<table>
<thead>
<tr>
<th>PHOTOVOLTAIC ENERGY</th>
<th>SOLAR THERMAL ENERGY</th>
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<tbody>
<tr>
<td>- Photovoltaic reconfigurable systems for energy extraction optimization</td>
<td>- Integration of solar ponds: energy storage and energy production</td>
</tr>
<tr>
<td>- Modular power conversion architectures</td>
<td>- Solar collectors using transparent insulation materials (TIM)</td>
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<tr>
<td>- Grid-connected photovoltaic systems</td>
<td>- Receivers in concentrating solar power plants</td>
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<tr>
<td>- Modelling and control of PV inverters and converters</td>
<td>- Thermal storage in concentrating solar power plants</td>
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<tr>
<td>- Refrigeration and thermal management of PV panels</td>
<td>- Grid integration of solar power</td>
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<td>- Hybridization of PV power facilities with other energy sources</td>
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<tr>
<th>WIND ENERGY</th>
<th>OCEAN ENERGY</th>
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<tbody>
<tr>
<td>- Transmission systems for offshore wind power plants</td>
<td>- Wave energy resource assessment</td>
</tr>
<tr>
<td>- Analysis and design of advanced controllers for wind turbines</td>
<td>- Wave energy balance in wave models</td>
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<tr>
<td>- Analysis of harmonics flow in wind power plants and design of mitigation measures</td>
<td>- Testing of wave energy capture devices</td>
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<tr>
<td>- Analysis of the performance of wind power plants</td>
<td>- Optimization of buoy geometry design</td>
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<tr>
<td>- Design of mini-wind generators</td>
<td>- Fluid–structure interaction for buoys and waves</td>
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<tr>
<td>- Wind turbine blade virtual wind tunnel</td>
<td>- Overtopping devices</td>
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<th>HYDROPOWER</th>
<th>GEOTHERMAL ENERGY</th>
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<tbody>
<tr>
<td>- Vibration analysis and diagnostics in machinery</td>
<td>- Very low enthalpy geothermal energy (up to 30°C)</td>
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<tr>
<td>- Predictive maintenance</td>
<td>- Low enthalpy geothermal energy (from 30°C to 90°C)</td>
</tr>
<tr>
<td>- Advanced monitoring and damage detection</td>
<td>- Medium enthalpy geothermal energy (from 90°C to 150°C)</td>
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<tr>
<td>- Structural dynamics, effects of fluid on structural response</td>
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<tr>
<td>- Experimental and numerical investigation of cavitating flows</td>
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<tr>
<td>- Numerical simulation in turbulent flows</td>
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<tr>
<td>- Hydropower plant performance</td>
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<td>- Production analysis of mini hydropower plants</td>
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<th>BIOENERGY &amp; BIOFUELS</th>
<th>NUCLEAR ENERGY &amp; SAFETY</th>
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<tbody>
<tr>
<td>- Microbial fuel cells in constructed wetlands</td>
<td>- Nuclear safety. Probabilistic risk assessment</td>
</tr>
<tr>
<td>- Biofuel production from algal biomass</td>
<td>- Nuclear instrumentation</td>
</tr>
<tr>
<td>- Low-cost anaerobic digester</td>
<td>- Nuclear power plants</td>
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<tr>
<td>- Hydrogen production from biomass</td>
<td>- Nuclear fusion reactors</td>
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<td>- Nuclear waste characterization</td>
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**DISTRIBUTION & CONSUMPTION**

**ENGLISH**

**REFRIGERATION AND HVAC SYSTEMS**
- Compressors
- Valves and capillary tubes
- Refrigeration cycle analysis
- Virtual household refrigerator
- Domestic and industrial air-conditioning
- Vapor compression heat pump as alternative heating
- Sprays/evaporative cooling design
- Fan performance analysis (virtual and tunnel)

**CONSUMERS IN THE ENERGY SYSTEM – SMART GRIDS**
- Smart grid architecture and big data
- Power systems design
- Power electronics and mechatronics
- Electrical power conversion and AC/DC grids
- Integration of new power sources: renewable power
- Study of demand response management schemes
- Advanced control of electrical systems

**ENERGY EFFICIENCY IN INDUSTRY**
- Saving energy through design
- Integration and intensification of processes
- Integration and circular economy in chemical processes
- Energy storage systems (heat storage tanks and accumulators, thermochemical storage)
- Heat recovery and alternative heating
- Heat exchangers

**ENERGY EFFICIENCY IN BUILDINGS**
- Bioclimatic architecture
- Energy-efficient illumination systems
- Building envelope, building insulation technologies
- Building energy management solutions

