

IEEE RTSI 2018 – Track 1 – 1.1

SMART ELECTRIC ENERGY SYSTEMS

The significant evolution of energy systems occurring in these last decade calls for adequate and innovative approaches in modelling, simulating, optimization and deployment of electric energy systems.

Electric energy is pervading our lives and there is a great attention and consolidated trend to change most of the use of energy into electric. Smart cities for example area moving to “all electric cities”. Electric energy in all its aspects from renewable to traditional generation, demand response which emphasizes the role of load not only for security reasons but also for efficiency and economics, integration of generation, loads and storage systems, electric transportation and vehicles are only some of the challenges for the future energy systems.

New roles and new modalities of interactions should be envisaged between Transmission System Operators and Distribution System Operators. Active roles are now possible for renewable generation, aggregation of loads, etc.

A fundamental role is played by ICT which permits to manage large numbers of distributed resources thus changing the paradigm of energy systems from centralized to highly distributed control and leading the evolution of traditional grids to smartgrids.

The session welcomes paper on the following themes (not exclusively, the list is for explanatory purpose):

- Smart grids
- Interactions between TSO and DSO
- Distributed generation modelling and optimization
- Management and control for Microgrids
- Demand Response
- Methodologies and tools for smart optimization
- Storage systems
- Smart cities
- Cyber security for electric systems.

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Short Curriculum Vitae

Master Degree cum laude in Electrical Engineering in 1995 at the University of Palermo. From 2001 to 2002 she’s been Full time Researcher at CNR – the National Research Council (High performance Computing section). Since 2002 she is Associate Professor of Power System at University of Palermo and since 2013 she is abilitated as Full Professor in the same area. Her research activity covers: smartgrids, microgrids, heuristic optimization for power system design and automation, demand response, decentralized intelligence for power distribution systems, intelligent cable accessories for asset management, PhotoVoltaic generation optimization, loads aggregation, energy market models based on Blockchain technology. Author of over 250 scientific publications and Lecturer for more than 25 years in: Smart grids, power distribution, artificial intelligence, intelligent systems for energy management, power conversion, technical norms for safety and security, computer science. She’s been lecturing every year within the Industrial PhD school at Aalborg University (DK) since 2013. Scientific Responsible for around 10 Research and Mobility Projects including industrial agreements with Prysmian S.p.A; and other multinationals, National projects with the National Research center ENEA, Bilateral cooperation and Mobility with Vietnam, National Basic Research funding and a few funded by internal university funding. She is Delegate of the Rector for the implementation of the European Charter and Code for researchers and Responsible of interdisciplinary education of PhD students at the University of Palermo.

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Short Curriculum Vitae

Master Degree cum laude in Electrical Engineering in 1979. From 1981 to 1983 Researcher at CREL - the Electrical Research Center of ENEL (Italian Electricity Board) in Milano, Italy. From 1984 to 1987 he was with Ansaldo S.p.A working in Power Plant automation and electric power systems.

Full Professor of Power System Automation since 2000 at University of Genova. His research activity covers: smartgrids, dynamic security assessment, power system automation, development of models for turbogas and combined-cycle generating units, load shedding strategies, distribution automation, distributed generation, liberalized energy market.

Author of over 220 scientific publications and Lecturer for more than 35 years in: conventional and renewable generation, Management and control of electric power systems and markets, Power systems in hospital structures. Scientific Responsible for over 80 Research Projects including 5 European Projects, 6 National Research projects and project with Italian Companies.

Delegate for Energy Efficiency Issues for the University. President AEE of the AEIT (Federazione Italiana di Elettrotecnica, Elettronica, Automazione, Informatica e Telecomunicazioni) IEEE Sister Society Member of the Board for FIRE – Italian Society for the rational use of energy. Chair of the IEEE Power & Energy Italy Chapter.