



भारतीय राष्ट्रीय अभियांत्रिकी अकादमी Indian National Academy of Engineering

604-609, छठी मंजिल, टॉवर ए, स्पेज़ आई-टैक पार्क, सैक्टर 49, सोहना रोड, गुड़गाँव-122018 (भारत)

Unit No. 604-609, 6th Floor, Tower A, SPAZE I-Tech Park, Sector 49, Sohna Road, Gurgaon-122018 (INDIA)

दूरभाष/Ph: (91)-0124-4239480, फ़ैक्स/Fax: (91)-0124-4239481, ई-मेल/Email: inae@inae.in, वेबसाइट/Website: www.inae.in

डॉ. सनक मिश्रा/Dr. Sanak Mishra

FNAE, FNASc., FIIM, FIOD, FCSI, FIE, FAIMA,

BE & Distinguished Alumnus Award, Indian Institute of Science, Bangalore

MS & PhD and Distinguished Alumnus Award, University of Illinois at

Urbana-Champaign (USA)

Alexander von Humboldt Fellow (Germany)

अध्यक्ष/President

Formerly: Managing Director, Rourkela Steel Plant;

Director, Steel Authority of India Ltd. (SAIL);

Vice President of ArcelorMittal, CEO India Projects;

Secretary General, Indian Steel Association

President, Indian Institute of Metals

AICTE - INAE Distinguished Visiting Professor

Mob.: +91-9810956664, E-mail: mishra.sanak@gmail.com

Ref: INAE/205/FD

April 20, 2020

Message from President, INAE Regarding Foundation Day of INAE

Dear Colleague,

At the outset, I express my sincere wishes for your good health and safety in these challenging times of the worldwide COVID -19 Pandemic. You may kindly recall that INAE was founded on April 20, 1987 – the date on which the Academy was registered under the Societies Registration Act 1860 and subsequently the Inaugural Function of the Academy was held on April 11, 1988, wherein the erstwhile Prime Minister Mr. Rajiv Gandhi was the Chief Guest. Last year however, the Foundation Day celebrations were organized on April 11 by the INAE Local Chapters as well as INAE Headquarters by conduct of meaningful activities and meetings. From this year onwards, in consultation with former Presidents of INAE, it has been decided to commemorate the Foundation Day of the Academy by organizing the celebrations on April 20, each year, which is the correct date of the INAE Foundation Day. It would indeed have been delightful had it been feasible to organize the INAE Foundation Day celebrations so meticulously planned by several INAE Local Chapters this year, however, in view of the current emergency health situation and national lockdown declared by the Government of India for the containment of the COVID -19 Pandemic, these functions subsequently, perforce had to be cancelled.

In view of above, I felt it pertinent to forward this message and reach out to the INAE Fellows and Young Associates who have over the years have contributed to the growth of the Academy and also helped enhance INAE's visibility in the national and international engineering fora and policy domain. My sincere thanks are expressed to all former Presidents and office bearers of INAE since its inception and the esteemed Fellowship and enthusiastic Young Associates who have all shown utmost sincerity and dedication in devoting their precious time towards contributing to the activities and programmes of INAE, that have added value to its image and maturity as a recognized body of eminent engineers.

As you may be aware, I have confirmed the commitment of INAE to the efforts of Government of India in the fight against the COVID-19 Pandemic vide my letter addressed to Dr Pramod Kumar Mishra, Principal Secretary to the Prime Minister wherein I have conveyed utmost admiration in the exemplary manner in which measures have been taken by the Government of India under the inspired leadership of the Hon'ble Prime Minister, towards the containment and eradication of the COVID-19 pandemic. In the letter, I lauded the Government initiatives encompassing provision of medical services and facilities; promotion of indigenous medical testing facilities; development of cost-effective medical equipment; excellent governance; economic relief measures; repatriating Indian citizens from affected

countries; appropriate education of citizens; timely lock-down of the country and ensuring essential supplies and facilities across the country. It was also highlighted that INAE commits itself to extend all and any support required by the Government for the furtherance of its initiatives and measures for the containment and eradication of the COVID-19 pandemic. Subsequently, the INAE Fellowship and INAE Young Associates were requested for relevant expertise in the concerned engineering fields to offer their expertise to mitigate any dimension of the COVID 19 Pandemic from engineering perspective. The inputs received were communicated vide my letter to Prof Ashutosh Sharma, Secretary, DST with the objective of making meaningful contributions to the various measures and initiatives of the Government by providing the pertinent technical inputs to synergize the efforts, with innovative engineering interventions and providing consultancy in concerned fields which has been appreciated.

You all have witnessed that since the raising of the Academy, INAE has undergone a change in terms of the increase in its visibility in the national engineering domain. In the recent past, INAE is recognized as an advisory body to the Government Departments/Agencies for providing inputs for engineering interventions to help solve problems on topics of current engineering interest and in framing of national policies on identified areas. To facilitate the interface with the Government, INAE has in place joint Consultative Committees with Department of Science and Technology (DST) and Office of Principal Scientific Advisor (PSA) to the Government of India, which meet periodically to deliberate and identify topics of interest to the Government, to align future activities of the Academy accordingly.

