

CURRICULUM VITAE
of
Alfonso Damiano

In the 1994 Alfonso Damiano joined the Department of Electrical and Electronic Engineering (DIEE) at the University of Cagliari as an Assistant Professor. In the 1997 he was confirmed in the position of assistant professor after the scientific activity assessment developed by the Electrical Machines and Drives National scientific committee. On 20th September of 2001 he won the national call for electrical machine and drives associate professor position at the University of Cagliari. In the 2005 he was confirmed in the position of associate professor after the scientific activity assessment developed by the Electrical Machines and Drives National scientific committee. In 2014 he gained national scientific qualification as full professor in the sector 09/ E2 "Electrical Energy Engineering". Since 2018 Alfonso Damiano is Full professor. His research interests include electrical machines, electrical drives, energy management, especially regarding electric vehicle and renewable energy system applications.

Alfonso Damiano has been lecturer in the courses of Electrical Machines, Machines and Electrical Drives, Electric Drives, Power Electronics. He is currently lecturer of Electrical Machines and Electrical Energy Management courses.

Since September 2015, Alfonso Damiano is Coordinator of the Master Degree Course in Energy Engineering. he is co-author of over 170 scientific publications in international journals and conference proceedings.

Since 1994 Alfonso Damiano has developed his research activity in the DIEE at the University of Cagliari into the "Electrical and Servo Drives research group". The research activity developed can be grouped into three of main themes, characteristic of the Italian Electrical Machines and Drives national research group: electric drives, power electronics and Electric energy management. In the following the research topics developed regarding each theme are reported.

Electric drives

- Modeling of linear high anisotropy reluctance machines
- Linear high anisotropy reluctance servo drive
- Development of new configurations of synchronous electric machines for vehicular application;
- Development and design of new configurations of poli-phase synchronous machines for wind turbine applications;
- Development and design of high speed synchronous electric motors with permanent magnets.
- Adaptive Control of Induction Motor Drive
- Torque Control imposing the Mechanical Response in Induction Motor Drives
- Direct Torque control in Induction Motor Drives
- State Observer for electric drives control
- Parameter Identification in electrical drives
- Control algorithm of multiphase PM synchronous generator for wind farm application
- Predictive control of electric drives

Power Electronics

- Adaptive Controller for Active filter
- Multilevel converter
- Control of power converter for photovoltaic applications
- Modeling of power electronic component electromagnetic emission
- Multilevel converters;
- Electronic converters for the management of electrochemical energy storage systems.

Electric Energy management

- Control system for the integrated management of renewable electricity production
- Electric vehicles: energy analysis and development of control algorithm for the management of energy flow according to Vehicle to Grid paradigm

- Management and control of electricity storage devices into power system
- High concentrator photovoltaic systems and their characterization
- Complex theory application to the energy infrastructure for critical assessment
- Development of control algorithm for micro-grid in the presence of generation distributed from renewable energy sources;
- Evaluation of distributed generation impacts on electrical energy systems;
- Energy planning and development of decision support systems;
- Development of models for the management and integration of electric mobility in intelligent networks (V2G, G2G);
- Control of energy storage systems for energy management in microgrid;
- Analysis and modeling of energy storage system in electricity markets and in electrical energy systems;
- High concentration photovoltaic systems and their characterization
- Application of the “Complex Network” theory to the analysis of critical infrastructure energy infrastructures;

Alfonso Damiano has coordinated and coordinates operational units at the University of Cagliari following international and national research projects:

- European project H2020 “Energy and economic efficiency for today smart communities through integrated multi storage technologies” **Netfficient** grant agreement No 646463;
- European project H2020 “Sustainable Integrated Management FOR the NEXUS of water-land-food-energy-climate for a resource-efficient Europe” **SIM4NEXUS** grant agreement No 689150;
- European project H2020 “Adaptive Cooperative Control in Urban (sub) Systems” **ACCUS** – Grant Agreement no: 333020 bando Artemis 2012 – tema SP1-JTI-ARTEMIS-2012-ASP7e SP1-JTI-ARTEMIS-2012-ASP3;
- National Strategic Project **CRISLAB**

He has Coordinated the operating unit in the following regional research projects:

- “Development of a New Photovoltaic Concentration System” funded following the peer-selection process for fundamental or basic research projects in implementation of Regional Law 7/2007 for the Promotion of scientific research and technological innovation in Sardinia;
- “Analysis and development of synchronous electric motors with permanent magnets for Electric Vehicles for Urban Mobility”;
- Scientific Coordination of the DIEE Operational Unit of the University of Cagliari called” Energy “of the GIEDION research project funded by the Autonomous Region of Sardinia under the Competitiveness and Innovation Support Program.
- Project launched in May 2013, “Design, design and implementation of prototype best management and control systems for a Micro Smart Grid” funded following the peer-selection process for fundamental or basic research projects in implementation of regional law 7 / 2007 for the Promotion of Scientific Research and Technological Innovation in Sardinia.