***SEMINAR ANNOUNCEMENT***

**DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING**
**COLLEGE OF DESIGN AND ENGINEERING**
Website: https://cde.nus.edu.sg/ece

***Area: Power & Energy Systems***

***Host: Associate Professor Sanjib Kumar Panda***

***Jointly organized by:***
***IEEE Joint IAS/PELS Student Branch Chapter, NUS and***
***NUS ECE Department***

***IEEE PELS/IAS Student Branch Chapter Seminar***

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| **TOPIC** | : | **Solid State Transformer Journey – From Concept to Pilot Demonstration in a Decade, and Solid State DC Transformers for DC Grids** |
| **SPEAKER** | : | **Professor Subhashish Bhattacharya**<br>**Department of Electrical and Computer Engineering**<br>**NC State University, USA** |
| **DATE** | : | **Tuesday, 22 November 2022** |
| **TIME** | : | **3:00PM to 4:00PM** |
| **VENUE** | : | **EA-02-14 Executive Room**<br>**NUS College of Design and Engineering, NUS**<br><br>**Alternatively,**<br>**Join Zoom Meeting:**<br>**https://nus-sg.zoom.us/j/83190025781?pwd=cFFGdmUzZmFxcDlCQWR0cThUVzZFZz09**<br><br>**Meeting ID: 831 9002 5781**<br>**Passcode: 782359** |
| **REGISTRATION** | | **Please register here for attendance and logistic purposes.** |


**ABSTRACT**

The presentation will chronicle the Solid State Transformer journey from concept to pilot demonstration in a decade. The SST for grid interconnection at MV is enabled by the advances in HV SiC power devices at 10-15kV blocking voltages. The design, control, development, and testing of SST with HV SiC 10kV MOSFETs and 15kV SiC IGBTs will be presented. A pilot demonstration of an MV 4160V, 100kVA SST with SiC 10kV MOSFETs will be discussed. Solid State DC Transformers for DC Grids at both MV DC and LV DC enabled with HV SiC power devices integrating distributed, and renewable energy will be presented. Power conversion systems with a new SiC Bidirectional MOSFET [BiDFET] device and its characteristics will be presented

## BIOGRAPHY

Subhashish Bhattacharya received his B.E. from IIT Roorkee, India, M.E. from IISc, India, and Ph.D. from the University of Wisconsin-Madison, all in electrical engineering. He worked in the FACTS and Power Quality group at Westinghouse, which later became part of Siemens Power, from 1998 to 2005. He joined the Department of ECE at NCSU in August 2005, where he is Duke Energy Distinguished Professor and a founding faculty member of NSF ERC FREEDM Systems Center, Advanced Transportation Energy Center [ATEC] and the US DOE initiative on WBG based Manufacturing Innovation Institute – PowerAmerica - at NCSU. His research interests are Solid-State Transformers, Integration of renewable energy resources, MV power converters enabled by HV SiC devices, FACTS, Utility applications of power electronics and power quality issues; DC Microgrids, high-frequency magnetics, active filters, and application of new power semiconductor devices such as SiC and GaN for converter topologies. His research is funded by several industries, NSF, DoE, ARPA-E, US Navy, ONR, NASA. He has over 600 publications and 10 patents with several pending patent applications.

https://cde.nus.edu.sg/ece/highlights/events/