PSN COLLEGE OF ENGINEERING AND TECHNOLOGY, MELATHEDIYOOR - 627 152, TIRUNELVELI DISTRICT, TAMIL NADU, INDIA

INTERNATIONAL CONFERENCE ON ENGINEERING CHALLENGES IN GLOBAL SUSTAINABLE DEVELOPMENT

JANUARY 30 & 31, 2025

Objective

The Committee of the United Nations has arrived at an agenda to achieve global sustainable development by 2030. There are about seventeen sustainable development goals (SDGs) such as (1) no poverty, (2) zero hunger, (3) good health and well-being, (4) quality education, (5) gender equality, (6) clean water and sanitation, (7) affordable and clean energy, (8) decent work and economic growth, (9) industry, innovation, and infrastructure, (10) reduced inequalities, (11) sustainable cities and communities, (12) responsible consumption and production, (13) climate action, (14) life below water, (15) life on land, (16) peace, justice, and strong institutions, and (17) partnerships.

As energy is the key to achieve every other 16 SDGs, it is apt to mention the potential of distributed electricity generation and the engineering challenges in achieving SDG 7 about affordable and clean energy. In distributed electricity generation, a biogas-fired micro-gas turbine (MGT) generator with an output from 5 kW to 500 kW is one of the options. With the concept of the agro-energy complexes, efforts are being made in European countries to integrate biogas production from agricultural farm wastes and electricity generation using MGT. The development of an MGT requires the design and precision manufacturing of tiny radial compressors and turbines that are efficient against tip leakage. To improve thermal efficiency, MGTs are equipped with exhaust gas heat recuperators. To increase the temperature of gas at the entry to the turbine, cooling systems are to be developed. MGTs drive the Permanent Magnet Alternators (PMAs). PMAs generate electricity at a frequency in the range of a few kHz equivalent to the speed from 50000 RPM to 100000 RPM of the MGTs. Using solid-state power electronics, the unsteady electrical power in the range of a few kHz is converted into steady electrical power from 380 V to 480 V and from 40 Hz to 60 Hz grid frequency. High-speed air bearings are necessary to support the rotor. In distributed electricity generation where an MGT is used, air bearings can be a reliable option for extending the service time between overhauls. The major obstacle to the application of air bearings is the phenomenon of a self-excited whirl. During the air-bearing design, research efforts are being made to analyze and evaluate this kind of dynamic instability.

This international conference aims to focus on such engineering challenges for attaining the aforementioned global sustainable development goals of the United Nations. There will be deliberations that address engineering challenges in access to affordable food, clothing, shelter, energy systems, and education, climate change, biodiversity, pollution, jobs and social protection, and digital connectivity.

For more information, please visit
https://icecgsd2025.psncet.ac.in

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About the Institution

The PSN Educational and Charitable Trust established the PSN College of Engineering and Technology (PSNCET) in 2001 under the leadership of Dr. P. Suyambu. The Institute backed by world-class research and development attained autonomous status in 2012 and is affiliated to Anna University, Chennai. This institution has been accredited with an A+ grade by NAAC in the third cycle. The Institute boasts of strong academic-industrial interaction and high-quality research and consultancy. Managed by a professional team for the past 22 years, PSNCET enjoys national repute. The institute has competent qualified faculty and visionary management to enhance the quality of education at all levels and maintain its position in the emerging global scenario.

Dr. P. Suyambu
Founder & Chairman
PSNCET

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KEYNOTE SPEAKERS

Dr. Abdus Samad
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Professor, Department of Ocean Engineering,
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Dr. Rizalman Bin Mamat
Professor, Faculty of Mechanical &
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Dr. Harjit Singh
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Conference Themes

Research papers from the following heads of themes are invited.

1. Structural Engineering and Environmental Engineering
2. Thermal Sciences and Energy Engineering
3. Design Engineering
4. Materials Science and Manufacturing Engineering
5. Electricity Generation Engineering
6. Electrified Transportation Engineering

The full-length research articles will be published in the Scopus Indexed Journal "Problems of the Regional Energetics" provided they meet the standards for publication in this journal and pass the editorial board standard verification. Click here for journal website.

Time-frame

- Full-length research article submission: Till January 15, 2025
- Early Bird Registration: Till January 15, 2025
- Late Registration: From January 16, 2025

For further information

Dr. Muruganandam Muthanandam

Convener - ICECGSD-2025

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