

## PROGRAMME

### ONLINE INAE ANNUAL CONVENTION 2021

16<sup>th</sup> -18<sup>th</sup> December 2021 (Thu-Sat)

**DECEMBER 16, 2021**

#### **FORENOON SESSION**

Link for Registration: <https://inaeevent.in/inae-events1/>

**1030 – 1200 hrs.**

- **Inaugural Function**

- Lighting of Lamp by dignitaries
- Presidential Address by **Prof. Indranil Manna**, President, INAE
- Release of Book titled “*Making of a Satellite Centre: The Genesis of ISRO's UR Rao Satellite Centre*” by **Dr Prem Shanker Goel**, former President, INAE and former Secretary, Ministry of Earth Sciences and Chairman, Earth Commission and Director, ISRO Satellite Centre, Bangalore.
- Inaugural Lecture by the **Chief Guest, Mr. NR Narayana Murthy**, Formerly Chairman Emeritus, Infosys Ltd., on “*Creating a culture to solve grand engineering challenges of India*”
- Vote of Thanks by **Prof. Purnendu Ghosh**, Vice-President, INAE

**1200 -1315 hrs.**

- **Grand Award Function**

- Announcement and Award Presentation of Woman Engineer of the year Award 2021 (Three awards)
- Announcement and Award Presentation of Outstanding Teachers Award (Two awards)
- Announcement and Award Presentation of Professor Jai Krishna Memorial & Professor SN Mitra Memorial Awardees (One award each)
- Announcement and Award Presentation of Life Time Achievement Awardees (Two awards)

**1315 - 1415 hrs.**

- **BREAK** (Journey of INAE in photographs)

#### **AFTERNOON SESSION**

**1415 – 1600 hrs.**

- **Grand Award Function (Contd)**

- Announcement and Award Presentation of IP Awards at Doctoral and Master's levels (10 awards each)
- Announcement and Award Presentation of IP Awards at Bachelor level (10 awards)
- Announcement and Award Presentation of Youth Conclave winners (37 awardees) and Innovation in Manufacturing Processes (6 teams)
- Announcement and Presentation of Young Engineer awardees (15 awards)
- Announcement and Presentation of Young Innovator & Entrepreneur Award (4 awards).
- Vote of Thanks

**1600 - 1630 hrs.**

- **BREAK**

## **EVENING SESSION**

**1630 – 2000 hrs.**

### **Award Lectures**

- **Welcome Introductory Remarks**
- **Award Lectures by winners of:**
  - Woman Engineer of the Year Award 2021**
    - *Prof Sharada Srinivasan* of National Institute of Advanced Studies (NIAS), Bangalore - **Academia Category**.
    - *Smt Madhumita Chakravarti*, Centre for Millimeterwave Semiconductor Devices and Systems (CMSDS), Kolkata - **Research & Development Category**.
    - *Ms Vartika Shukla*, Engineers India Limited, New Delhi - **Industry Category**.
  - Outstanding Teachers Award 2021**
    - *Prof Suman Chakraborty*, Department of Mechanical Engineering, Indian Institute of Technology Kharagpur.
    - *Prof Sukumar Mishra*, Department of Electrical Engineering, Indian Institute of Technology Delhi.
  - Prof. Jai Krishna Memorial Award 2021**
    - *Prof GD Yadav*, Emeritus Professor of Eminence and JC Bose National Fellow, Former Vice Chancellor & R.T. Mody Distinguished Professor, and Tata Chemicals Darbari Seth Distinguished Professor of Leadership and Innovation, Institute of Chemical Technology, Mumbai.
  - Prof. SN Mitra Memorial Awards 2021**
    - *Prof Surendra Prasad*, Department of Electrical Engineering, Indian Institute of Technology Delhi.
  - Life Time Contribution Award in Engineering 2021**
    - *Mr Senapathy “Kris” Gopalakrishnan*, Co-founder Infosys & Chairman Axilor Ventures.
    - *Prof MS Ananth*, Emeritus Research Fellow, Department of Chemical Engineering, IIT Madras; and Former Director, Indian Institute of Technology Madras.

## **DECEMBER 17, 2021**

**1030 – 1300 hrs.**

- **AGM (Part B) – Session 1 {Rescheduled to 18<sup>th</sup> December 2021 at 07:30 AM (IST)}**

### **Induction Ceremony of Fellows & Young Associates**

- Opening Remarks & Address by President INAE
- Induction Ceremony of Fellows elected under Rule 37(g)
- Induction Ceremony of Fellows and Foreign Fellows elected Engineering Sections-wise.
- Induction Ceremony of INAE Young Engineer Award winners of 2021 as “INAE Young Associates”

**1300- 1330 hrs.**

- **BREAK**

**1330 - 1430 hrs.**

- **AGM (Part B) – Session 2**

- Confirmation of Minutes, Agenda & Brainstorming

***(To be attended by INAE Fellows and INAE Young Associates only)***

- **SGM of Fellows**

- Confirmation of the Minutes of the meeting of the SGM of Fellows held on 1<sup>st</sup> November 2021.

