CURRICULUM VITAE
of
Emilio Ghiani

Emilio Ghiani graduated with full marks in electrical engineering at the University of Cagliari (Italy) in 1999, discussing a thesis titled "Algorithms and models for expansion planning of MV power distribution networks with open-loop schemes".

In February 2001 he started his PhD in Electrical Engineering and Computer Science focused on digital measurements for power quality evaluation. He completed the PhD discussing a thesis entitled "Numerical methods for assessing uncertainty in digital measurements" in February 2005.

Since January 07, 2020, he is Associate Professor of Power System at the same University. He holds the National Scientific Abilitation (ASN) for Full Professor in 09/E2 Sector - Electrical Engineering. Italian Minister for Research and Education

He is author of more than 100 papers published on international journals or presented in various national and international conferences, h Index 23, 2000+ Citations (Scopus October 2023).

He is author of 8 chapters of books dealing with smart grids, network planning for integration of renewable sources and distributed energy resources, and microgrids.

He is IEEE senior member and member of AEIT.

He is reviewer of international top rank scientific journals in the field of power and energy systems (e.g. IEEE transactions, IET, Elsevier, MDPI and Springer Journals), and he has been editor of MDPI Energies (ISSN 1996-1073) and MDPI "Inventions" (ISSN 2411-5134) Journals.

Dr. Ghiani is a member of the REPRISE - Register of Expert Peer Reviewers for Italian Scientific Evaluation and is in the list of experts for the evaluation and verification of "Ricerca di Sistema" projects pursuant to art. 9 of the Ministerial Decree of 16 April 2018 - (CSEA).

Dr. Ghiani has been reviewer of research projects concerning the sectors of competence and calls POR FESR 2014-2020 sector S3 - Smart Cities & Communities, Eco-Industry area (Environment and Energy), Smart Living - Infrastructures, networks and intelligent buildings - Environmental Sustainability.

Prof. Ghiani has been reviewer for research grant assignments. Università di Catania. Progetti di ricerca FIR 2014. 2014.

Prof. Ghiani has been Expert evaluation for Kazakh National Centre of Science and Technology. Ministry of Education and Science, Republic of Kazakhstan.

Prof. Ghiani has been reviewer for research grant assignments. Università di Genova. DIBRIS SEED Grant 2022. 2022.

Prof. Ghiani has been reviewer for Sustainable Energy Authority of Ireland (SEAI) - National Energy RD&D Funding Programme Call. 2023.

He is a Professional Engineer, registered in Association of Engineers of Cagliari Province; license number 8349, issued July 2001 (active status).

Emilio Ghiani is a co-founder of RESPECT - Renewable Energy Smart Power and Clean Technology Srl that is a Spin-Off Company of the University of Cagliari, which develops products and services in the power production, transmission and distribution sector, with particular reference to integration of renewable energy production plants and energy saving/optimization projects through the development of micro-grids and intelligent energy management systems.

Researcher Identifier_____

Scopus Author ID: 24437612700

Publons - publons.com/a/1244229/

Orcid - orcid.org/0000-0001-6949-4772

Google citations - scholar.google.com/citations?hl=en&user=lDSBJe4AAAAJ

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Current research interests are in the following fields:

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• planning and management of power distribution systems
• renewable energy sources and energy storage devices
• distributed generation and Smart Grids
• assessment of the reliability of power systems and smart grids
• EVs and E-Mobility
• building automation systems for energy efficiency

The main research topics covered by Dr. Ghiani, also in cooperation with colleagues from national and International universities, are the following:

a) Planning and operation of distribution systems: the theme of the planning and development of power distribution systems has been the dominant theme of his scientific production. By applying evolutionary algorithms (e.g. Genetic Algorithms, Particle Swarm Optimization) and multi-objective optimization methods the issues of integration and management of distributed generation from renewable and non- active and distribution networks have been addressed. Some papers have received considerable attention by academic international community, with a considerable number of citations.

b) Reliability of distribution networks: Several algorithms for the evaluation of the reliability of distribution networks in the presence of distributed generation have been developed. Stochastic and chronological models have been developed to represent all elements of the power distribution system, including the communication system necessary for the smart/active management. A meteorological model has been implemented in the simulation tool to reproduce the fluctuations of renewable generation caused by the presence of clouds and to simulate local weather conditions which can degrade the performance of communication networks.

c) Impact of renewable energy sources in distribution systems: Dr Ghiani investigated the theoretical and the experimental realization of systems for assessing the impact of renewable energy sources in the distribution system. He conducted a field test by installing a power quality measurement set-up in a 55MW wind farm, for the measurements of electrical quantities and their correlation with the wind data. He developed an optimization algorithm, based on genetic algorithms, specialized in the placement of biogas plants in Sardinia. Studies have been performed for the definition of optimal design of traditional and concentration photovoltaic power installations. It was developed a study to characterize the performance ratio of PV systems.

d) Modelling of components and structures subjected to electric lightning : the study of ground systems with high frequency has been a theme of the research activity. The most significant contribution was the validation of the lumped parameter model and the subsequent demonstration of its applicability in complex real cases.

e) Measures for power quality: the theme of the measures for power quality has been addressed by Dr. Ghiani during is PhD. In particular, the issues related to the use of digital measurements for the characterization of power quality in power distribution networks have been investigated.