# EP2M

**ENERGY, PROPULSION, MATTER, MATERIALS**

**The EP2M Centre has developed high-level researches, labelled and funded by the PIA, in partnership with the automotive, aeronautics, energy and chemistry sectors. Based on this strength and on the close links between the academic and industrial partners, Normandy region relies on the EP2M Centre to structure local research and maximise the technology transfer.**

## SUBJECT AREAS

- Physics
- Physical-chemistry
- Material Sciences
- Fluid Mechanics and Energetics
- Nuclear Physics
- Electrical Engineering

## EP2M CENTRE KEY FIGURES

- **360** PhD students
- **215** HDR
- **18** Laboratories
- **1** LABEX: EMC3
- **4** Equipex: DESIR/GENESIS/S3/EQUIP@MESO
- **1** TGIR: GANIL
- **1** CARNOT INSTITUTE: Carnot ESP
- **1** PIA "Nanoelectronics": MEDILIGHT (MURATA Group)
- **2** "Industrial chairs": PERCEVAL (CORIA/SAFRAN)/NanoClean Energy (LCS/TOTAL)

## RESEARCH AREAS

**Industrial transition systems and processes**

The societal challenges of this area are energy mix and efficiency, smart electricity systems, renewable Wind and Marine energy, the factory of the future and advanced instrumentation.

**Propulsion**

Future energy vectors and fuels, thermal and electrical propulsion systems, decontamination, reduction in the environmental impact and health, advanced instrumentation. These are crucial areas of study for energy transition.

**Materials**

Materials for energy, new materials, improved material reliability and performance,
Material ageing process, reduction in the environmental impact.

**Matter**

Exotic nuclei and heavy nuclei, basic interactions, nuclear data for energy, security and health, ion-matter interactions.

All these themes are written into Normandy's Regional Guidelines for Higher Education, Research and Innovation (SRESRI-SI) and are mostly identified as part of the key 2020 technologies. The various members of the EP2M Centre offer a wide range of theme-based expertise and test resources, thus allowing for a coordinated approach to these guidelines.



## TRAINING

The research carried out in EP2M's laboratories is linked to a large number of tuition courses: IUT, Vocational degrees, sandwich courses, continuing training, Bachelor's and Master's degrees, Engineering diplomas and Post-graduate qualifications. The EP2M Centre works with the PSIME doctoral school: Physics, Engineering Sciences, Materials, Energy.

## PARTNERSHIPS

The EP2M Centre's strength is related to its close links with the socio-economic world, particularly local industrial sector. A wide range of collaborative projects with SMEs has helped to provide a response to societal issues, create a real value chain and strengthen ties between the academic and industrial worlds

### Competitiveness clusters

- Pôle MOV'EO
- Normandie AeroEspace
- Normandie Energies

### Federative research structures

- FR 3095 IRMA
- FR 3519 i-EPE

### Projects in collaboration with international laboratories

- H2020 HAOS (2015-2019)
- H2020 SOPRANO (2016-2020)
- H2020 TRANSAT (2017-2021)
- H2020 SOLSA (2016-2020)
- Interreg GenComm (2016-2019)
- COST XLIC (2013-2017)
- RIA OSIRIS (2015-2018)
- FP7 People - ARGENT (2014-2018)

### Associated International Laboratories

- LIA "Zeoliths" (LCS, China)
- LIA "ISTROF – Instability and Turbulence" (LOMC, Germany)
- LIA "LAFICS" Indian-French Laboratory of Solid State Chemistry (CRISMAT, India)

### Scientific Interest Group (GIS)

- GIS SUCCESS (intensive computing)

### Technology Research Centres (CRT)

- CEVAA
- CERTAM
- Analyses & Surfaces
- ISPA Alençon
- CORRODYS
- UMS CNRT-Materials

### Common laboratories resulting from collaboration with the industrial world

- CRISMAT / NXP
- GPM / EDF
- GPM / Manoir Industries
- GPM / VOLUM-e (additive production)

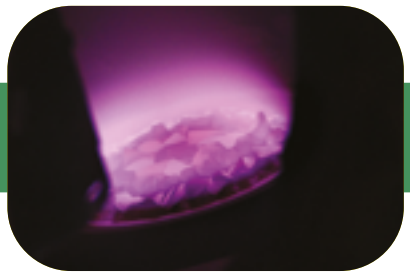
### Industrial chairs in collaboration with the industrial world

- UniLaSalle / AMBIOS (bioresources for construction and buildings)
- LCS/TOTAL

### Industrial partners

- Safran
- CNES
- EDF
- Total
- Despetele
- Zodiac Aerospace
- Technip
- Faurecia
- Airbus
- ATRON Metrology

The EP2M center's expertise in the frame of the TGIR GANIL, the 3 EquipEx (S3, GENESIS, DESIR), the EMC3 LabEx and the many collaborative projects with the industrial world are an evidence of the vitality of the Centre's research and its close proximity to the concerns of Normandy's industrial sectors.





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