



10th National Power Electronics Conference

15th to 17th December 2021



Organised By



School of Electrical Sciences
भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर
Indian Institute of Technology Bhubaneswar

About the Conference

NPEC was first organized at IIT Bombay in 2003 and subsequently in IIT Kharagpur (2005), IISc Bangalore (2007), IIT Roorkee (2010), IEST Shipur (2011), IIT Kanpur (2013), IIT Bombay (2015), College of Engineering, Pune (2017) and National Institute of Technology Tiruchirappalli (2019) to enhance the interaction of the peers in the field of Power Electronics. This conference will be a launch pad for many researchers to exhibit the influence of Power Electronics on various applications viz. industry, domestic, commercial, mobility and electric utility systems. Its impact on effective energy conversion will be envisaged in this forum. The Conference focuses on the latest technologies, strategies and challenges that are faced by power Electronics systems. Technical sessions by industrial experts will deliberately bring out the recent challenges faced in industry which will provide an opportunity for inspirational minds to solve them. This will lead to a sturdy power electronic community comprising of academicians, research scholars and industry professionals. The development of new circuits and tools for the power electronic systems will also be an outcome of this conference.

The 10th Edition of this prestigious conference is to be held from 15th Dec to 17th Dec 2021 at Indian Institute of Technology Bhubaneswar, an institute of national importance which is located on the foothills of the magnificent Barunei, in the state of Odisha, India. It would be another proud moment for IIT Bhubaneswar to organize this conference which will be a formal get-together for the power electronics community.

Authors are invited to submit the full paper (Maximum 6 pages) for peer review as "PDF" conforming to IEEE conference paper format. All papers must be original and not simultaneously submitted to another journal or conference. It is expected that submission spells out the purpose of work, novelty or advances in the art and results obtained with their significance. This is the first call providing the early information. The details will be provided soon. The website (<https://conference.iitbbs.ac.in/NPEC-2021>) and portal for submission will become active from Feb 16th 2021. The papers are invited on, but not limited to the following topics:

Technical Co-sponsors



IEEE
KOLKATA SECTION



IEEE
BHUBANESWAR SUBSECTION

The accepted full papers will be published in the conference proceedings of IEEE, only if one of the authors registers and presents the paper in the conference. Papers from the conference proceedings will be included in IEEE Xplore. Further, the 20% of selected papers will be eligible for further review to be published in the Transactions or Magazine of Industry Applications

Track - 1 Drives and Control

- AC, DC, BLDC Drives, Reluctance Machine Drives
- Advanced Control of Drives
- Design, Optimization and Condition Monitoring of Electrical Machines
- Actuators, Sensor Integration
- Design Automation for Power Converters

Track - 2 Power Electronics for Renewable Energy Systems Integration

- Distributed Energy Systems
- Wind and Solar PV systems, Fuel Cells
- Grid Tied Systems
- Bidirectional Power Converters
- Power Engineering Education and Policy Issues

Track - 3 Power Flow Control

- Modeling & Control
- System Integration
- Power Quality conditioners, HVDC Converters & Control
- PE based protection applications in Power systems

Track - 4 Power Converter Topologies, Components and Devices

- Advanced topologies
- Efficiency and reliability
- Modelling, control and stability
- Gate drivers, EMI, EMC and protection
- Power Devices, Components and Magnetic Materials
- Fault tolerant converters
- Machine Learning Applications in Power Converters

Track - 5 Electric Mobility and wireless power transfer

- Power Electronics for Hybrid and Electric Vehicles
- Small, medium and long-range WPT
- Modelling and design of WPT coils
- Alignment issues, multi-coil optimization
- Vehicle Power Electronic Circuits and Systems
- Charging Systems

Track - 6 Energy Storage Systems

- Batteries, supercapacitors and flywheel
- Power Electronics topologies for integration of energy storage
- Energy management systems
- Second-life applications

