy Storage and Nuclear Energy at COMSATS, Islamabad. He lauded the efforts of the Council members for making all the programmes successful and thanked the organizations/ institutions especially PAEC, PSF, PAS and COMSATS for their support. He wished that the new Council may take up some of the planned programmes which could not be carried out due to the pandemic (COVID-19).

The new President of PNS Council, Dr. Imtiaz Elahi Qureshi, presented a vision of the future activities of the Society

Mr. Shaoib Akhter, for executing the election process in an efficient and transparent manner.

The Chief Guest, Mr. Muhammad Naeem, HI, SI, congratulated the newly elected Council of 'Like-Minded Persons' and also acknowledged and appreciated the efforts and activities conducted by the previous Council of PNS. He emphasized that PAEC has always supported the activities of PNS since its inception. The objectives chalked out in its constitution are useful for creating awareness about the applications of nuclear science and technology among the scientific communities as well as amongst the people of Pakistan. The Chairman PAEC highlighted that since PNS has a large number of in-service and retired professionals who possess in-depth knowledge and skills, therefore, their expertise

should be utilized for national causes. He suggested that the PNS should engage such senior scientists and engineers to give advice on emerging fields of scientific developments in their respective areas of expertise.

The Chairman PAEC also recounted the enormous services rendered by nuclear scientists for socio-economic development of Pakistan. He mentioned that PAEC has made a strong headway in power generation by running four nuclear power plants at CHASHMA near Mianwali and two recently built plants K-2 and K-3 near Karachi. These power plants will be supplying over 3500MWe of electricity to the national grid by the next year. He informed that installation of a third research reactor (PARR-3) through indigenous efforts is in progress at Nilore where the first research reactor (PARR-1) is operating with our own fuel. Moreover, PAEC has made great achievements in the field of agriculture by utilizing nuclear techniques. PAEC is running 18 nuclear medical hospitals in all provinces of Pakistan and the 19th hospital is near completion in Gilgit. He suggested that PNS should arrange programmes and launch social media campaigns to make the people realize about the benefit of Nuclear Science & Technology. Finally, he reiterated his commitment to provide all possible logistic support to PNS to meet its aims and objectives.

Activities during the 1st quarter

The first meeting of the newly elected Council

After taking oath, the first formal meeting of PNS Council Members presided by PNS President, Dr. Imtinan Elahi Qureshi was held in the Board Room of PAEC Rest House on Tuesday, 29th December 2020. The meeting was attended by all the Council members. Salient decisions of the meeting are as follows:

1. The following Sub-Committees were constituted to carry out various assignments:
 - a. Website restructuring (Dr. M. Tahir Khaleeq/ Dr. Shazia Fatima)



The first Meeting of PNS Council was held on Tuesday, December 29th 2020 at Board room of PAEC Rest House, G/8, Islamabad.

- b. Newsletter (Mr. Waqar Ahmad Butt/ Mr. Ghulam Sarwar)
 - c. PNS records including List of Members/Fellows (Mr. Waqar Ahmad Butt/ Mr. Ghulam Sarwar/ Syed Zahid Hussain)
 - d. Membership drive and M/Cards (Dr. Mohammad Mohsin/ Mr. Waqar Ahmad Butt)
 - e. Lectures/Webinars (Dr. Imtinan Elahi Qureshi/ Dr. M. Tahir Khaleeq/ Dr. Shazia Fatima/ Ms. Shazia Fayyaz)
 - f. Coordination with strategic organizations (Dr. Mohammad Mohsin/ Dr. Niaz Ahmad)
 - g. Partnership with other societies/think-tanks (Dr. Imtinan Elahi Qureshi/ Dr. Shazia Fatima/Ms. Shazia Fayyaz/ Mr. Waqar Ahmad Butt)
 - h. Purchases/entertainment/office up-keep (Mr. Ghulam Sarwar / Syed Zahid Hussain)
2. The design of new logo, membership card and letterhead pad were approved and adopted.
 3. A calendar of activities will be prepared after contacting relevant speakers.

Webinar on Artificial Intelligence in Medical Imaging, Feb. 21, 2021

In the wake of Covid-19 restrictions on public gatherings, PNS has shifted its focus to webinars in order to continue its educational programmes. This is in line with international trends and the well established usefulness of the practice. The first of the series of webinars, proved the efficacy of this format and attracted attention not only from Pakistan but from abroad also.



Speakers and topics:

1. Dr. Imtinan Elahi Qureshi, President PNS, "AI Overview".
2. Dr. Khan M. Siddiqui, MD, Hyperfine, USA, "Fear, Hype, and Reality of AI in Radiology".
3. Dr. Riccardo Laudicella, MD, Univ. Messina, Italy, "AI in Nuclear Medicine".
4. Dr. Yaser Ayaz, Head Robotic & AI, SMME, NUST, "AI Status in Pakistan".

