The Electrical Machines and Power Electronics Group (EMPEG) of the Department of Electrical, Electronics and Computer Engineering includes 5 full time scientists with 4 Professors and 1 Post-Graduate, 5 technicians and administrators, and several Ph.D. and graduate students. Since 1975 the research activities are devoted to Power Electronics, Power Devices, and Energy conversion systems, dealing with power electronic converters, electrical machines and drives, and their application in industrial processes, energy conversion from renewables, automotive and traction applications, home appliances. All members are actively involved in several international projects and maintain active collaborations with several scientific entities and industrial companies and research laboratories all around the world.EMPEG is headed by Prof. Ing. Angelo Raciti.

Key Research Fields & Competence Areas:

- Power Electronic Devices and Drivers: modelling and characterization
- DC/DC, DC/AC Converters, PFC, Renewable Energy and Fuel Cells Applications, Converters for Home Appliances
- Induction and Synchronous Motor Drives, PM Motor Drives, Sensorless Control, Fault Tolerant AC Drives, Wind Power Systems Control
- Modelling and Simulation of standard and special machines, Finite Element Analysis
- Analysis and testing of CFL and SSL lamps

EMPEG Laboratory Highlights:

The laboratories are equipped with various state of the art equipments. The main facilities are:

- EMC Test Laboratory with an anechoic chamber
- Test Benches for Electrical Drives (up to 50kW) with measurement and analysis tools
- Fuel Cells Test Bench
- Circuit Simulators and FEM Packages for Machines, Drives, Converters, and Devices

There are test benches for testing electrical and electronic components, and also for photovoltaic systems, in particular to provide static and dynamic curves of the inverter and the characteristic curves of photovoltaic panels.