



The ESP Carnot Institute gathers academic research laboratories of excellence and Regional Centers for Innovation and Technology Transfer focused on topics related to Energy and Propulsion Systems (ESP). Partnership is the key figure of the technological research approach of our institute. Our multidisciplinary helps meet your needs now and into the future by providing you with support and expertise for your research and innovation projects with one goal: contribute to the development of innovative equipments that use energy more efficiently and limit the impact on the environment.

www.carnot-esp.fr

OPTIMIZING ENERGY AND ENVIRONMENTAL PERFORMANCE: A NEED IN ORDER TO FACE SOME MAJOR ISSUES OF THE 21ST CENTURY

Strong synergies between various skills enabling a multidisciplinary approach

The ESP Carnot Institute provides its partners with expertise, know-how and relevant measurement means in the fields related to the optimization of energy systems and propulsion systems: from fluid mechanics and energetics to the study of the emissions and their environmental impacts, as well as materials, acoustics and embedded systems.

The ESP Carnot Institute teams are located in Normandy and they are used to implement joint projects while having complementary means. That enables them to offer a suitable answer to the industrial problems through an approach ranging from the most fundamental stage (from TRL 1-2 to TR 2-6) to the pre-competitive one.

The ESP Carnot Institute aims to successfully implement new transformation processes which require less energy and which are more reliable and environmentally favourable.

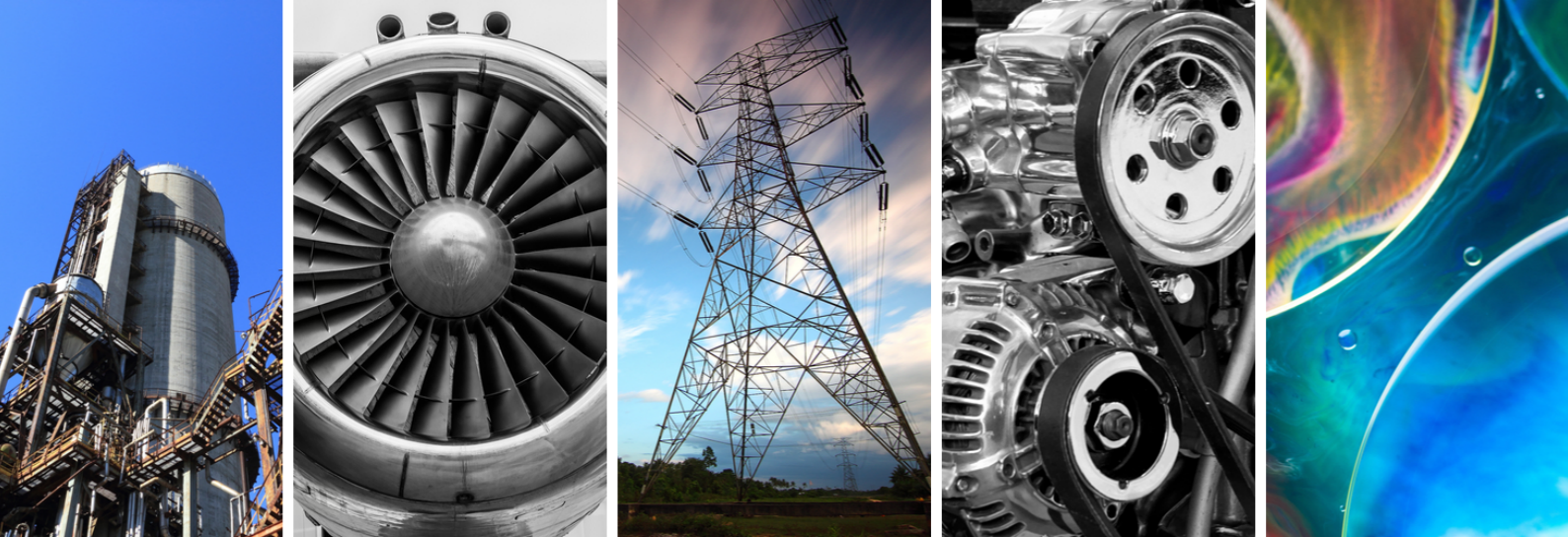


Target markets

- Automobile and mobility
- Aeronautics and Space
- Energy

A highly developed partnership research

- Most research activities of the ESP Carnot institute deals with industrial needs and is carried out in partnership with companies.
- The ESP Carnot Institute supports the regional Normandie AeroEspace and Energies Normandie networks.
- Its teams are research actors in a lot of French "pôle de compétitivité" clusters such as MOV'EO, Aerospace Valley, ASTech, System@tic.
- And are involved in European programs (Interreg, Horizon2020,...).

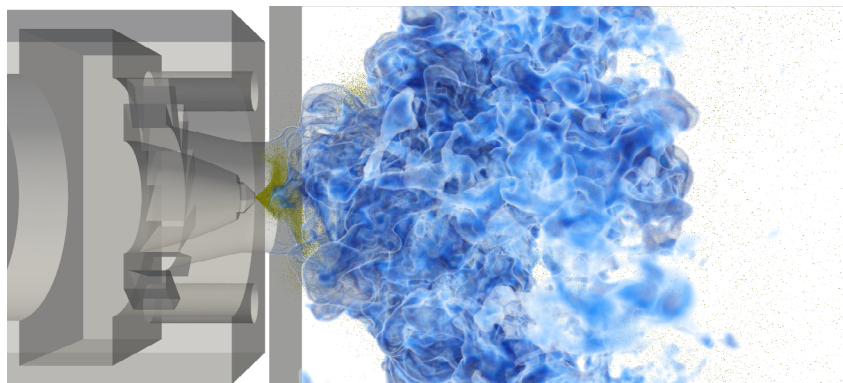


Know-how and skills

- Tests, analysis and research activities in the field of combustion, injection and plasmas
- Modelling and supercomputing in reactive and non-reactive fluid mechanics, heat transfer
- Micro and nanostructural characterization of materials
- Electromagnetic compatibility studies
- Diagnostics, control/command of complex systems
- Intelligent vehicle and transport systems
- Investigation and test for acoustic and vibration phenomena
- Engine tests
- Study of the emissions from energy systems (sources, impacts, toxicology)
- Scientific instrumentation
- Physical and optical measurements

PhD students financed by industry

- The ESP laboratories are very active both at a good national level and on the European stage.
- That enables them to develop sustainable contractual relationship through common thesis with industrial partners.
- This involvement in academic research ensures a large permanent potential of high quality human resources for the ESP Carnot Institute. .



Key figures

Permanent staff
(full-time equivalent): 334
PhD Students: 150

Partnership incomes
with industry: €14,4M
Global budget: €47,5M

Contacts

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