Coordinator:

1. Dr. Shazia Fatima, Head Nuclear Medicine NORI, EM PNS (Recordings of the Webinar available on request)



The PNS delegation with Malik Qasim Mustafa, Director ACDC, and his team members at the Institute of Strategic Studies Islamabad (ISSI).



The PNS delegation with President SASSI University, Dr. Maria Sultan, and her colleagues.

Outreach

Meeting with ACDC-ISSI officials

Dr. Imtinan Elahi Qureshi, Mr. Waqar Ahmad Butt and Dr. Shazia Fatima visited the “Arms Control and Disarmament Centre (ACDC)” on Monday, December 21, 2020, at the Institute of Strategic Studies Islamabad (ISSI), Islamabad. Malik Qasim Mustafa, Director ACDC gave a presentation on the working of the ISSI and highlighted the achievements of ACDC since its establishment on October 30, 2019. He also elaborated the ACDC-ISSI Vision 2023.

Dr. Imtinan Elahi Qureshi appreciated the working of the ACDC at ISSI. He then highlighted the contribution of PNS in the areas of peaceful uses of nuclear energy and the welfare of the community of nuclear scientists in Pakistan.

Both sides agreed to exchange information, building linkages with the scientific community of Pakistan, organizing joint-events on various themes related to peaceful applications of nuclear technology, nuclear safety and security and its integration with other emerging technologies. The visit concluded with a tour of ACDC and the ISSI library.

Meeting with the Chairperson SASSI University

The sub-committee of PNS comprising Dr. Imtinan Elahi Qureshi, Mr. Waqar Ahmad Butt, Dr. Shazia Fatima and Ms. Shazia Fayyaz met the President/Chairperson of SASSI University, Dr. Maria Sultan, in her office on 24th December 2020. She was accompanied by Mr. Anwar Habib (former Chairman PNRA) who is currently serving as Director Power in the Centre for Nuclear Policy and Technology at SASSI.

The meeting was held in a very cordial and friendly atmosphere. Dr. Maria recounted the wide spectrum of academic activities of SASSI involving formal educational programmes, training courses, public policy engagement and international outreach. She suggested a number of

possibilities for bilateral cooperation between PNS and SASSI including, inter alia, joint webinars, training courses, media events, revenue generating programmes, publication of a journal, writing books etc. She candidly admitted that NGOs/ Think-tanks relevant to strategic studies need intellectual resources of professionals who are members of PNS.

Dr. Imtinan emphasised that PNS should be recognised as a resource base for nuclear knowledge. Mr. Anwar Habib was kind enough to agree that while introducing guest speakers in their webinars, who are members of PNS, their affiliation with PNS will be specifically mentioned. Both sides agreed to sign an MoU, after discussing specific areas and modalities of joint events, training programmes and publications.

Meeting with Chairman PSF

A delegation comprising of PNS Council members (Dr. Imtinan Elehi Qureshi, Dr. M. Tahir Khaleeq, Dr. Niaz Ahmed and Mr. Waqar A. Butt) and a lifetime member of PNS, Dr. Yusuf Zafar, former Chairman Pakistan Agriculture Research Council (PARC) held a meeting with the newly appointed Chairman, Dr. Shahid Mahmood Baig, SI, Pakistan Science Foundation (PSF), on January 07, 2021 in his office. On behalf of PNS Council, Dr. Qureshi congratulated Dr. Baig for



The members of PNS delegation with Dr. Shahid Mahmood Baig, Chairman Pakistan Science Foundation (PSF), and Dr. Mirza Habib, Director Research PSF.

his well deserved appointment and conveyed good wishes for his success in the new role. He said that every body in our Council is happy that a former PAEC colleague has been honored for his abilities, knowledge and experience.

Dr. Shahid Baig reciprocated good wishes for the future work of PNS. He said that PNS comprises of highly experienced scientists and engineers and this forum should propose new initiatives for the development of Science & Technology in the country and assured his full support for the Society.

Dr. Mirza Habib, Director Research PSF/ Acting Member Finance who also joined the meeting conveyed a good news that the Government has substantially enhanced budget of PSF for supporting learned societies, holding of scientific seminars, travel grants to speakers from abroad, publications of books and proceedings. PNS qualifies for these grants/ financial assistance to pursue its programmes.

Dr. Qureshi briefed the Chairman PSE about new initiatives and future plans of PNS. He offered him cooperation of the society in terms of academic support as PNS has a large number of highly qualified and experienced scientists and engineers at its pool as Lifetime Members. He made the following cooperative initiatives with PSF.

1. Participation in technical committees of PSF for evaluation of projects.
2. Advisory role in Science Museum project.
3. Volunteering for science popularization programmes.
4. Submission of research projects through S&T organizations or universities by the willing retired experts of PNS.