***(To be attended by INAE Fellows only)***

**1430 hrs.**

- **Vote of Thanks**

**DECEMBER 18, 2021**

**FORENOON SESSION**

**0730 hrs. – 0945 hrs. - AGM (Part B) – Session 1**

**Induction Ceremony of Fellows & Young Associates**

- Opening Remarks & Address by President INAE
- Induction Ceremony of Fellows elected under Rule 37(g)
- Induction Ceremony of Fellows and Foreign Fellows elected Engineering Sections-wise.
- Induction Ceremony of INAE Young Engineer Award winners of 2021 as “INAE Young Associates”

**0945- 1000 hrs. - BREAK**

**1000 hrs. – 1230 hrs. - Pre-recorded Technical Presentations by newly elected Fellows & Foreign Fellows (Four Parallel Sessions)**

<b><u>Parallel Sessions (Engg Sections Group-1)</u></b>				<b><u>Parallel Sessions (Engg Sections Group-2)</u></b>			
Engineering Section I (Civil Engineering), Engineering Section III (Mechanical Engineering), Engineering Section IV (Chemical Engineering), Engineering Section VII (Aerospace Engineering) and Engineering Section VIII (Mining, Metallurgical and Materials Engineering)				Engineering Section II (Computer Engineering and Information Technology), Engineering Section V (Electrical Engineering), Engineering Section VI (Electronics & Communication Engineering), Engineering Section IX (Energy Engineering) and Engineering Section X (Interdisciplinary Engineering & Special Engineering Fields and Leadership in Academia, R&D and Industry)			
<b>Sub-Session-1</b> <i>Engg Sections-I, III and IV</i>		<b>Sub-Session-2</b> <i>Engg Sections-VII and VIII</i>		<b>Sub-Session-3</b> <i>(Engg Sections-II, V and VI)</i>		<b>Sub-Session-4</b> <i>(Engg Sections-IX and X)</i>	
<b>Speaker</b>		<b>Title of Lecture</b>		<b>Speaker</b>		<b>Title of Lecture</b>	
Prof. Mike (Michael) Jon Schlaich	-	Lightweight Structures		Prof. Mira Mitra	-	Structural Health Monitoring of Composite Using Guided Wave	
Prof. Vasant A Matsagar	-	Multi-Hazard Protective Structures		Dr. Ramesh Sundaram	-	Composite Technologies for Aircraft: Present and Future	
Prof. KVL Subramaniam		Improvements in Concrete Processing leading to Digital Fabrication		Dr. Sunder Ramasubbu	-	The Excitement of Science, Technology and Atman nirbhar Bharat	
				Prof. Andrew Zisserman	-	Audio-Visual AI	
				Mr Sundar Pichai	-	Life Journey	
				Prof. Susmita Sur-Kolay	-	Physical Design Automation for Electronic and Quantum Circuits	
				Dr. B. K. Nashine	-	Development of electro-magnetic devices and components for sodium cooled fast reactor	
				Mr. A. K. Balasubrahmanian	-	Design, Development and Engineering of Indian Pressurized Heavy Water Reactors	
				Prof. Giridhar Udapi Rao Kulkarni	-	Functional Glass for Smart Windows	

Speaker		Title of Lecture	Speaker		Title of Lecture	Speaker		Title of Lecture	Speaker		Title of Lecture
Mr Vikram Kirloskar	-	Life Journey	Prof. Jurgen Eckert	-	Tailoring Structure and Properties of Metastable Alloys	Prof. Debdeep Mukhopadhyay	-	Hardware Security in the Modern World : From Things to Cloud	Dr. Suparna Mukherji	-	Application of Microbes & Nanomaterials for Promoting Wastewater Treatment and Reuse and Enhancing Water Quality
Prof. Atul Sharma	-	Computational Fluid Dynamics: Research, Technological, and Academic Contributions	Prof. Kantesh Balani	-	Multifunctional Biomaterials for Hip Joint Arthroplasty	Dr. Ramachandran Ramjee	-	Research Highlights	Prof. Rohit Srivastava	-	Affordable Healthcare Technologies
Dr. B.K. Sreedhar	-	Development and Testing of Components for Fast Reactors	Prof. Jyotsna Dutta Majumdar	-	Ultra short Laser Assisted Topographical Modification of Ti-6Al-4V Surface and its Effect on Properties	Dr. Gautam Shroff	-	Artificial Intelligence and Deep Learning in an Uncertain World	Prof. Sandeep Verma	-	Research Highlights
Dr. Sathya Prasad Mangalaramanan	-	My best is yet to come	Prof. M. Kamaraj	-	Thermal sprayed coatings on Hydro turbine Components	Dr. Lipika Dey	-	What's in a message: Business Analytics from Unstructured Data	Dr. Ajit Kumar Mohanty	-	Probing Early Universe using Accelerators
Prof. Arup K. Chakraborty	-	Understanding and Harnessing the Immune System : A Convergence of Engineering, Physics, Biology and Medicine	Dr. S.V. S. Narayana Murty	-	Challenges and recent advances in the processing of aerospace materials	Prof. Ned Mohan	-	Educational Efforts with Consortium of Universities for Sustainable Power (CUSP)			
Prof. V. Shankar	-	Role of fluid and wall elasticity on the onset of turbulence in pipe and channel flows	Dr. Satyam Suraj Sahay	-	Industrial Realization of Analytics, Modelling & Optimization	Dr Ajay Kumar	-	Technology Development for Atmanirbhar Bharat in Defence			

