

MASTER DEGREE

# ENERGY

## ENERGY Master Degree Presentation Thermal Energy Engineering Track (ITE)

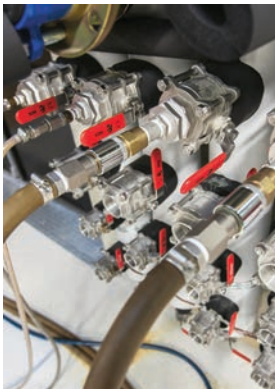
ENERGY ITE is an EIPHI graduate School Master focusing on Research & Innovation in the field of thermal systems optimization and management. Experimentals technics and numerical simulations of multiphysics systems are at the heart of the program. At the end of the training you obtain an expertise in Heat Transfer, Fluid Mechanics and Thermodynamics of renewable energy systems.

Like all the Master Degree of EIPHI Graduate school, this master is designed for R&D engineer positions in big international companies or smaller High-Tech industries but can also be the springboard for a career as Researcher or Professor.

Energy Master Students can pursue their studies with a Ph.D. in the Energy Department of Femto-St Research Lab or Belfort's Fuel Cell Laboratory FC Lab presented thereafter.

### PROGRAM (Belfort Campus)

Y E A R  1	Core Courses with Research Project 24 ECTS		Crossdisciplinary Courses 6 ECTS
	Core Courses with Research Project 18 ECTS	Soft Skills Courses 6 ECTS	Crossdisciplinary Courses 6 ECTS
Y E A R  2	Specialized Courses with Research Project 24 ECTS		Soft Skills Courses 6 ECTS
	Research Internship 30 ECTS		



#### Core Course List: 42 ECTS

FLUID DYNAMICS  
HEAT TRANSFER & FLUID FLOW  
THERMAL MACHINES  
ELEMENTARY HYDROGEN ENERGY & ENERGETICAL EFFICIENCY

THERMAL SYSTEMS  
ENERGY PRODUCTION  
THERMAL EFFICIENCY  
RESEARCH PROJECT

#### Cross-disciplinary Course List: 12 ECTS

COMPUTATIONAL TOOLS  
MATHEMATICAL TOOLS  
FOR ENGINEERS ...

#### Specialized Course List: 24 ECTS

FUNDAMENTAL HYDROGEN ENERGY & ENERGETICAL EFFICIENCY  
ADVANCED HYDROGEN ENERGY & ENERGETICAL EFFICIENCY  
ADVANCED THERMAL SYSTEMS  
NUMERICAL SIMULATION  
ADVANCED RESEARCH PROJECTS

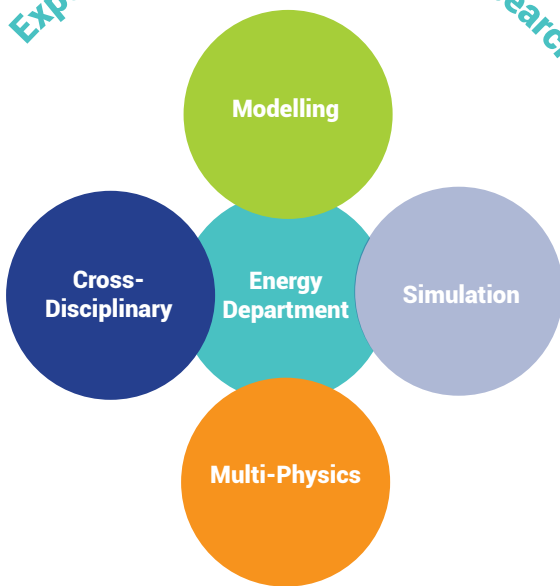
#### Soft Skills Course List: 12 ECTS

ENGLISH,  
ENTREPRENEURSHIP,  
INNOVATION MGT,  
RISK MGT...

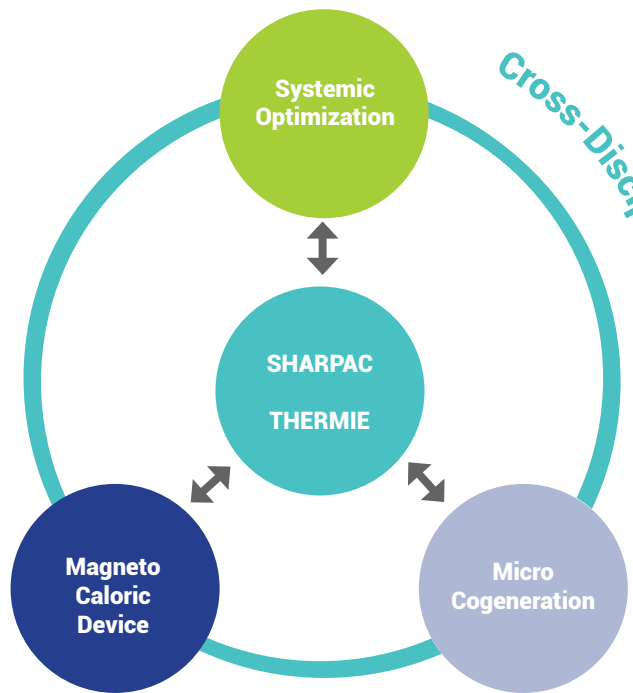
RESEARCH

# ENERGY DEPARTMENT

Experimental & Theoretical Research



Cross-Disciplinary Research



## 2 Research Fields

### THERMIE :

Thermal Science

- Metrology and Instrumentation in Fluidics and Thermal Science
- Thermal Science in energy systems
- Heat engines
- Complex flows

### SHARPAC :

Hybrid electric systems, Electric Actuators, Fuel cell systems

- Static converters
- Fuel cell systems
- PHIL: Power Hardware in the Loop
- Control and Management of Energy
- Electric actuators
- Micro-grids