It was agreed that PNS office will act as a resource centre for any academic support required by PSF. The meeting ended with a commitment from both sides to keep close liaison and conduct joint activities falling under common objectives of the two organizations



Dr. Muhammad Faheem, Director Nuclear Oncology and Radiotherapy Institute (NORI) in conversation with the Council members of PNS in his office in NORI.

Meeting with Director NORI

President PNS, Dr. Imtihan Elehi Qureshi alongwith Dr. M. Tahir Khaleeq and Mr. Waqar A. Butt held a meeting with Dr. Muhammad Faheem, Director Nuclear Oncology and Radiotherapy Institute (NORI) on Wednesday, 13th January 2021. Dr. Shazia Fatima, Executive Member of PNS who is the Head of Nuclear Medicine Department at NORI also joined the meeting.

Dr. Qureshi briefed about the initiatives of PNS regarding the dissemination of information on peaceful uses of nuclear technology, including the role of nuclear medical centers of PAEC in the treatment of cancer all over Pakistan.

Dr. Faheem appreciated the programmes of PNS and assured the delegation of his personal and institutional support for the following activities:

1. Briefings about developments in nuclear medicine and oncology;
2. Informational videos about the facilities available at NORI;
3. Educational articles/videos about the use of radiations in therapy and imaging in clinical oncology;
4. Participation in webinars organized by PNS on topics relevant to Nuclear Medicine.

Reports by PNS Members

Report on Fall Armyworm (FAW): A New Emerging Threat to Cereal Food Crops in Pakistan

Dr. Saima Arain

Nuclear Institute of Agriculture (NIA), Tando Jam

PNS M.No. 2191

Wheat is the main staple food crop in Pakistan followed by rice. These food crops are grown in various regions of the country to feed the fast growing population. Negative impacts are being faced to these crops due to environmental swings resulting in more pests and diseases. Fall Armyworm (*Spodoptera frugiperda*) is one of the emerging threats to various crops including wheat, rice and corn. Occurrence of FAW has been reported in various maize growing areas of Sind (Tando Allahyar and Mirpur Khas) and Punjab (Khanewal, Okara, Sahiwal). Some types of armyworms have also been observed on wheat in Tando Jam. These worms damage wheat leaves which are the food factories to support the developing grains. The Government of Pakistan has mobilized teams to monitor these pests through rigorous surveys in the affected areas. Maize growers can face great losses due to this pest, as reported in African countries.

NIA has been conducting studies for the identification and control using the Integrated Pest Management approach.



From the International Media

Nuclear–Renewable Synergies for Clean Energy Solutions **JISEA News, December 17, 2020**

The definition of clean energy doesn't always include nuclear energy, but it's one of the world's largest sources of low-carbon electricity after hydropower. When considering greenhouse gas emissions, nuclear has the potential to be a key part of clean energy. Since 2011, the Joint Institute for Strategic Energy Analysis (JISEA) has explored the potential for increased integration of nuclear and renewables in the evolving power grid. Nuclear-renewable hybrid energy systems are physically coupled facilities that include both nuclear and renewable energy sources to produce electricity and another commodity product such as fuel, thermal energy, hydrogen, or desalinated water. They can provide electricity when the grid needs it and produce the commodity during other hours, increasing the economic benefit of the nuclear reactor.

In 2017, building upon the early reports, JISEA studied the economic potential of tightly coupled nuclear-renewable hybrid energy systems that produce hydrogen and generate electricity. The systems were profitable in scenarios with higher electricity and natural gas prices, low hydrogen prices, and increased electricity price volatility. It explores widescale hydrogen production and utilization in the United States to support the electric grid and play a larger role across industry and transportation. Researchers look at an electrolyzer at the National Renewable Energy Laboratory. Using electricity produced by renewable or nuclear energy, an electrolyzer splits water into hydrogen and oxygen with virtually zero atmospheric emissions.

New technologies like advanced inverters are paving the way for innovative nuclear solutions to industrial decarbonization, grid integration, and solving other challenges related to the clean energy transition. A recent study on novel multi-input, multi-output hybrid energy systems that synergistically incorporate diverse energy sources, including renewable, nuclear, and fossil with carbon capture, to provide sustainable, cost-effective, and reliable power, heat, mobility, and other energy services. Scientists have identified a viable path forward for these energy systems—a major step toward understanding today's most complex energy challenges.

