

International Workshop on Sustainability through Renewable Energy Solutions Considering Next-Generation Semiconductor Devices

27 December, 2024

Chief Patron

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Hon'ble Vice Chancellor, DTU, Delhi

Patron

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Convener(s)

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Organized by

Centre of Excellence for
Electric Vehicles and Related Technologies

Department of Electrical Engineering

Delhi Technological University

(Formerly Delhi College of Engineering)

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ABOUT DELHI TECHNOLOGICAL UNIVERSITY

Delhi Technological University (DTU) has an illustrious history of providing quality education and promoting research and entrepreneurship for over eight decades. With 83 years of its long-established tradition of excellence in engineering & technology education, research, and innovations, Delhi College of Engineering (DCE) (initially established with the name Delhi Polytechnic) came into existence in the year 1941 to cater to the needs of Indian industries for trained technical manpower with practical experience and sound theoretical knowledge. DCE was reconstituted to Delhi Technological University by Government of Delhi vide Act 6 of 2009. DTU has its lush green sprawling campus of 164 acres at Bawana Road, adjoining Sector-17, Rohini, Delhi-42, INDIA. The university has the desired autonomy to excel and shape itself as a world-class technological university.

Upholding and uplifting its long and remarkable history in education and research, the university currently offers various inter-disciplinary and industry-relevant programs in science, engineering, management, and allied areas at both the undergraduate and postgraduate level. The university currently offers 15 undergraduate, 30 postgraduate, and Ph.D. programs. With 14000 students on campus, the university is proud of its world-class alumni, top placement in reputable companies, and growing publications and citations. Working on the principles of integrating diversification and inclusivity in education, the university has been continuously admitting international students from over 50 different countries for the last five years.

ABOUT DEPARTMENT OF ELECTRICAL ENGINEERING

The Department of Electrical Engineering, DTU has significantly grown during the last eighty-three years since its inception. With the recent advances of growth in Industrial Electronics, Industrial Energy Sources and Utilization, the Department has acquired an important place in the National Capital Region of Delhi. Presently the Department runs undergraduate programme in Electrical Engineering and offers post-graduate programme in the area of Control and Instrumentation, Power Electronics and Systems and Power System Engineering, in addition to Ph.D. programme. The Department also offers a B Tech part-time programme for working professionals who have completed Diploma in Electrical Engineering.

ABOUT COE FOR EVRT

The University has established a centre of excellence for Electric Vehicles and Related Technologies (CoE for EVRT) to

impart training & research in thrust area of Electric Vehicles and Related Technology. The centre will help in developing an eco-system for transformation from a traditional to eco-friendly transportation system. State-of-the-art facility for training & testing will be created to carry out interdisciplinary research in Electric Vehicles and associated areas. The Centre is jointly funded by Delhi Knowledge Development Foundation (DKDF), Govt. of NCT of Delhi, and Delhi Technological University, Delhi. CoE for EVRT focused research areas will include but are not limited to the design, development and analysis of electric vehicle motors and drives, charging station infrastructure, charge controllers, battery management systems, retrofitting, etc.

TOPICS OF THE WORKSHOP

Renowned overseas experts from academia and industry will be delivering expert talk on the following topics:

Prof. Victor Veliadis: SiC Power Chip Fabrication in a Si Fab
Dr. Danan Dou: Efficacy of Electricity in Energy Conversions.

Dr. Brij N. Singh: Wide Bandgap power electronics for off-road vehicles

Dr. Sanjeet Dwivedi: Power electronics for hydrogen production system.

Prof. Mohan Lal Kolhe: Integrated Renewable Energy System based on Hydrogen.

PARTICIPATION

One-day international workshop on Wide Bandgap (WBG) Semiconductors for Sustainable Transportation is open for Faculty members of Higher Educational Institutions (HEIs), AICTE/UGC recognized colleges/ institutions and technical universities/ deemed universities, Scientists, Industry personnel, Research scholars, and Engineering students. The interested candidates are required to register using the link provided on or before 10th December 2024. The seats for the workshop are limited. The selected participants will be communicated the workshop schedule in due course of time. The participants will not be paid TA/DA for attending the workshop. The venue for the workshop will be CoE for EVRT, Department of Electrical Engineering, Delhi Technological University, Delhi, India. The number of seats is limited and shall be allotted on first come first basis.

ORGANIZING COMMITTEE

Prof. Vinod Kumar Yadav
Dr. Ashish Kulkarni
Sh. Saurabh Mishra
Dr. Vanjari Venkata Ramana
Sh. Krishna Dutt

