



3rd International Symposium on Sustainable Energy And Technological Advancements

(23rd – 24th February 2024)

ISSETA 2024 Special Session on

Reliability, Sustainability and Enhanced Monitoring of Power Network: An Urgent Need

Aims and scope of the session:

Reliable supply of electricity to the end user(customer) is very much crucial in modern competitive era. Every power utility is striving to achieve the better power generation, flexible transmission, and distribution of the electricity to the consumer. Entire power network is broadly divided into three segments i.e., generation, transmission, and distribution. Reliable and sustainable operation of each segment is essential to ensure the reliability and sustainability of entire power network. In this context, proper application of advanced cutting-edge technologies is needed to make the future power grid reliable and sustainable. In generation segment, emphasis over several green technologies is to be given rather than fossil fuel-based technologies. In transmission segment, several aspects such as wide area monitoring using advanced sensors, synchro phasors application for fault location and determination, drone based preventive maintenance, online health monitoring of devices, application of FACTS devices etc. have drawn significant attention. In distribution segment, various issues such as loss reduction, distribution automation, smart metering, power quality problem and solution. This special session focuses on the timely topics related to the reliability, sustainability and monitoring of the power network. The objective of this special session is to bring together the researchers, power system planners, power industries, academicians and discuss on the recent developments, challenges, practical case studies to make the future power grid reliable and sustainable.

Topics of interest:

This special session invites original manuscripts covering wide range of following topics (but not limited to)

- Reliability assessment methodology of power network
- Contingency assessment of power system
- Evaluation of outage cost and its impact

- Wide area monitoring using synchrophasor data
- Fault location identification and mathematical model using PMU data
- Optimal allocation of synchrophasor for advanced monitoring
- Tripping analysis of electrical devices (transformers, circuit breaker, transmission line) connected to the power network
- Industrial practical case study of equipment failure and lessons learned
- Monitoring of electrical equipment for electricity supply reliability
- Sustainability assessment through green technology
- Application of Flexible AC transmission systems (FACTS) devices and optimal allocation
- Distributed generation (DG) for supply reliability
- Optimization of hybrid microgrid
- Smart metering, distributed automation
- Loss reduction technique in distribution sector
- Power quality issues
- Impact of EV in distribution network, EV charging and discharging issues
- Condition monitoring of equipment for reliability improvement

Special session organizers:

1. Dr. Meheub Alam

Manager(Electrical), Damodar
Valley Corporation (DVC), Mejia
Thermal Power Station, Bankura,
West Bengal, Certified Energy
Auditor of BEE (Reg. No-EA-
27794)
email:meheub.alam@dvc.gov.in
(MOB-9002272140)

Dr. Meheub Alam graduated in Electrical Engineering from Jalpaiguri Government Engineering College with highest CGPA and received M.Tech (Gold Medalist) in Power System in 2018 from the NIT Durgapur. He has obtained PhD (part-time) in Electrical Engineering from the NIT, Durgapur.

He has more than 11 years wide industrial experience in central power utility Damodar Valley Corporation (DVC) since 2012 covering various areas like the erection, testing, commissioning of the HT and LT switchgears, transformers, HT and LT motors, DC system of CHP package under EPC contract of TRF Infra Ltd till 2016. Later on, he was assigned the job of electrical operation at BTG control room of 2X600 MW units. He is a certified energy manager and auditor (EA-27794) under BEE and involved in the energy audit conducted in 2019 at RTPS plant. Presently, he is posted as Manager (Electrical) at Mejia thermal power station (MTPS). He has been actively engaged with research activities and continuously enriching himself with the latest technological update related to the power system area. His special interest includes renewable energy integration, power system contingency analysis, PMU application, online monitoring, distribution loss reduction, soft computing technique application in power system etc. He has published more than 10 research papers in international peer reviewed reputed journals like ELSEVIER, SPRINGER, INDERSCIENCE, WILEY etc. and various reputed conferences covering several topics such as floating solar energy, smart grid, PMU application, energy storage etc. Moreover, he has authored six book chapters (springer publication) and 3 books (available in amazon) based on his research work. He is regular reviewer of various reputed journals like ISA transaction, IEEE system journal, ITEES wiley, IEI (springer) etc. He is member of several professional bodies like IEI, IAENG etc. Many awards and recognitions are in his credit related to the power system research field, various innovative ideas, and paper presentation. He was awarded second winner in National Essay competition conducted by NIT Arunachal Pradesh in 2016. He has received POSOCO power system award in 2019 for exemplary contribution in the power system related research. He won plant level DVC talent championship-2014 and 2016 as the first winner at RTPS plant. He received STE young researcher award in 2020, Best paper presenter award in 2022 from DVC MTPS project, 3rd prize in Ideation contest 2022, Special appreciation award in 2023 from DVC MTPS project Head.