INAE has embarked on a journey of progress over the decades with the institution of novel events and activities encompassing all aspects and fields of engineering and technology and also promoting of engineering education which is vital for the growth of the engineering profession. It is my privilege to recapitulate some landmark flagship events and activities that have gained national recognition. INAE launched an annual mega event of engineers as “Engineers Conclave” in 2013 which is organized jointly with major engineering organizations on rotation basis, with the objective of providing a platform for engineers from allied fields to meet, deliberate and recommend right engineering solutions to some of the pertinent issues of national importance. The seventh Engineers Conclave 2019 was organized jointly with Bharat Electronics Limited (BEL) in September 2019 at BEL Academy of Excellence (Nalanda), Bangalore and the two themes were “Defence Technology & Innovation” and “Transformation of Rural India Using Digital Technologies”. The Inaugural Session of the Engineers Conclave 2019 was graced by the Chief Guest, Hon’ble Raksha Mantri Shri Rajnath Singh who delivered a thought provoking address. Actionable recommendations based on the deliberations in terms of engineering interventions are being actively progressed with the concerned Government Departments/Agencies.

During a meeting of DST – INAE Consultative Committee held in November 2019 it was suggested that INAE should participate in the 107th Indian Science Congress Expo from January 3-7, 2020 being held at University of Agricultural Sciences, Bangalore, to increase the outreach of the Academy, within the scientific and engineering fraternity. Accordingly, INAE set up a stall on the activities of the Academy, which was well received by the visitors. As tasked by DST, a project entitled, “Pilot Project on Safe Laboratory Practices and Laboratory Waste Disposal” was undertaken with the objective of creating an implementable plan of action to enhance the awareness of health and safety issues in chemical laboratories as well as establish best practices for the disposal of chemical and hazardous wastes in the laboratories of universities, colleges and research institutions in India. The report has since been prepared and forwarded to DST. At the behest of DST, INAE had also conducted two Round Table meetings on “Clean Coal Technologies in India: Current Status, Demands and Aspirations – Pathways to Achievements” in 2016 at New Delhi. The objective of the round tables was to examine the various aspects of clean coal technologies and identify the technology gaps with respect to our national context and suggest thrust areas for future R&D efforts.

Another noteworthy event undertaken last year, at the behest of the Government Department/Agencies was the successful conduct of the one-day International Seminar on “Civil Aviation – Regional Air Connectivity” organized jointly by INAE with the Ministry of Defence Production and the Ministry of Civil Aviation as part of the Aero India Show on 21st February 2019 at Bangalore. The seminar was well attended with representation from Government and globally recognized engineering luminaries in the Aerospace Sector. It is a matter of pride for the Academy that our initiative to provide inputs for the development of indigenous Regional Transport Aircraft (RTA) has since been approved by the PMO and the proposal for constituting a Special Purpose Vehicle (SPV) as recommended by INAE, is being progressed with Ministry of Civil Aviation. In this regard, INAE Delegation met with Hon’ble Minister of Civil Aviation, Shri Hardeep Singh Puri on January 14, 2020 at New Delhi to present the recommendations on the “Development of Regional Transport Aircraft in the country”, which had emanated from the deliberations of various high-level meetings including the Engineers Conclave 2017, held at Bangalore. This is by far one of the most pathbreaking achievements of INAE that has been recognized at the national level.

I also would like to highlight some other notable events and initiatives that have seen active involvement of the engineering community. The National Frontiers of Engineering Symposium- a flagship event launched primarily to provide a platform for outstanding young engineers from industry, academic institutions and R&D organizations to come together and deliberate upon emerging and cutting-edge research leading to cross-disciplinary translational research and innovation, has gained significance and has since become a popular event for the upcoming engineers. The Thirteenth National Frontiers of Engineering Symposium was organized jointly with IIT Bhubaneswar in May – June 2019 at IIT Bhubaneswar and the themes were Augmented Reality and Virtual Reality; Smart Grid; Advances in Materials and Manufacturing Technology and Next Generation Transportation Systems.

INAE had launched a quarterly journal “INAE Letters” published by M/s Springer in the year 2016. The objective of the journal was to provide a medium for rapid publication of new research results and invited short review articles across different domains of engineering science and technology. In the year 2020, the title of the Journal has been changed to “Transactions of Indian National Academy of Engineering – International Journal of Engineering and Technology” and has become a full-fledged journal to include full Research Papers and Review Articles besides short communications. I request your inputs in popularizing the journal and soliciting submission of high quality research papers.

The Academy, realizing the importance of promoting young engineering students and Graduates and facilitating their engagement in the engineering activities at national level had instituted a Youth Forum in the year 2017, which was launched during the first Youth Conclave held at Birla Institute of Scientific Research, Jaipur in August 2017. The third INAE Youth Conclave was organized at IIT Delhi in August 2019. The engineering models and idea presentations were based on five topics of national importance namely (a) Health is Wealth (b) Digital Revolution (c) Environment Protection (d) Lab to Market and (e) Waste to Wealth.