About IIT Bhubaneswar



IIT Bhubaneswar is one of the eight new Indian Institutes of Technology established by the Ministry of Human Resource Development, Government of India under The Institutes of Technology (Amendment) Act, 2011. Indian Institute of Technology Bhubaneswar (IIT BBS) was established on 22nd July, 2008. The Institute strives to offer the best engineering education with unmatched novelties in curriculum. Within a short span of incipience, IIT BBS has made rapid strides towards becoming one of the elite technology institute of India spurred by sustained creation of knowledge and innovation, through high quality R&D activities and commitment to holistic education. The Institute aims to develop and pursue dynamic and flexible curricula

designed to facilitate creativity and cognitive thinking among students through productive partnership with industries. Students get exposed to a



wide variety of activities through societies and clubs, involving liberal arts, design, dramatics, robotics, music, dance and sports, instilling them with social awareness, a spirit of innovation, entrepreneurship and a thirst of discovery. All academic activities of the Institute are being carried out from the picturesque permanent campus at Argul, spreading over 936 acres of land with unique serene and pollution-

free academic environment, in the state of Odisha, India. It is located on the foothills of the magnificent Barunei, having link with Indian freedom movements. At present, the Institute has

seven schools and within a short period of time, IIT BBS has been able to build up world class infrastructure for carrying out advanced research and is equipped with state-of-the-art scientific and engineering laboratories. The Institute has a pleasant and friendly environment green campus which facilitates a multidimensional growth of the individual in the campus.

About Bhubaneswar



Bhubaneswar, the capital of Odisha, is also popularly known as the "Temple City of India", named after Tribhuvaneshwar, "Lord of Three Worlds" or 'Lord Lingaraj'. It is an important Hindu pilgrimage centre. The History of the city stretches back over 2000 years. The area first appears as ancient capital of Kalinga. The smart city Bhubaneswar with its modern buildings and extensive infrastructure perfectly complements its historic surroundings. With facilities to cater to every type of visitor, Bhubaneswar makes an ideal tourist destination. It is the largest city in Odisha and is a centre of economic and religious importance in Eastern India. The city is also known for its rich and varied heritage arts, crafts and dance.

Submission Instructions & Registration Fee

Soft copies of papers should be submitted in .pdf format as per the IEEE conference paper format, submits not exceeding six A4 size pages and paper should be uploaded through online portal. There will be blind review of the paper. The paper must include an abstract of about 200 words and a maximum of five keywords. The acceptance of the paper is based on the following factors: The purpose of the work; the manner and degree to which it advances the art; specific new results that have been obtained and their significance. Authors of the accepted papers will be informed by email. Information about necessary revisions will be communicated to the corresponding author through email. The author(s) will have to

incorporate the suggestions and will have to send the revised camera ready copy of the paper in the given time limit. Along with the paper, authors are required to submit an undertaking form stating that, the paper has not been published previously, is not under consideration for publication elsewhere, and if accepted will not be published elsewhere in the same form. It is mandatory for at least one of the authors to register in non-student category for publication of the paper in proceedings. For the author presenting more than one paper, it is mandatory to register and present each paper separately.

Category	Early Bird Registration fee (upto 15th Oct'21)	Registration fee after 15th Oct'21	Listener / Attendee for the conference upto 15th Nov'21
Delegates from industries/ utilities/R&D organization	Rs. 12,000	Rs. 14,000	Rs. 5,000
Delegates from academic institutions	Rs. 8,000	Rs. 9,000	Rs. 4,000
Student delegates	Rs. 4,000	Rs. 5,000	Rs. 3,000
Delegates from abroad	US \$ 450	US \$ 550	US \$ 350

Please Note: A discount of 20% will be available for online registration of IEEE members. Incase if the conference happens in Virtual mode registration fee will be revised.

Important Dates

16th Feb 2021 : Full paper submission opens
15th July 2021 : Full paper submission closes
30th September 2021 : Acceptance notification
15th October 2021 : Author registration closes
31st October 2021 : Submission of final version of accepted manuscripts

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For More details, log on to
<https://conference.iitbbs.ac.in/NPEC-2021/>