DEPARTMENT AT A GLANCE

- Research staff: 82
- Graduate students: 28
- Technical and administrative staff (Research support staff): 44 (7)
- Studies Programs: 7

ENERGY, SYSTEMS, TERRITORY, AND CONSTRUCTION ENGINEERING
# Research Areas

<table>
<thead>
<tr>
<th><strong>Electrical engineering</strong></th>
<th>applied electromagnetics, electromagnetic compatibility, electric measurements, Special electromagnetic devices, magnetic levitation, non-destructive testing techniques, development and testing of magnetic materials, innovative sensors and transducers.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power systems</strong></td>
<td>power plant and electric grid dynamics, smart grids technologies, power management modules, electric and hybrid mobility, electric power conversion, electric motors, innovative electric drives, small and large electric machines, power electronics.</td>
</tr>
<tr>
<td><strong>Management engineering</strong></td>
<td>ICT and information management, Industrial economics and innovation management, smart specialization, Logistics and operations management, e-procurement, ERP, Industry 4.0</td>
</tr>
<tr>
<td><strong>Applied thermodynamics and heat transfer</strong></td>
<td>boiling heat transfer, heat pipes, thermal control applications, boiling in microgravity, geothermal systems, thermal energy storage, building physics, acoustics and lighting technologies, HVAC systems.</td>
</tr>
<tr>
<td><strong>Fluid machinery and energy systems</strong></td>
<td>renewable energy systems, innovative power plant technologies, energy saving in industry, power to gas and power to heat technologies, energy storage, internal combustion engines, fluid dynamics of turbomachinery, volumetric expanders, LNG.</td>
</tr>
<tr>
<td><strong>Civil Engineering and Architecture</strong></td>
<td>maritime engineering and coastal erosion, hydraulic structures, water and wastewater treatment, innovative materials and structures, digital graphics for the valorization of the cultural heritage, urban and landscape architecture, housing design</td>
</tr>
</tbody>
</table>

**Energy, Systems, Territory, and Construction Engineering**
RESEARCH PROJECTS

11 Regional funded projects
- TANC, SCY, MAG-IA, LOGICA, PROT-ONE, SIGS, STECH, SUMA, CONCIA, STIA, SY 4.0

4 Inter-regional projects
- GRRinPORT, REPORT, TDI RETE-GNL, PROMO-GNL

European Projects
- OSMOSE - Optimal System-Mix Of flexibilities Solutions for European electricity
- GLASUNTES – Innovative high temperature thermal energy storage concept for CSP plants exceeding 50% efficiency
- PROGETTO ETER - of the EU Commissione (DG EAC) in cooperation with EUROSTAT

24 Industrial research projects
- PRIN 2015 - Mitigating the impacts of natural hazards on cultural heritage sites, structures and artefacts (MICHe)
- PRIN 2018 – The energy flexibility of enhanced HEAT pumps for the next generation of sustainable buildings (FLEXHAET)
- PRIN 2018 – Advanced Network control of future smart grids
RESEARCH IMPACT

**International**
- Worldwide cooperation for new energy systems

**Local**
- Technology transfer and higher education

**Cultural heritage**
- Preserving the living environment

**Environment**
- Conserving the environment and the territory