Special session on
"Integration and Control of Renewable Energy with the Power Grid"

Organized and co-chaired by:

Dr. Papia Ray, Veer Surendra Sai University of Technology, Burla Odisha papiaray_ee@vssut.ac.in
Dr. Surender Reddy Salkuti, Woosong University, Daejeon, Republic of Korea surender@wsu.ac.kr
Dr. Hasmat Mallick, University of Technology Malaysia (UTM), Malaysia hasmat@utm.my

Call for Papers

Technical Outline of the Session and Topics:

Grid integration of renewable energy means reimagining operation and planning for a reliable, cost-effective, and efficient electricity system with cleaner new energy generators. This includes where it is built, how it is optimized, and how it is used to power a carbon-free future. It means providing grid operators with the situational awareness and control capabilities they need to plan and manage a rapidly changing energy resource mix. The path forward involves assessing long-range demands and evaluating pathways for efficient performance. There are several technology options available that can help integrate variable renewable energy into power systems. In the longer run, however, power systems with high shares of variable renewable power generation will require a re-thinking the traditional designs, operations, and planning practices from a technical and an economical point of view. It also includes evaluating, scheduling, and optimizing future energy market design using advanced modeling and simulation to understand the operational connections to renewable energy availability, generator performance, grid reliability, and electricity delivery to customers.

Grid integration of renewable energy includes building resilience against threats, such as natural disasters and cyberthreats. It also involves overcoming challenges, such as instantaneous to seasonal unavailability of renewable resources. By developing solutions and mitigative measures across both information technology and operational technology systems, we can prepare for a cleaner, greener, and more resilient energy landscape.

Topics of the Session include, but are not limited to:

- Grid Integration of Renewable Energy
- Smart Grid and Renewable Energy Systems
- Renewable Energy and Grid Stability
- Integration and Control of Renewable Energy
- Multi-Agent system for grid energy management
- Microgrid Energy Trading
- Grid Reliability
- Energy Transition
- Machine Learning Solutions for Renewable Energy Integration in Power Systems
- Control Issues in Renewable Energy Integration
- Protection Challenges and its mitigation schemes on integration of distributed sources to power system network
- Synchrophasor based Monitoring System for Grid Interactive Energy Storage System Control
- Real time monitoring and control of grid with renewable energy
- Integration of Renewable Energy and Electric Vehicle in Power system
- Cyber Security in Microgrid
- Operation and Control of Microgrid using Internet of Things
- Advanced Protection schemes for smart grid with renewable energy sources integration

Author's schedule:

Deadline for submission of special session papers	30th September 2024
Notification of acceptance	31st October 2024
Deadline for submission of final manuscript	30th November 2024

All the instructions for paper submission are included in the conference website:
http://icpc2t.nitrr.ac.in