SEMINAR ANNOUNCEMENT

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

Area: Power and Energy Systems

Host: Associate Professor Panda, Sanjib Kumar

Guest lecture

TOPIC	:	**Intelligent System for Smart-Grid Power Quality Monitoring**
SPEAKER	:	**Dr. Mrutyunjaya Sahani** **Research Fellow** **Electrical Machines and Drives Laboratory** **Department of Electrical and Computer Engineering** **National University of Singapore**
DATE	:	**Tuesday, 14 Feb 2023**
TIME	:	**7.00PM to 9.00PM**
VENUE	:	**Block E1-06-03** **College of Design and Engineering, NUS**

ABSTRACT

The objective is to develop an online monitoring system based on a high-speed embedded processor using signal processing algorithms and machine learning techniques for quick detection and accurate classification of highly nonstationary power signal disturbances of the smart grid. The recently developed signal processing algorithms are used for the extraction of efficacious indices for adequate and efficient representation of the disturbance patterns in the feature domain. New approaches for non-stationary power signal analysis, meant for yielding promising results, have been introduced. Clear detection and visual localization of disturbance patterns are presented in the time-frequency domain. Further, this work investigates pattern classification and its application to non-stationary power signal disturbance patterns. Different machine learning techniques are introduced with faster learning speed, lesser computational complexity, superior classification accuracy, and short event detection time. Finally, the proposed methods are tested and examined in the different high-speed embedded processor platforms to validate the feasibility and cogency for online monitoring of the power signal disturbances.

BIOGRAPHY

Mrutyunjaya Sahani (Senior Member, IEEE) received the B.Tech. degree in electrical engineering from the Biju Patnaik University of Technology, Rourkela, India, in 2007, the M.Tech. degree in embedded system technology from the SRM University, Chennai, India, in 2010, and the Ph.D. degree in electronics and communication engineering from Siksha 'O' Anusandhan University, Bhubaneswar, India, in 2019. He is currently pursuing Postdoctoral research fellow at National University of Singapore, Singapore. His current research interests include power quality analysis, power system, signal analysis, micro and smart grid, renewable energy integration, energy management, artificial intelligence, and embedded system design.