**FUEL CELLS & HYDROGEN**
- Modelling and control of systems based on proton exchange membrane fuel cell-based systems
- Fuel cell control laboratory, modelling and experimental characterization
- Fuel cell efficiency and durability analysis
- Ethanol reformers for hydrogen production
- Fuel cell systems controller design
- Fuel cell integration into vehicles
- Catalytic and photocatalytic production of hydrogen as a fuel for fuel cells

**ENERGY EFFICIENCY IN INDUSTRY**
- Saving energy through design
- Integration and intensification of processes
- Integration and circular economy in chemical processes
- Energy storage systems (heat storage tanks and accumulators, thermochemical storage)
- Heat recovery and alternative heating
- Heat exchangers

**ELECTRIC VEHICLES (EV)**
- Intelligent management of EV
- Modelling EV battery aging for second life business models
- Cooling of batteries
- Electric traction and mechatronics for EV
- Energy efficiency, industrial electronics and high voltage systems for EV
- Design of charging stations
ENVIRONMENT
RECYCLING, UPCYCLING, TREATMENT

GAS EMISSIONS AND AIR POLLUTION CONTROL
- Gas sensors and contaminant detection
- Modelling odor episodes and atmospheric quality
- Industrial emission assessment tools, systems and models
- Modelling, diagnosis and control of sources of air pollution
- Characterization and treatment of gaseous emissions
- Removal, filtration and/or valuation of air pollutants and gases (NH3, H2S, CO2, CO, VOCs and cinder, amongs others)

PLASTICS
- Recycling and recovery of plastic materials
- Plastic recycling by means of hyperspectral techniques
- Conversion of plastic waste (monomers) into new plastics
- Development in bioplastics and biocomposites

CLIMATE CHANGE MITIGATION
- Ecotechnologies and nature-based solutions
- Models and proposals for climate change mitigation
- Multilateral governance
- Global carbon budget and climate justice
- Advice on the Paris Agreement
- Life cycle assessment
- Green and circular economy

ORGANIC
- Characterization and composting of organic waste for agricultural recovery
- Valorization of incineration waste
- Recovery of bio-active components from food and agrowaste
- Sustainable management of cork waste generated in the cork industry
- Development of bio or synthetic organic waste to obtain new materials, for use in the construction industry, transport and packaging
- (Bio) processes of transformation of waste and organic by-products

ELECTRONICS
- Circular economy of digital devices
- eReuse: reuse of electronics to ensure final recycling
- Bioleaching of low-rank ores and e-waste for valuable metals recovery
- Research on the traceability of digital devices across their lifespan

OTHERS
- Co-gasification and pyrolysis of residual material (including municipal solid waste and forest waste)
- Construction and demolition waste management and recovery
- Mining, urban and industrial waste recovery
- Management, compaction and recovery of the waste process
ECOSYSTEM PRESERVATION

MARINE AND COASTAL ECOSYSTEMS
- Engineering and physical oceanography
- Port and coastal structures. Coastal zone management
- Morphodynamics and coastal processes
- Maritime research and experimentation wave flume
- Data acquisition system design and automation of marine system measurements
- Development of multifunctional sensors for in-situ monitoring of the marine environment
- Development of mobile and fixed ocean observing platforms

TERRESTRIAL ECOSYSTEMS
- Application technique of phytosanitary products to reduce the risk of environmental pollution
- Application technique for organic fertilizers to reduce environmental impact
- Efficiency in composting systems and optimization of agricultural productivity. Sustainable agriculture
- Studies to evaluate risk to human health and ecosystems
- Landslide risk management
- Ecosystem services and sustainable resource management

URBAN ECOSYSTEM
- Urban contaminants and the environment
- Green building architecture and materials
- Noise pollution

WASTEWATER TREATMENT
- Real-time control of sewage systems and wastewater treatment plants
- Natural low-cost bioprocesses for wastewater and sludge treatment
- Design of constructed wetlands for wastewater treatment
- Numerical simulation of bioprocesses to remove contaminants from wastewater
- Life cycle assessment and economic evaluation of products and technologies for wastewater treatment, sludge management and biogas production
- Use of cork to clean wastewater and produce electricity
- Urban and industrial wastewater treatments and related technologies

DRINKING WATER
- Real-time monitoring and operational control of drinking water systems
- Improvement in the efficiency of water use, energy consumption, water loss minimization and water quality
- Modelling and simulation of drinking water networks
- Optimization of water transport and distribution networks

ENVIRONMENTAL IMPACT AND TECHNOLOGICAL RISK
- Risk analysis in the process industry
- Wildland fires monitoring and prediction
- Compartment fires modelling
- Floods and flash-floods, forecasting and derived impact
- Ecotoxicology

ENERGY AND ENVIRONMENT

CONTACT INFORMATION
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