

## The Institution of Engineers (India)

A Century of Service to the Nation

## **Thirty Sixth**

**National Convention of Mechanical Engineers** 

&

**National Conference on** 

## **Innovations in Thermal Science and Engineering**

**December 05-06, 2021** 

Organized by

The Institution of Engineers (India)

**Tripura State Centre** 

Under the aegis of

**Mechanical Engineering Division Board, IEI** 

In association / collaboration with



National Institute of Technology Agartala



National Institute of Technology Arunachal Pradesh



Tripura Institute of Technology, Agartala

**MODE: VIRTUAL** 

**Registration Link** 

https://docs.google.com/forms/d/147Q6spqt71W2juI70RXkzYr4djtMej0ca3YWF2akfpQ/edit

E certification link

https://ieindia.org/adminui/webinar.aspx?FPeEChVPIHDy8bv+eVZBqA2KNHTbBg380zUikm/Fzlo=

#### **ABOUT THE INSTITUTION OF ENGINEERS (INDIA)**

The Institution of Engineers (India) or IEI is the largest multidisciplinary professional body that encompasses 15 engineering disciplines and gives engineers a global platform from which to share professional interest. IEI has membership strength of over 0.8 million. Established in 1920, with its headquarters at 8 Gokhale Road, Kolkata - 700020, IEI has served the engineering fraternity for over nine decades. In this period of time it has been inextricably linked with the history of modern-day engineering.

In 1935, IEI was incorporated by Royal Charter and remains the only professional body in India to be accorded this honour. Today, its quest for professional excellence has given it a place of pride in almost every prestigious and relevant organization across the globe. IEI functions among professional engineers, academicians and research workers. It provides a vast array of technical, professional and supporting services to the Government, Industries, Academia and the Engineering fraternity, operating from 125 Centres located across the country. The Institution provides grant-in-aid to its members to conduct research and development on engineering subjects.

IEI conducts Section A & B Examinations in different Engineering disciplines, the successful completion of which is recognized as equivalent to Degree in appropriate field of Engineering For details, please see: www.ieindia.org

#### **ABOUT THE INSTITUTION OF ENGINEERS (INDIA), TRIPURA STATE CENTRE**

The Tripura State Centre of The Institution of Engineers (India) was established getting elevated from the Agartala Local Centre in December, 2008. The Agartala Local Centre was established in 1989 in adhoc shape and got the recognition by the IEI Headquarter on 1st April, 1991. Accordingly, the Silver Jubilee Celebration was organized (inclusive of the period of Agartala Local Centre) during 2015-16. The present strength of Corporate and Non-corporate Members stands at 957 and 772 respectively. The Centre has organized National and International programmes & also 2 Council Meetings and 5 National Conventions which were appreciated by all. The Centre is organizing technical programmes aimed towards the development of the State which has been appreciated by the Govt. of Tripura. The Engineers, Faculty Members and Engineering Students are largely involved in all the activities. Special efforts have been taken to organize Seminar on every Saturday for the Engineering Students and Faculty members of different Technical Institutions and Expert Engineers of different organizations. The Centre has taken initiative to organize Joint Venture programme with other Centres of IEI and also with the professional bodies in Bangladesh and Nepal for exchange of technology know how of the region. On the basis of performance of Tripura State Centre, it has been accredited as Best Centre Award (for technical activities) in Category-C in 32nd Indian Engineering Congress held at Chennai in the year 2017. For details kindly visit: www.ieitripura.org

#### **ABOUT NATIONAL INSTITUTE OF TECHNOLOGY AGARTALA**

National Institute of Technology Agartala, a Centrally Funded Technical Institution is one of the thirty one National Level Technical Institutes in India. The Institute's vision is to help, to improve the economic development of the country particularly of the North-Eastern States, through the pursuit of excellence in technical education, research, consultancy and training. The Institute has marked an important footprint in academics and research in a short span of time after its conversion from the erstwhile Tripura Engineering College to NIT Agartala in the year 2006.

Situated in the lap of nature, NIT Agartala has embarked on a journey to make its presence felt in the map of Technical education and innovation in the country. The Institute pledges to revitalize the indices of education not only in the field of technical subjects but also pursue a chapter of excellence in various disciplines and in its course of evolution into a multifaceted knowledge hub of the country. The institute offers B.Tech, M.Tech., MCA, MBA, M.Sc.(courses in physics, Chemistry and Mathematics), BS-MS (in Physics, Chemistry and Mathematics) and BT-MT (in Engineering Physics) courses. To promote fundamental and applied research, it offers Ph.D along with Post-Doctoral Fellowship programs in various specializations of Engineering, Science, Management, Humanities & Social Sciences.

NIT Agartala in its strategic initiatives realizes the responsibilities of its pivotal role of importance in the arena of higher education to meet the future challenges and roots its commitment in inculcating the values of quality education. The Institute looks forward to empower our young generation with a quality technical education to own greater responsibilities to take our country forward.

