



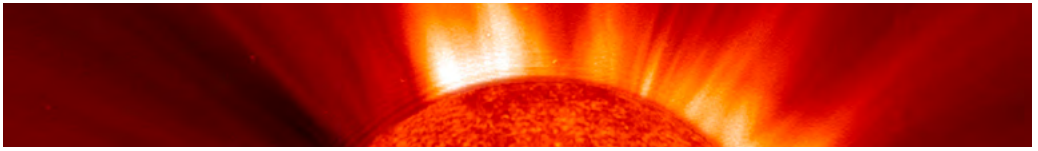
MASTER

ENERGY

EFEMO

Energy, Fluids, Environment, Optical Metrology
Option Energy, Fluids, Environment





ADMISSION CONDITIONS

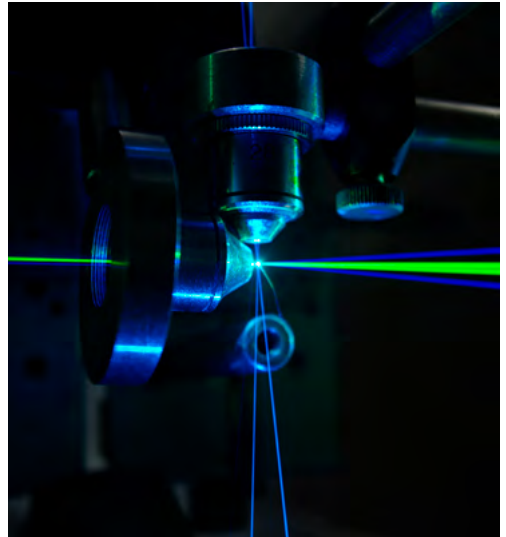
The required level is either M1 (University degree and/or School of Engineering), or any other diploma considered as equivalent by the Master Jury.

The initial preparation includes: fluid mechanics, thermics, metrology, energy studies, computational fluid dynamics.

Master 2 EFEMO represents the natural follow-up of the M1 EFEMO at the University of Rouen. Nonetheless, selected students from INSA Rouen, as well as other universities are encouraged to apply. 'Double diploma' facilities are possible, i.e. students only follow three major courses: 'Energy', 'Metrology' and 'Complex fluids'.

Energy: the future

Energy and environment-related domains undergo strong transition, because of the diminishing amounts of fossil fuels and the continuously increasing pollution of the atmosphere and waters. In this context, awareness of the actual state of the art and especially new solutions to future energies are required. This Master fosters your capacities to understand how energy is produced and consumed today on our Planet, and helps you to become the researcher and research engineers who will propose new, innovative solutions for different, clean energies.

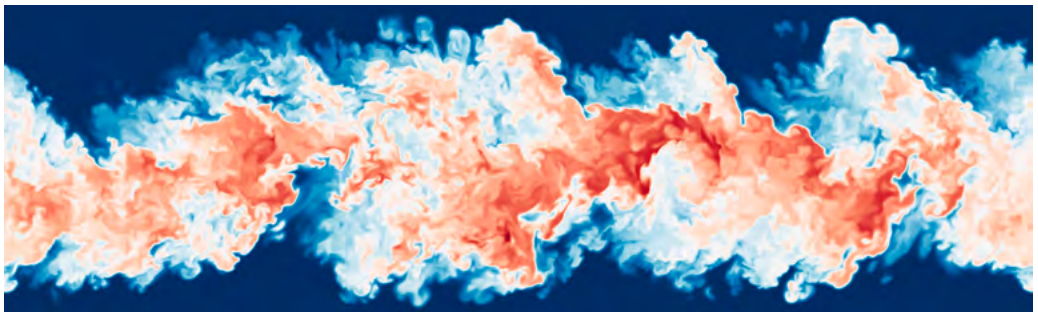


Objectives

This Master aims at educating future employees for research laboratories, as well as Research and Developments departments of industries. Our students will be educated with a research vision, going far beyond simply using 'already conceived methodologies'. They will be well-thinking people, positive-thinking people, able to understand processes and physical phenomena, and thus to propose future ways to produce clean energy, both from thermal sources or renewable (marine/wind energy). Our Master is an excellent starting point for a PhD.

Well-balanced courses

This Master is composed of basic courses (fluid mechanics, thermics, reactive flows), respecting a well-balanced equilibrium between experiments, modelling, simulations and theory. These aspects are tackled through magistral courses, tutorial and laboratory training.



EFEMO

M1

- Technics and methods (4 CE)
- Applications (6CE)
- English, communication and professional advices (8CE)
- Fluid Mechanics (8CE)
- Energy transfers (8CE)
- Acoustics(4CE)
- Images processing (1CE)
- Optics, lasers and metrology (5CE)
- Mathematics and numerical analysis (11CE)
- Internship in laboratory (5CE)



EFEMO - EFE

M2

Common core

S1

- Fluid Mechanics, Turbulence (36h- 4 CE)
- Energy 1 (36h - 4 CE)
combustion, chemical kinetics, energy transfer and radiation
- Optics (36h, 4CE)
laser and applications or optical signal processing or optical setups
- Human culture (36h, 3CE)
English, Business aspects, Career Advices.

Specialization: Energy, Fluids, Environment

- Non-equilibrium and radiation (30h, 3CE)
- Energy 2, advanced combustion (30h, 3CE)
- Complex flows, atomization and sprays (30h, 3CE)
- Metrology of reactive flows (30h, 3CE)
- Numerical simulations of fluids and systems (30h, 3CE)

S2

- Internship 5 months (27 CE)
Internship in a research laboratory or Research & Development department of an entreprise.



Partner Laboratories

CORIA Rouen, LOMC Le Havre, Air Liquide, CEA, IFPEN, EDF, GDF, ONERA, PSA, Renault, SAFRAN etc.

CAREER OPENINGS

Career prospects concern: transports (automotive, aeronautics and aero-spatial), energy production, industrial combustion, production and energy consumption, as well as environnement-related jobs.

HEADS OF DEPARTMENT

Master 1 EFEMO

Arnaud Bultel

Master 2 EFEMO EFE

Ammar Hideur

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www.univ-rouen.fr

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