The Abdul Kalam Technology Innovation National Fellowship launched by INAE jointly with Science and Engineering Research Board (SERB), DST in the year 2017, with the objective of encouraging and supporting translational research in engineering in public funded institutions in the country, has since gained momentum with the receipt of high quality nominations from Academic and R&D institutions across the country. Seven eminent nominees were conferred with the subject Fellowship during the last year.

INAE has recently instituted the award titled as “INAE Woman Engineer of the Year Award”. The purpose of the award is to recognize and honour our women engineers every year ,who have made outstanding contributions to engineering/technology in India and who will serve as role models.

Digitalization of the functioning of INAE is of high priority and an INAE Digital Platform has been instituted to facilitate the same. An INAE Digital Centre has also been created to house the Digital Platform which is located in the newly procured office space in the 9th Floor of the same building viz SPAZE, IT Park, Tower A, Gurgaon wherein the current INAE office is housed on the 6th floor. The INAE Digital Centre was inaugurated by Prof Ashutosh Sharma, FNAE, Secretary, DST on February 15, 2019.

A novel initiative of INAE at national level is the creation of the Frugal Innovation Nurturing programme, set up with the aim of nurturing prospective frugal grassroot technologies which have reached prototype stage and to commercialize them for the benefit of the citizens, as well as to promote the young innovators.

The eight INAE Local Chapters at Bangalore, Kolkata, Delhi, Pune, Mumbai, Kharagpur, Kanpur and Hyderabad have been energized and a number of interesting technical events have been conducted by them which have had good attendance and representation from experts in allied fields. Recently the Pune Local Chapter organized a Round Table Interaction of domain experts on "Role of Hydrogen in India's Energy Strategy" in February 2020 at Pune. The invited experts shared insights on the current and future global situation about use of Hydrogen as an energy source; discussed the overall situation in India with respect to technologies, capabilities and affordability for generation, storage, transportation and usage of hydrogen and concluded on the approach to be followed by INAE in forwarding recommendations to the Government.

In order to give a fillip to engineering education in the country, INAE is implementing three joint schemes with All India Council for Technical Education (AICTE) viz. AICTE-INAE Distinguished Visiting Professorship Scheme wherein Industry experts are encouraged to give series of lectures at an educational institution for a specific time period; AICTE- INAE Teachers Research Fellowship Scheme wherein engineering teachers from AICTE approved engineering institutions are sponsored to pursue research in CSIR/ DRDO/ DoS/ DAE laboratories leading to the award of a Ph.D degree in the chosen field of study and AICTE-INAE Travel Grant Scheme which provides financial support for engineering students to present papers abroad and provide a platform for showcasing work at international level.

As the only engineering Academy of the country, INAE represents India at the International Council of Academies of Engineering and Technological Sciences (CAETS); which is a premier non-governmental international organization comprising Member Academies from 30 countries across the world, with the objective of contributing to the advancement of science and technology and promoting sustainable economic growth of all nations. The CAETS 2015 Convocation on "*Pathways to Sustainability: Energy, Mobility and Healthcare Engineering*" was held for the first time in India in October 2015 at New Delhi which was inaugurated by Dr. Harsh Vardhan, Hon'ble Minister of Science & Technology and Earth Sciences. The Convocation was a grand success and attended by over 350 participants from 24 countries. INAE organizes joint events with some CAETS Member Academies on topics of mutual interest. The 3rd INAE-NAEK, Korea Workshop on "High Temperature Materials and System Engineering for Aerospace, Power Generation and Defense Industry" held in July 2019 at Hyderabad.

After a presentation of a summary of the important activities of the Academy, I wish to inform that INAE had received a letter from DST in August 2019 to the effect that INAE has been advised to recast its Memorandum of Association (MoA), as per a model MoA recommended by DST in order to make the affairs of INAE regular and in conformity with the provisions of Government/CAG with respect to rules/regulations/ guidelines which are applicable to Autonomous Bodies, which have been receiving grants from DST. This important issue was discussed during the Special General Meeting of

Fellows held in December 2019 at Jaipur. I am pleased to inform that the draft documents have since been approved by the Governing Council for forwarding of the same to DST for consideration.

At suggested by DST the INAE Vision 2020-25 Document has also been prepared which gives the Technological Roadmap of thrust areas for the next 5 years. Your support is sought in planning activities under this Technological Roadmap. All above activities have been realized with the active and noteworthy contributions of the INAE Fellows and the same are acknowledged not only by the Academy, but these efforts have been acclaimed at the highest national levels. I seek your continued co-operation and commitment in the future activities of INAE, some of which have been deferred due to the current situation in the face of the COVID -19 Pandemic. It is our genuine wish that the country and the world recover from the present health threats and that life resumes to normalcy and that the Academy may plan the conduct of the deferred events at the earliest possible. My best wishes to you and your families for good health and hope that you may you be safe and secure in this crisis situation, which I pray gets over at an early date.

Yours sincerely,



(Dr Sanak Mishra)

.