Full article is available at: <https://www.jisea.org/20201217.html>

Cotton in Pakistan: How Nuclear Techniques are Helping the Textile Industry **IAEA Weekly News – January 22, 2021**

Cotton, linen and silk are textiles associated with fashion

capitals of the world. Some of those textiles popular with designers are produced in Pakistan, where the textile industry contributes 8.5 per cent to the gross domestic product and accounts for 60 per cent of the country's exports. But climate extremes such as heat waves and increasing temperatures have been impacting the cotton industry, which has seen an unprecedented fall in yields. IAEA, in partnership with FAO, is working with local experts to develop and introduce new varieties of cotton that are more resilient and better adapted to the new climate reality in the country. The new varieties developed now account for 40 percent of all cotton produced, up from just 25 per cent two years ago. These new varieties have higher yield and improved fibre quality as well as good agronomic performance and adaptability to climate change variation. The collaboration between the NIAB, IAEA and FAO includes a long-term technology transfer and capacity-building programme. Through this long-standing collaboration, Pakistani scientists have reached a level of expertise that they can share with neighbouring countries that are in the early stages of mutation breeding.

How can plant mutation breeding combat climate change? Seeds are first exposed to irradiation with gamma rays and then planted in growth chambers or greenhouses. Plants arising from the irradiated seeds are planted and advanced over three to four generations during which they are examined and selected for the traits targeted for improvement in the programme. Once suitable plant lines have been identified, they are planted in different locations (agroecological zones) of the country – representing various climatic and soil conditions. Once an advanced line/s has proven its performance in such multi-locational trials, it is released as a variety for cultivation by farmers. The seed of the variety is then multiplied so that farmers have access to sufficient amounts to plant.

Through implementing plant mutation breeding techniques, scientists can access novel genetic diversity that is not accessible through conventional breeding, and thus ensure the identification of new and improved lines in a shorter time, enabling the development of improved plant varieties adaptable to climate change and tolerant to abiotic stresses, such as heat and drought.

Complete article is available in PNS Educational Resources at www.pns.org.pk.

SMRs a clean, reliable complement for renewable energy **ANS Nuclear SmartBrief – February 12, 2021**

Small modular reactors are touted as having a multitude of advantages -- safer, smaller, less oversight needed, more electricity generated, no emissions -- but they still must overcome negative public perceptions of the industry. Nonetheless, many governments, countries and companies

are racing to develop SMRs that could ultimately complement renewable energy sources, such as wind and solar, and help replace coal- and gas-fired plants.

Fuel for world's largest fusion reactor ITER is set for test run **NATURE, NEWS, February 22, 2021**

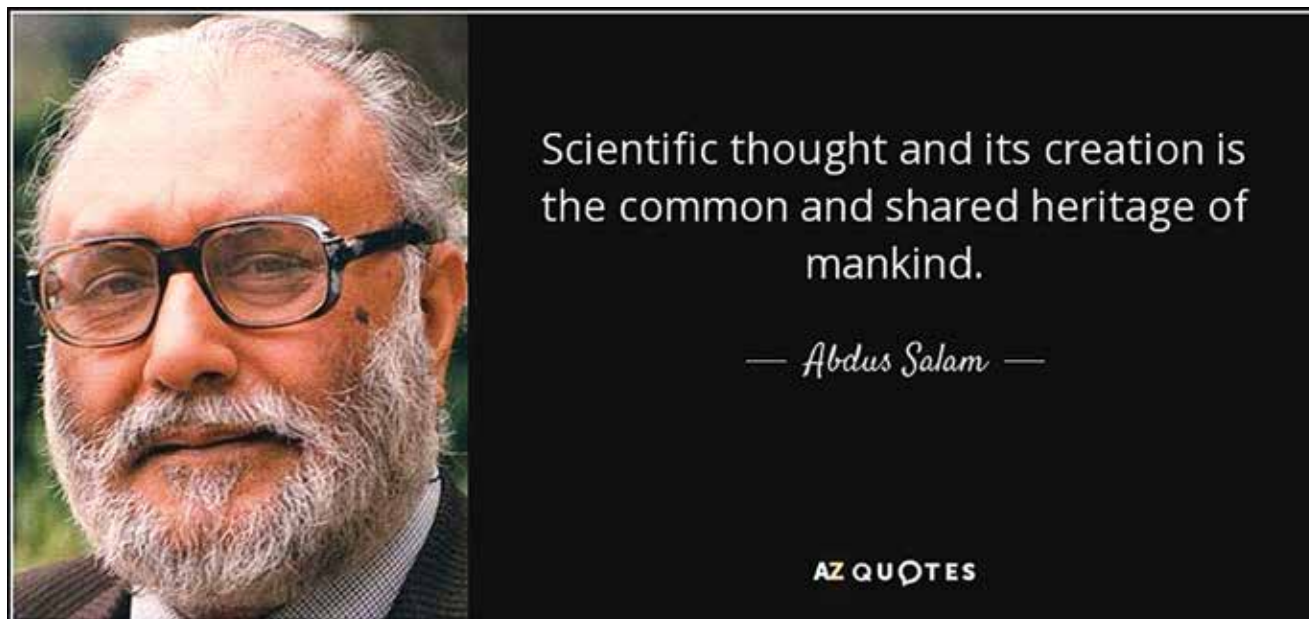
Nuclear fusion is the phenomenon that powers the Sun and, if physicists can harness it on Earth, it would be a source of almost limitless energy. The experiments with deuterium and tritium at the Joint European Torus (JET) are at a crucial dress rehearsal for the mega-experiment. A pioneering reactor in Britain is gearing up to start pivotal tests of a fuel mix that will eventually power ITER – the world's biggest nuclear-fusion experiment.