#### **ABOUT NATIONAL INSTITUTE OF TECHNOLOGY ARUNACHAL PRADESH**

The National Institute of Technology, Arunachal Pradesh (NIT AP) was established in the year 2010 established by MHRD, Govt. of India. It is one of the 31 NITs in India and is recognized as an Institute of National Importance. Presently the institute is running in project phase with yearly intake of 190 undergraduate students in five major Engineering disciplines such as Civil Engineering, Computer Science and Engineering, Electrical Engineering, Electronics and Communication Engineering and Mechanical Engineering. Department of Biotechnology is taking up major research projects pertaining to the flora and fauna of the region and also imparts PhD program. Each department is equipped with well-established state of art laboratories to cater holistic development of the students. The Institute has secured 200 NIRF ranking in the year 2020. In ARIIA ranking for the year 2020, NIT AP secured a rank among top four NITs. The faculties and students of the institute are also engaged in various R&D projects sponsored by various Government agencies. The Institute is temporarily housed at Yupia and currently in the final phase of shifting its campus to permanent site viz. Jote.

Major thrust area of the Institute for the next five years is to encourage and engage in research, innovation and entrepreneurship development in Renewable energy applications, Bamboo and cane technology applications, Medicinal and aromatic plants studies, Robotics and Mechatronics, Food processing and Seismology. The Department of Mechanical Engineering mainly focused in the thrust area of research such as thermal management, renewable energy and its applications, biological heat transfer, robotics, thermo hydrodynamics of droplets etc.

#### **ABOUT TRIPURA INSTITUTE OF TECHNOLOGY**

The institute (erstwhile Polytechnic Institute, Narsingarh) bred from its embryo in the year 1958 with three conventional branches of Civil, Electrical and Mechanical Engineering, affiliated to West Bengal State Council of Technical Education. Later, one more branch namely Electronics & Tele-Communication Engineering paved its way into the system in the year 1995. The institute through its excellence and glorified journey over a period of more than 45 years could attract name, fame and reputation countrywide and as a result the Ministry of Human Resource was kind enough to extend its assistance through World Bank under Tech. Ed.-III Project for the growth of this institute in terms of capacity expansion and quality improvement during the period from 2001 to 2007. The Institute is administered by Education (Higher) Department, Government of Tripura and is affiliated to the Tripura University. With the introduction of the degree module from the academic session 2007- 08, the entire academic control of both degree and diploma had come under Tripura University. The diploma level students already registered under West Bengal State Council of Technical Education up to the academic session 2006 - 07 remained tied up with WBSCTE. The curricula and other academic control of the Tripura Institute of Technology, both of diploma and degree would remain directly under the control of Tripura University from June, 2007.

#### **ABOUT THE THEME OF THE NATIONAL CONVENTION**

#### **Innovations in Thermal Science and Engineering**

This decade is declared as DECADE OF INNOVATIONS. Keeping the conformity of the decade, The Tripura State Centre of IEI would like to organize 36th National Convention of Mechanical Engineers on the theme 'Innovations in Thermal Science and Engineering' in association with National Institute of Technology Agartala, National Institute of Technology Arunachal Pradesh and Tripura Institute of Technology, Agartala. This programme will be organized as per the guidelines of IEI in a befitting manner with objective to showcase the event. It is expected that near about 200 research papers will be presented in parallel sessions with expected participation of about 500 participants including students of different Engineering Colleges. In the present world scenario, everybody is exerting thrust on new, renewable and sustainable technology where our environment is protected through zero green house gas emissions. This is only possible when scientists, technologists and engineers are looking forward for Innovative Green Technology for developing such environment. It is pertinent to look into the technology, which are being used or to be developed based on the above mentioned principle to apply in Thermal Science and Engineering, a branch of Mechanical Engineering, basically responsible for temperature management, energy and power development and other associated fields.

#### **SUB THEME OF THE NATIONAL CONVENTION**

- Innovative Technology for enhancement of Heat and Mass Transfer
- Green Technology for Enhancement of Engine Efficiency
- Modern Combustion and Fire Simulation Techniques applied in Engines and gas Turbine
- Modelling and Simulation of different technologies adaptable in thermal science and engineering applications
- Active and Passive Techniques for performance enhancement in Boiling and Condensation
- Thermal management of Electronic Cooling
- New and Renewable Energy Technologies
- Zero Emission Strategies in Thermal Science and Engineering
- Re-using of Waste Energy
- Energy Efficiency and Green Technology
- Green Power

#### SUBMISSION OF PAPERS

#### **GUIDELINES FOR AUTHORS**

Authors intending to submit Paper for the National Convention are advised to adhere to the guidelines as mentioned below.

- 1. Papers should be camera-ready in MS-Word format, not exceeding 3000 words in length and should not carry more than 5 illustrations/photographs.
- 2. The language of the Publication is English. The mode of presentation should be in third person.
- 3. The Template for preparation of article may be downloaded from: https://www.ieindia.org/webui/IEI-Activities.aspx#Call\_Papers
- 4. SI units should be used wherever applicable. Other units, if used, should be given only in parentheses preceded by SI units.
- 5. Mathematical symbols should be typed and care should be taken to differentiate between similar characters (e.g. 1 and I), upper and lower case letters and superscripts and subscripts.
- 6. Lengthy mathematical proofs and derivations and extensive test data should be given as an appendix.
- 7. The Template of Paper can be downloaded from the link: https://www.ieindia.org/webui/IEI-Activities.aspx#Call Papers

The papers will be submitted in a two-step process.