2. Dr. Sumit Banerjee

Professor, Dr. B. C. Roy Engineering
College, Durgapur, West Bengal
email: sumit_9999@rediffmail.com (MOB-
9434475618)

Dr. Sumit Banerjee received his BE degree from NIT Durgapur, ME degree from BIT Misra and PhD degree from IEST Shibpur. He has more than 25 years of teaching experience and also served as HOD of the Electrical Engineering Department at the Dr. B.C. Roy Engineering College, Durgapur, India. Presently, he is working as professor in the EE department of Dr. B.C. Roy Engineering College, Durgapur. His research interest includes voltage stability, power system operation and control, distribution system, application of soft computing technique, etc. He has received Tata Rao award from the IEI, India. He has published/presented around 115 papers in National and international journals and conferences. He has authored 23 books and 9 book chapters. He is the recipient of Tata Rao Award from Institute of Engineers (India) in 2014. Four students have already been awarded PhD degree under his supervision and three students are pursuing PhD degree under his guidance.



3. Dr. Chandan Kumar Chanda

Professor (HAG), IEST, SHIBPUR, HOWRAH
email: ckc_math@yahoo.com

Dr. C. K. Chanda is working as a Professor (HAG) in the Department of Electrical Engineering, IEST, Shibpur, India. He has earned Ph.D. degree from the Department of Electrical Engineering, B.E. College, Shibpur, India with specialization in Power Systems. Dr. C. K. Chanda has over 33 years of teaching and research experience in the diverse field of Power Systems Engineering and almost 5 years experience in industry. His areas of interest include Smart Grid, Resiliency, Stability and Renewable Energy etc. He is a recipient of Tata Rao Gold Medal. He is actively involved in various research projects funded by Centrally Funded Organizations like DST, UGC. He has published more than 250 research articles in reputed National/International journals and conferences. He is a member of the Editorial Board and Guest Editor of numerous reputed Journals. He has authored and coauthored nineteen (19) books in reputed publishing houses like CRC Press, Mc Graw Hill, PHI, and Springer etc. He has contributed twenty-one (21) book chapters in International Proceedings. Fifteen (15) research scholars have got their Ph. D. degree under the supervision of Dr. Chanda. Currently seven (7) PhD students are pursuing under him. More than thirty five (35) Ph. D. thesis has been adjudicated by him. He is a senior member of IEEE(USA), member of IET(UK), Fellow of Institution of Engineers (I), Chartered Engineer (I) and Life-member of ISTE.



4. Dr. Siddhartha Sankar Thakur

Professor, NIT Durgapur, West Bengal

email: sst@ee.nitdgp.ac.in (MOB-

9434788023)

Dr. S. S. Thakur received B.Tech (EE) in 1985 and M.Tech in Power System in 1989 from the REC Durgapur which is presently known as NIT Durgapur. He obtained his PhD from the IIT Kharagpur in 2000. Dr. Thakur has over 30 years of teaching and research experience and presently, he is working as professor at Department of EE, NIT Durgapur. His research interest includes PMU applications in power systems, power system state estimation, dynamic state estimation, etc. He has published more than 40 international peer reviewed renowned journal papers and several reputed conference papers. He has served various academic positions like Dean (faculty welfare), Registrar (officiating) at NIT Durgapur. He has authored/co-authored 10 book chapters and three books. Many students have got doctoral degree under his supervision and presently three students are pursuing PhD under his guidance. He has served as the reviewer of various reputed journals from IEEE, Elsevier, Springer, etc.