In December, researchers at the Joint European Torus (JET) started conducting fusion experiments with tritium. It is the first time since 1997 that researchers have done experiments in a tokamak with any significant amount of tritium. The reactor should heat and confine a plasma of deuterium and tritium such that the fusion of the isotopes into helium produces enough heat to sustain further fusion reactions. JET's experiments will help scientists to predict how the plasma in the ITER tokamak will behave and to craft the mega-experiment's operating settings. ITER will begin operations with low-power hydrogen reactions in 2025. But from 2035, it will run on a 50:50 mix of deuterium and tritium.

doi: <https://doi.org/10.1038/d41586-021-00408-1>

Renowned Pakistani Scientists

The first Pakistani to receive a Nobel Prize



Professor Dr. Abdus Salam was born in 1926 in Jhang. He started his career as a lecturer at Govt. College, Lahore and then went to UK for higher studies. He obtained a PhD in theoretical physics at Cambridge. In 1957 he joined Imperial College, London as Professor of Theoretical Physics. His notable achievements include the Grand Unified Theory, work on supersymmetry and, most importantly, Electroweak Unification Theory, for which he was awarded the Nobel Prize in 1979. He used his share of the Nobel Prize entirely for the benefit of physicists from developing countries. In 1964, Prof. Salam founded the International Centre for Theoretical Physics (ICTP), Trieste, Italy and served as its director until 1993. Furthermore, he spent the whole money he received from the Atoms for Peace Award on setting up a fund for young Pakistani physicists to visit the ICTP. In 1997, the scientists at ICTP commemorated him and renamed ICTP as the "Abdus Salam International Centre for Theoretical Physics".

As scientific advisor to MoST, he played an influential role in the development of the country's science infrastructure. Prof. Salam proposed the idea of establishing an annual college to promote scientific activities in the country that led to the establishment of the International Nathiagali Summer College on Physics and Contemporary Needs (INSC) in 1976. He was the founding director of the Space and Upper Atmosphere Research Commission (SUPARCO), and also established Theoretical Physics Group (TPG) in the Pakistan Atomic Energy Commission (PAEC) which formed the ground breaking work that led the country to become a Nuclear Power. (see Salam's interview on his role in PAEC <https://youtu.be/fBLfxsKmiXE>).



Hike cum Family Picnic of PNS Members

Lush green Margalla Hills provide a breathtaking backdrop to scenic Islamabad city. They beckoned nature loving PNS members at the onset of Spring and many joined for the hike with families on Sunday the 28th February 2021.

After light showers two days ago, the foliage along trail 5 was glistening in the bright sunshine and merrily swinging in cool breeze. The party spent about 90 minutes in walking to and

fro, along the pristine track with gentle climbs, up to the first spring. After returning to the starting point, light refreshments were served and the participants helped themselves with the tea prepared on-the-spot, while observing Corona SOPs. The icing on the cake was 'gup shup' in open air. This event was in line with the policy of PNS to not only organize academic events, but also provide opportunities of social interactions among the members and their families. In the past the society has been organizing visits to places of tourist attractions, picnics and at least one gala dinner every year.



A historic photo



Visit of the President of Pakistan, Field Marshal Muhammad Ayub Khan to Atomic Energy Centre, Lahore (AECL) - 1961. He is accompanied to his left by Chairman Pakistan Atomic Energy Commission (PAEC), Dr. I. H. Usmani. Immediately behind the two are Governor of Punjab, Mr Amir Muhammad Khan (in turban), and Minister of Industries, Mr. Zulfikar Ali Bhutto (later to become the Prime Minister of Pakistan). The AECL was the hub of planning activities for the future programmes of PAEC.

Nuclear News - PNS

An MoU signed between PNS and SASSI

After mutual consultations and due deliberations, SASSI University and PNS finally agreed to consolidate their bilateral cooperation through an MoU, which was signed between the two parties on 15th March 2021.