EXPERTS WITH US



Dr. Victor Veliadis (Fellow IEEE) obtained Ph.D. degree in Electrical Engineering from John Hopkins University (1995). He is Executive Director & CTO of PowerAmerica, a member-driven Manufacturing USA Institute of industry, universities, and national labs accelerating the commercialization of energy efficient silicon carbide and gallium nitride power semiconductor chips and electronics. At PowerAmerica, he has managed a budget of \$156 million that he strategically allocated to over 210 industrial and University projects to catalyze SiC and GaN semiconductor and power electronics manufacturing, workforce development, and job creation. His PowerAmerica educational activities have trained 430 full-time University students in collaborative industry/University WBG projects, and engaged over 7000 attendees in tutorials, short courses, and webinars. In 2023, he won a \$64M U.S. Department of Energy PowerAmerica renewal to further catalyze WBG power technologies. He is also PI of the \$5 million NIST "Building pandemic resilience in Native American communities" electrification and emergency management project. Dr. Veliadis is an ECE Professor at NC State University, and an IEEE Fellow and EDS Distinguished Lecturer. He has 27 issued U.S. patents, 12 book chapters, and 163 peer-reviewed publications to his credit. He is a sought-after speaker with over 180 keynote/tutorial/invited presentations including keynotes at ICSCRM, APEC, ECCE, ECPE, IFWS, and WiPDA. Prior to entering academia and taking an executive position at Power America in 2016, Dr. Veliadis spent 21 years post-PhD in the semiconductor industry where his work included design, fabrication, and testing of SiC devices, GaN devices for military radar systems, and financial and operations management of a commercial semiconductor fab. He has received military training in the Army Infantry and is a third-degree black belt in Shotokan karate.



Danan Dou (Fellow SAE) has a Ph.D in Chemistry. He worked on emission controls for 11 years before joining John Deere in 2006 as the manager of aftertreatment technologies. Danan is a John Deere Fellow in Engine Technology and a SAE Fellow. His current position is the Chief Technologist of John Deere Power Systems



Dr. Brij N. Singh (Fellow IEEE) is Electrification R&D Manager in John Deere USA. He has authored or coauthored more than 100 research papers, 39 granted US patents, and 1 trade secret. His current research interests include wide bandgap technologies, power electronics for precision agriculture, vehicles' electrification, eMachine control systems, and power converters. Dr. Singh is a recipient of four teaching awards at Tulane, where he worked as Assistant Professor of Electrical Engineering. In John Deere, Dr. Singh won three innovation awards and one collaboration award. In 2020, he was awarded the "Power Electronics Engineering Fellow" title by John Deere. He also won the 2020 IEEE Power Electronics Emerging Technology Award and has been recognized as the 2023-2024 IEEE Power Electronics Society Distinguished Lecturer. In June 2023, US Department of Energy recognized. Dr. Singh's outstanding contributions and insightful technical expertise by "Distinguished Achievement Award".



Dr. Sanjeet K Dwivedi is currently working as Advisor Converter Technology for 14MW Offshore wind plant in Siemens Gamesa Renewable Energy A/S Brande, Denmark. He has honorary appointment as Adjunct Professor of Electrical Engineering Department of National importance Institute ABV-Indian Institute of Information Technology, India, since Jan 2024. Earlier to it Dr Sanjeet was a Technology Manager at Everfuel A/S (A Danish MNC). Denmark. Everfuel has developed first prototype of 20MW green hydrogen production plant in Europe. From 2008 to 2021 he worked as Technology Leader at Danfoss Power Electronics A/S Global R&D, Gråsten Denmark. He has contributed for Danfoss, more than 15 international patents and 4 products. He received two Masters degrees, first one in Power Apparatus and Electric Drives from Indian Institute of Technology (IIT), Roorkee, India in 1999 and second Master Degree, M.Sc. Engineering in Innovation and Business from Southern Denmark University, Aalborg Campus, Denmark in 2016. He was awarded Gold Medal from IIT Roorkee. Dr. Sanjeet has received his PhD degree in Power Electronics and Drives from Indian Institute of Technology New Delhi, India in 2006. He was a recipient of Government of India (HRD Ministry) Research Assistantship Scholarship for his Ph.D. tenure. Dr. Sanjeet also completed his executive leadership education from MIT Boston. He was

honoured with adjunct professor position at Curtin University, Perth, Australia for a period of 2016-18.



Prof. Dr. Mohan Lal Kolhe is a full professor in smart grid and renewable energy at the Faculty of Engineering and Science of the University of Agder (Norway). He is a leading renewable energy technologist with three decades of academic experience at the international level and previously held academic positions at the world's prestigious universities, e.g., University College London (UK / Australia), University of Dundee (UK); University of Jyväskylä (Finland); Hydrogen Research Institute, QC (Canada); etc. In addition, he was a member of the Government of South Australia's first Renewable Energy Board (2009-2011) and worked on developing renewable energy policies. Professor Kolhe is an expert evaluator of many prestigious international research councils (e.g., European Commission: Erasmus+ Higher Education – International Capacity Building, Royal Society London (UK), Engineering and Physical Sciences Research Council (EPSRC UK), Cyprus Research Foundation, etc.). In addition, many international organizations have invited him to deliver keynote addresses, expert lectures, workshops, etc. He has also been a member of many academic promotional committees. Professor Kolhe has been successful in obtaining competitive research funding from prestigious research bodies (such as the Norwegian Research Council, EU, EPSRC, BBSRC, NRP, etc.) for his work on sustainable energy systems. His work on energy systems and electrical & electronic engineering has been recognised in the top 2% of scientists worldwide consistently from 2020 to 2023, according to Stanford University matrices based on Elsevier data. His top 10 publications have received an average of more than 200 citations each, making him an acknowledged pioneer in his profession on a global scale.

IMPORTANT DATES & REGISTRATION LINK

Start date of Registration:

21th November 2024

Last date of Registration:

10th December 2024



Registration link: <https://forms.gle/5SdqQbveZNUUx5E8>

Any Query Contact at:

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