#### Step-1

Papers will be pre-submitted to Prepare@U system for plagiarism checking of similarity by iThenticate software and doi number allocation. The charges for the same (Rs.500/-) will have to borne by the author.

#### **Process of submission:**

- 1. Go to https://www.prepare.org.in
- 2. Click on Submit Manuscript from Menu: https://www.prepare.org.in/preprint/index.php/preprint/submission/wizard
- 3. For existing users Login with username & password

For new users - Register and login

- 4. Submit the article
  - Make Payment (INR 500/-) from the available link
  - Upload manuscript
  - Enter metadata
  - Confirm the submission

#### Step-2

After the papers are peer-reviewed and accepted for presentation, the authors have to deposit the Registration Fee of Rs.3000.00 (Rupees three thousands) only to The Institution of Engineers (India) along with a copyright declaration form (available at https://www.ieindia.org/webui/IEI-Activities.aspx#Call Papers details of which will be communicated to the author along with the acceptance.

#### **PUBLICATIONS**

- Few selected papers will be recommended to the Journals of IEI Series C, which is SCOPUS-indexed. Fast-track review of those papers by the Editorial Team of the Journals will be ensured.
- Technical Volume of the National Conventions with ISBN will be brought-out in electronic form.
- In the Technical Volume, abstract of all papers accepted for presentation will be published along with the full text of the papers, which have not been recommended to the IEI journal.
- The papers submitted to the journal, if found unacceptable by the Editorial Team of the journals, will be accommodated in a supplementary Technical Volume of the Convention.

#### **SCHEDULE**

Submission of full text of paper: 31.10.2021
Acceptance will be conveyed to authors: 10.11.2021
Submission of Registration Fee: 15.11.2021
Intimation about Presentation: 17.11.2021

#### PARTICIPATION AND REGISTRATION

There is no participation charge for the online National Convention. Those who want to avail any e-Certificate of participation have to pay a sum of Rs.200/- + 18% GST (totaling Rs. 236.00) only to The Institution of Engineers (India). Certificate along with tax invoice will be mailed to the participant within 7 days of conclusion of the event. This is an approved CPD programme of The Institution of Engineers (India).

For Free Registration, please click on the following link or copy the link to your browser

#### https://docs.google.com/forms/d/147Q6spqt71W2juI70RXkzYr4djtMej0ca3YWF2akfpQ/edit

The participants who opt for 'e-Certificate of Participation' need to register themselves first using the above-mentioned registration link and thereafter make a nominal payment of INR 200/- (+18% GST) using the payment gateway available against the link:

https://ieindia.org/adminui/webinar.aspx?FPeEChVPIHDy8bv+eVZBqA2KNHTbBg380zUikm/Fzlo=

#### Souvenir

A Souvenir containing the glimpses of the National Convention shall be published by Tripura State Centre. Advertisements from reputed, Companies and Agencies, and other Organizations are invited with contribution at rates given below:-

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Last Cover Page - Rs.50,000/- + 18% GST
Inside Cover Page - Rs. 40,000/- + 18% GST
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All payments should be made in favour of "The Institution of Engineers (India), Tripura State Centre" Payable at Agartala.

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 GSTIN:
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<b>Er. Raja Chakraborti</b> , Head, Mechanical Engineering Department, Tripura Institute of Technology, Narsinghar, Agartala

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		<b>Er. Nabarun Das Gupta</b> , Associate Professor, Mechanical Engineering Department, Tripura Institute of Technology, Narsingarh
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		Er. Tapas Bhowmik, Dy. General Manager (Project), OTPC Ltd., Palatana project, Udaipur

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	_	
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**Pandit Nehru Complex** 

(Near Tripura Housing & Construction Board),

PO: Kunjaban, Agartala, Tripura (West), Pin-799006 Phone: 0381 – 2304700 (01.00 PM to 08.00 PM) Email: tripurasc@ieindia.org, ieitripura@gmail.com

#### CONTACT

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### **REGISTRATION FORM**

## 36th National Convention of Mechanical Engineers

### **National Seminar**

on

# "Innovations in Thermal Science and Engineering" December 05 – 06, 2021

Name:(Block Letters)
Designation
Organisation
Mailing Address:
Telephone O
Email:
IEI Membership Grade and No
Registration Fee
Mode of Payment: A/c Payee Cheque/Demand Draft/NEFT/ in favour of The Institution of Engineers (India), Tripura State Centre, payable at Agartala.
Encl:
Signature

## **Advertisement Confirmation Form**

## 36<sup>th</sup> National Convention of Mechanical Engineers & National Seminar

on

## "Innovations in Thermal Science and Engineering" December 05 – 06, 2021

December 05 – 06, 2021
To
The Organising Secretary
36th NCMC, Agartala
Dear Sir,
We would like to book one
Please find enclosed the details of Bank Transfer
Thanking you,
Yours faithfully,
(Signature with official seal)
Date :
Encl: as above.