The signing ceremony was held in the committee room of PAEC Rest house in Islamabad. Speaking on the occasion, the PNS President, Dr. Imtihan Elahi Qureshi, reiterated the resolve of PNS Council to enter into partnerships with various NGOs, think-tanks and University departments engaged in strategic studies related to nuclear issues. He pointed out that the strength of the Society lies in the huge amount of nuclear technology experience of its members, many of whom constituted the vanguard of Pakistan's nuclear journey. The knowledge and experience of these elite scientists and engineers has been under-represented in discussions on strategic matters and policy making. The strengths of institutions like SASSI University in terms of education, research, communication experience and media resources offer enormous opportunities of synergy with technical know-how of PNS membership. The representative of the SASSI University, Brig (R) M. Mehboob Qadir, Director Research, emphasized the need to counter anti-Pakistan narratives generated under the guise of 'academic' briefs by fake or genuine international think-tanks. This can best be done through well researched reports prepared jointly by experts of social sciences and natural sciences. He informed the participants about the wide spectrum of strategic themes being pursued by SASSI scholars. He agreed with Dr. Qureshi that the MoU between the two academic bodies will benefit both and serve Pakistan's interests better.

The two sides have agreed to undertake the following joint activities:

- a. To organize joint webinars on topics of common interest, mainly peaceful applications of nuclear technology with due consideration of national and international safety and security framework;
- b. To undertake research and publish policy papers on implications of adopting or avoiding the use of nuclear energy, radiation sources in medical diagnostics and treatments, GMOs, etc.;
- c. To prepare content for on-line educational material pertaining to nuclear and allied disciplines for general public, students and professionals;
- d. To jointly organize short courses aimed at building communication capacities of pure science researchers;
- e. To organize briefing sessions for bureaucrats, diplomats, politicians, and journalists for comprehensive elaborations on topics of national interest having complex scientific underpinnings.

Nuclear News - Pakistan

Pakistan's K-2 nuclear power plant connected to grid



ISLAMABAD: The Pakistan Atomic Energy Commission (PAEC) on Thursday announced that it had connected its 1,100MW Karachi Nuclear Power Plant Unit-2 (K-2) to the national grid.

In a statement, the PAEC termed it a 'Pakistan Day' (celebrated on 23rd March) gift to the nation. It said the nuclear power plant (NPP) had achieved criticality at the end of February and was undergoing certain safety tests and procedures before it could finally be connected to the national grid. The loading of nuclear fuel onto the plant was started on December 1, 2020 after getting clearance from the Pakistan Nuclear Regulatory Authority.

The PAEC pointed out that K-2 is the first nuclear power plant in Pakistan with a generation capacity of 1,100MW and its addition to the national grid will "surely help improve the economy of the country".

K-2 is one of the two similar under-construction nuclear power plants located near Karachi and will be inaugurated for commercial operation by the end of May this year. The other one, K-3, is also in completion phase and is expected to be operational by the end of this year.

The PAEC is now running six NPPs in the country – two located in Karachi and four at Chashma in Mianwali district. Earlier, the collective generation capacity of all PAEC-operated nuclear power plants was around 1,400MW. The coming online of the Karachi Nuclear Power Plant Unit-2 will nearly double the generation capacity of nuclear power plants in the country, substantially improving the overall share of nuclear power in the energy mix.

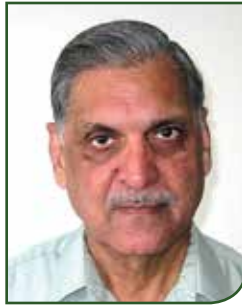
Pakistan Atomic Energy Commission Chairman Muhammad Naem congratulated Member Power Saeedur Rehman and his team on this great achievement.

Published in Dawn, March 19th, 2021

Some personal reflections on the early stages of establishing Pakistan Nuclear Society

by
Dr. Shamim Ahmad Chaudhri

It took over 30 years after the establishment of the Pakistan Atomic Energy Commission (PAEC) to the formation of Pakistan Nuclear Society (PNS) in 1990! Several factors might have contributed to this situation.



In earlier years, there was a very limited pool of scientists and engineers to even think about the need for such a forum.

In 1960s, the PAEC went through an active phase of expanding its manpower through fresh recruitments and training at foreign universities and nuclear facilities.

The 1970s witnessed an expansion in infrastructure, and new Centres and Institutes were established at various cities. It also brought a change in leadership at the top at a time when new political and security considerations were thrust to the forefront after the Indian test of a nuclear device at Pokhran.

One significant side effect of these changes and developments was the prevalence of a very cautious and conservative approach in the PAEC towards allowing group activities of any sort. The already existing Association of Scientists and Engineers at PINSTECH was left to fade out without much notice. In the following many years there was not much discussion, interest or intent, among the PAEC scientists and engineers to consider establishing a professional body.

