REINVENT ENGINEERING

CENTRALE NANTES

Ingénieur grande école | graduate programme

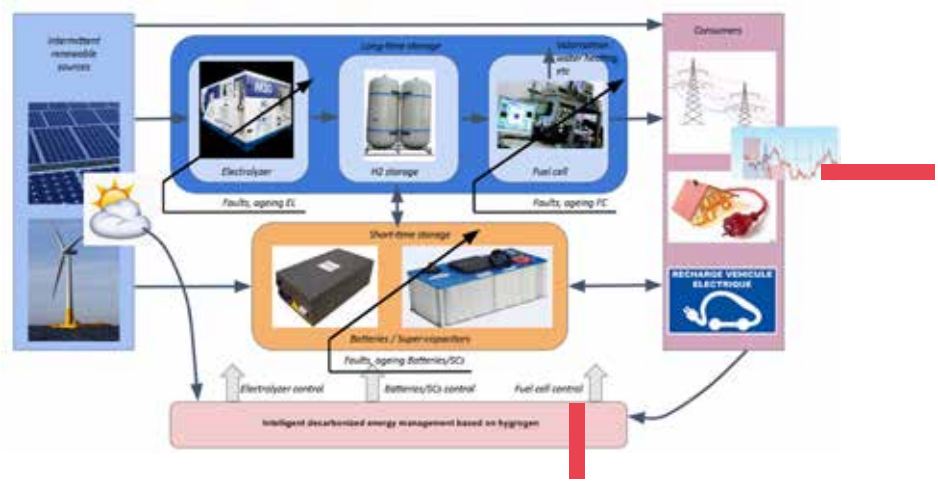
2ND AND 3RD YEAR SPECIALISATION

ENERGY CONTROL AND MANAGEMENT

[E-CONTROL]

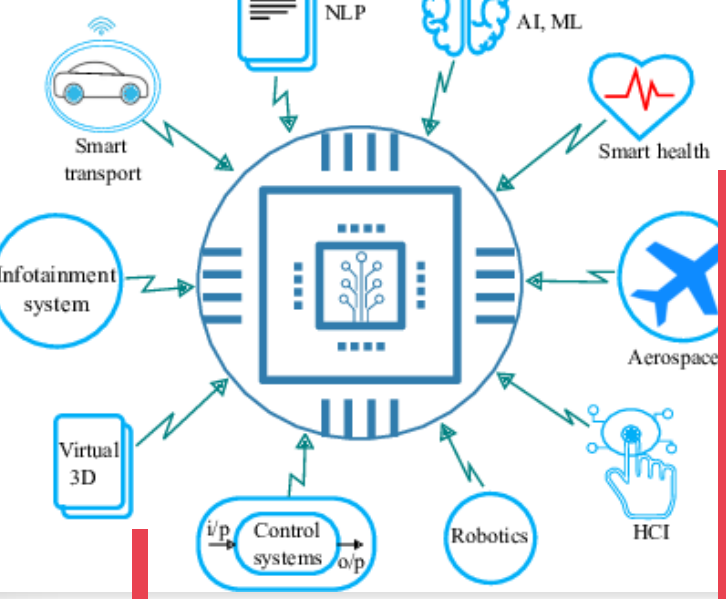
Reducing greenhouse gas emissions is a key challenge for our planet. We need to install decentralised renewable energy sources for stationary and/or embedded applications. The decentralisation of sources and storage leads to a complex energy system.

The Energy Control and Management specialisation offers a training programme that addresses the technological, economic and societal challenges related to the energy sector.



COURSE CONTENT

- Energy conversion chain
- Embedded computing
- Methodology of linear control
- Simulation of electrical systems
- Lowtech IoT
- Advanced control
- Observation and diagnosis
- Model checking & AI
- Project 1
- Smart energy management
- Role of electricity in energy transition
- Digital design on FPGA
- Energy Project
- Project 2
- Internship



EXAMPLES OF PAST PROJECTS

- Control of floating wind turbines
- Study and implementation of a MPPT controller for a photovoltaic generator
- Modelling and safe generation of an autonomous vehicle control application
- Advanced Control of a PMSG Wind Turbine Benchmark Implementation using Matlab/ Simulink/ OPAL-RT
- Evaluation of Time-Sensitive Networks
- Design of a sensor system for data acquisition on a racing yacht

INDUSTRY SECTORS

- Energy
- Transport
- Building
- Electronic systems

CAREER PROSPECTS

- Energy production, control and management
- Engineering and design
- Research and development

DOUBLE DEGREE PROGRAMMES WITH

- KTH Royal Institute of Technology (Sweden)
- Delft University of Technology (Netherlands)
- Politecnico di Milano (Italy)
- Keio University (Japan)

EXAMPLES OF INTERNSHIPS

- Project management for the installation of charging stations for electric vehicles (PROVIRIDIS)
- Study and implementation of an anti-collision and obstacle avoidance system to assist drone navigation (INTELLCAP)
- Study of a new underwater electro-communication system (Naval Group)
- R&D engineer in Electronic Warfare / Clustering algorithms (Thalès)
- Energy optimisation of electric vehicle charging stations (ENVISION)
- Analysis and simulation of real-time critical networks (Thalès)
- Development of a real-time estimator of electrical quantities (RTE)
- Power electronics simulation demonstrator (Siemens)
- Creation of performance analysis tools for SIMULIA applications (Dassault Systèmes)

TEACHING STAFF

HEAD OF SPECIALISATION:

Mohamed HAMIDA

CENTRALE NANTES LECTURERS:

Franck Plestan, Olivier H.Roux, Mikaël Briday, Malek Ghanes, Guy Lebret and Pierre-Emmanuel Hladik

CONTACT:
mohamed.hamida@ec-nantes.fr

graduate programme | Ingénieur grande école

GROUPE DES ÉCOLES CENTRALE