Speaker		Title of Lecture	Speaker		Title of Lecture	Speaker		Title of Lecture	Speaker		Title of Lecture
Prof. Ravindra D Gudi	-	Research Presentation to INAE				Prof. Saikat Chakrabarti	-	Development of analytics for a smart distribution system			
Dr. Amol Arvindrao Kulkarni	-	Design of Novel Flow Reactor and Continuous Manufacturing				Dr. Rahul Tongia	-	The Future Grid-A nebulous, moving target of existential importance			
Ms. Vartika Shukla	-	Changing Global Energy Landscape				Prof David Jeffery Wineland	-	Individual atoms as clocks and bits			
						Prof. Palghat P. Vaidyanathan	-	My signal processing journey			
						Prof. Yogesh Singh Chauhan	-	Characterization and Modeling of Transistors for Circuit Design			
						Prof. Saurabh Lodha	-	Emerging Electronic and Optoelectronic Materials and Devices			
						Mr. Raghavan Muralidharan	-	Engineering Strategic Systems for Atmanirbharata			

**1230- 1330 hrs. - BREAK**

**AFTERNOON SESSION**

1330 - 1600 hrs.

**- Pre-recorded Technical Presentations by award winners of Young Engineer Award and Young Innovator & Entrepreneur Award (Two Parallel Sessions)**

<b>Parallel Session 1 (Engg Sections Group-1)</b>		<b>Parallel Session 2 (Engg Sections Group-2)</b>	
Engineering Section I (Civil Engineering), Engineering Section III (Mechanical Engineering), Engineering Section IV (Chemical Engineering), Engineering Section VII (Aerospace Engineering) and Engineering Section VIII (Mining, Metallurgical and Materials Engineering)		Engineering Section II (Computer Engineering and Information Technology), Engineering Section V (Electrical Engineering), Engineering Section VI (Electronics & Communication Engineering), Engineering Section IX (Energy Engineering) and Engineering Section X (Interdisciplinary Engineering & Special Engineering Fields and Leadership in Academia, R&D and Industry)	
<b>Speakers</b>	<b>Title of Lecture</b>	<b>Speakers</b>	<b>Title of Lecture</b>
<b>Young Engineer Awardees 2021</b>		<b>Young Engineer Awardees 2021</b>	
Dr. Sri Harsha Kota	- Identification and control of air quality at hotspots	Mr. Pankaj Malhotra	- Data-driven Methods for System Health Monitoring and Prognostics
Dr. Puneet Kumar Patra	- Leveraging Small-Scale Dynamics to Solve Continuum-Scale Problems: A bottom Up approach to engineering	Dr. Abir De	- Machine Learning Under Triage
Dr. Neha Khatri	- Indigenous development of ultra-precision engineered value-added optical components	Dr. Abheejeet Mohapatra	- Novel dual conic programming-based optimization of electric networks with intermittent power injections
Dr. Sourav Mondal	- Modelling of the transport phenomena in physical processes	Dr. Manas Kumar Jena	- Synchrophasor Measurement-Based Applications for Enhanced Control Centre Operations and Power System Protection
Sri Harsha Nistala	- Modeling & Optimization of Iron Ore Sinter Plants using Digital Twins	Dr. Manan Suri	- Moving Towards a Memory-centric World
Dr. S Mathavaraj	- Spaceflight - Trajectory, Guidance, Navigation & Control Design	Dr. Niraj Kumar	- High-power Plasma-assisted sub-THz (HP-THz) Source on-a-Plate
Dr. Samadhan Ananda Pawar	- Studying the onset of thermoacoustic instability and its control using the framework of synchronization theory	Dr. Pushkar Varshney	- An Indigenous Technology for Conversion of Cracked C4 Stream to High-Octane Gasoline
Dr. Chandra Sekhar Tiwary	- Engineering materials at atomic scale for energy, environment and healthcare applications		
<b>Young Innovator &amp; Entrepreneur Award 2021</b>		<b>Young Innovator &amp; Entrepreneur Award 2021</b>	
Mr. Nikhil Kurele & Mr. Harshit Rathore	- Building Hardware Products in India	Dr. Chandan Kumar Jha	- Fiber Bragg grating sensors for healthcare applications
Dr. Sebastian C. Peter	- Carbon Recycling in CO2 to Methanol Process: Fundamental Science to Economic Translational Technology	Dr. B Madhan	- Effective and Affordable Collagen Composite Biomaterial: Innovation to Impact

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