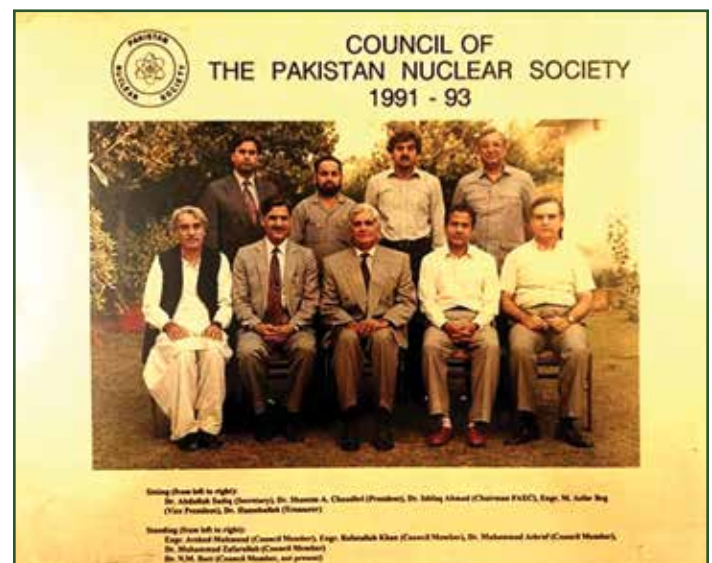
During my posting at the Embassy of Pakistan at Vienna from 1983-1987, I noticed the formal representation of some national nuclear societies in the Annual General Conferences and other technical meetings of the International Atomic Energy Agency. Although these Societies had only an observer status and were not part of any decision-making process, the representatives had no doubt an opportunity of peddling soft diplomacy for promoting their interests. I was encouraged by the PAEC Chairman, Mr. Munir Ahmad Khan, to interact with some of them, particularly Mr. Octave J. Du Temple, the Executive Director of the American Nuclear Society for a very long time. I was impressed by the wide membership of the Society both in the academic and professional circles while maintaining an independence from the commercial interests of the nuclear industry.

After returning to Pakistan, I gained an impression over a

period that the top PAEC management would not be averse to the idea of having such a body in Pakistan. It took a couple of years before a group of colleagues at PINSTECH started discussions on the drafting of a Constitution for a Nuclear Society and got Pakistan Nuclear Society duly registered in 1990 by fulfilling the requirements. (It was a sheer coincidence that an exercise undertaken by a group of Physicists at the Quaid-e-Azam University resulted in the registration of the Pakistan Physical Society in the same year.) A little later, we got PNS accepted as a member of the International Nuclear Societies Council, which itself was founded as a Non-governmental Organization in November 1990.

On completion of the process leading to the registration of the PNS, a campaign was initiated to offer membership to those who met the criteria set out in the Constitution of the Society. It was understood that an offer would be made to the top PAEC management for membership of the Society. There was a general support for the idea that Chairman of the PAEC would be the Patron of the Society, and that all positions on the Council would be filled through elections for a two-year term.

The elections for the term 1991-1993 were held around the last quarter of 1991 and I had the honour of being elected as the first President of the Pakistan Nuclear Society. I was elected again as President for the next term of 1993-1995 but could not complete the full tenure as I was offered a job at the IAEA and left for Vienna end July 1994. On returning to Pakistan after nearly a decade, I settled at Lahore. I have been generally aware of the good work done over the years by dedicated and competent colleagues to further the objectives of the PNS and hope for the continuation of this process through the newly elected Council with even greater vigour and wisdom. I wish the new Council a glowing success in this regard.



Message from the President

Dr. Imtihan Elahi Qureshi, T.I

PNS is a representative body of Pakistani professionals associated with nuclear and allied disciplines. The new Council of PNS that took office in Dec. 2020 started its work with fresh determination, taking a number of new initiatives in a short span of time. That included; better internet connectivity, new website with dynamic and interactive features, and more office space.

A number of measures were also taken to streamline the PNS office work through subcommittees comprising of Council members as well as volunteers from amongst other lifetime members. The expansion of infrastructure and purchases of additional office equipment are still going on.

One of the compulsions of disseminating information in a pandemic situation is to make a shift from traditional seminars to virtual assemblies dubbed as 'webinars'. This transition is being witnessed throughout the world, taking its hold in meetings of the United Nations bodies, multilateral meetings of States and, of course, in IAEA programmes. The new administration of PNS was quick to join the new wave by acquiring a Zoom license for its webinars. A highly encouraging response and wide recognition was achieved in the very first such event, entitled "Artificial Intelligence and Medical Imaging".



The traditional approach of sharing information through newsletters has also taken a new bend by way of the 'online' publications. Immediate attention has been paid to restore the publication of PNS Newsletter which had been stalled for some years. The present issue is printed in limited numbers but is accessible to national and international readers in the form of soft copy that is available at our website. The pages of this publication reflect the proactive approach of the Society to engage other national academic forums and think-tanks to better achieve our objectives. Very soon we will start interacting with our counterparts in other friendly countries.

As PNS President it is my honour to convey the following messages.

To PNS members: You have shown trust in the new team of PNS office bearers through your votes, which is highly appreciated. Please come forward and fully participate in PNS activities to ensure that PNS objectives are effectively achieved. We hope that your comments and suggestions conveyed through feed-back proforma on the website (www.pns.org.pk) or through email (council@pns.org.pk) will help us perform our functions more efficiently. I especially appeal to my seniors who played a role in establishing the Society 30 years ago and participated in its development, to kindly guide us in our endeavours. Many of these venerable colleagues are 'Fellows' of the Society. Their close interactivity with the incumbent Council is highly desirable and most welcome.

To non-member nuclear professionals: Due to the special nature of your work, it is very important to have a group identity and avenues of networking through academic and social interactions outside the realm of official work. You are welcome to join us by filling out the membership form available on PNS website. The advantages of joining the Society are also elaborated on the website.

To senior officials of strategic organizations: As per international practice, the independent academic bodies of highly qualified people attached to a certain type of profession are patronized by their peers in positions of authority. The PNS has a dual role to play; namely, to serve the nation through sharing of knowledge and information in a specialized field of critical importance to national economy, and to further the interests of the practitioners of this field. We look forward to your support for the success of our mission.

And finally,

To my fellow Council members: The fact that you offered your services to run the affairs of the Society, which requires onerous duties to be performed on honorary basis, already is a testimony of your selfless dedication to the national interest and community welfare. I highly appreciate the close-knit cooperative working of the Council and the results achieved so far. We have a long way to go to fully capitalize on the human resources available to us for ensuring national interests. With your strong determination and hard work it will be possible for the Society to achieve new heights. I thank you for your commitment and sense of responsibility in performing your designated functions.



Significant News

Pakistan Nuclear Regulatory Authority (PNRA) has awarded licenses to two design organizations of PAEC:

- To HMC-3, for Design of Nuclear Safety Class-3 equipment
- To WASO, for Design of Nuclear Safety Related Structures (for installation of PARR-3 at PINSTECH)

The ceremony was held at PNRA Head Quarters on January 20, 2021. Chairman PNRA awarded the licenses which was received by Chairman PAEC. The event was attended by Members, DGs, Directors and other senior officers from the two organizations. PNRA has issued Fuel Load Permit to K-2 after fulfillment of all regulatory requirements. Fuel loading at K-2 has also been completed and commissioning tests are being performed.

Benefits to become PNS Lifetime Member

1. Growing professional circle by strengthening connections with peers in relevant fields
2. Free access to nuclear related webinars, online courses and discussions to share views and enhance knowledge of current issues, challenges and opportunities in nuclear science and technology
3. Group visits at various S&T organizations/ universities
4. Free e-copy of quarterly PNS Newsletter
5. Login facility at PNS website with a secure password
6. Lifetime Membership Card with a photo
7. 50% reduction in PNS conferences fee
8. 20-30% fee reduction in conferences arranged by other organizations
9. 25% discount in fee on courses offered by Pakistan Institute of Management (PIM) in Islamabad, Lahore, Karachi
10. 50% reduction in Annual Gala Dinner at Islamabad Club
11. 15-20% discount at various outlets, branded shops and restaurants
12. Social programmes like family picnic/hikes, trip to Northern areas, etc.
13. Registration/ Lifetime Membership Fee is only Rs. 2,100/-.

Membership Form is available at www.pns.org.pk

(Form and Fee can be deposited online in PNS Bank Account at NBP, Margalla Br. Islamabad, IBAN: PK18NBPA1725004018982691)

Conference announcements - 2021

1. 28th IAEA Fusion Energy Conference, Nice, France, 10 – 15 May.
2. ICTP-IAEA Nuclear Knowledge Management School, Trieste, Italy, 24 – 28 May.
3. World Congress on Medical Physics and Biomedical Engineering, Singapore, 30 May – 4 June.
4. 10th International Conference on High Temperature Reactor Technology, Yogyakarta, Indonesia, 2 – 4 June.
5. International Conference on Operational Safety of Nuclear Power Plants, Beijing, China, 30 Aug – 3 Sep.
6. International Conference on the Development of Preparedness for National and International Emergency Response (EPR2021), Vienna, Austria, 11 – 15 Oct.
7. International Conference on Radioactive Waste Management: Solutions for a Sustainable Future, IAEA HQ, Vienna, Austria, 1 – 5 Nov.

PNS Council 2020-22



Dr. Imtihan Elahi Qureshi
President



Dr. M. Tahir Khaleeq
Vice President



Dr. Muhammad Mohsin
General Secretary



Ghulam Sarwar
Finance Secretary



Waqar A. Butt
Executive Member



Dr. Shazia Fatima
Executive Member



Shazia Fayyaz
Executive Member



Dr. Niaz Ahmad
Executive Member



Syed Zahid Hussain
Executive Member