

Innovative methods for companies and society

The concept of research “orientated” towards companies and society is at the base of the creation of the M.I.N.E.S Carnot Institute. Composed of Armines and 8 engineering schools, it is built on a multi-disciplinary academic foundation enhanced by a 50-year heritage of providing solutions to meet the needs of the socio-economic players.

Truly inspirational for companies seeking innovation, the M.I.N.E.S Carnot Institute draws its strength from its motivation to break down scientific barriers.

Apart from its wide range of skills, the community of 1,700 research staff also has experience in technology transfer.



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Supporting change with innovation

5 scientific skill areas

- ➔ Earth and environmental sciences
- ➔ Energy and process engineering
- ➔ Materials science and engineering
- ➔ Applied mathematics, computer science and automation
- ➔ Economy, management and society

A customisable offer

A variety of structures

- Direct research and study contracts
- Framework contracts
- Collaborative research projects
- Technical services / expertise contracts
- Operating licences
- Sponsorship chairs, industrial chairs
- Continuing education
- Industry thematic days

A variety of means

- Provision of researchers
- Recruitment of PhD students
- Scientific expertise
- Technological platforms

3 thematic areas to tackle the socio-economic challenges

Issue / Subject	Reducing dependence on raw materials	Limiting global warming	Including sustainable development in the economy	Adjusting to the speed and expansion of economic development
Ecological transition				
Energy transition				
Innovation process				

Distribution of direct contractual activity



75% major groups
25% SMEs & mid-cap firms

New PhD students per year



300

New business start-ups per year

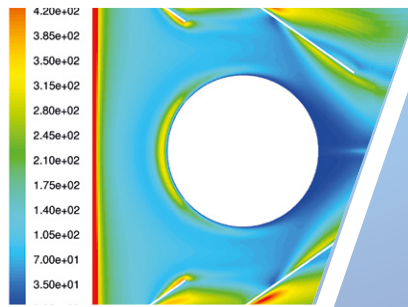
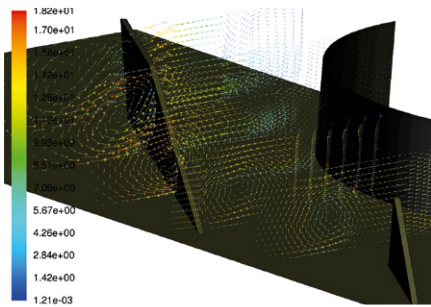
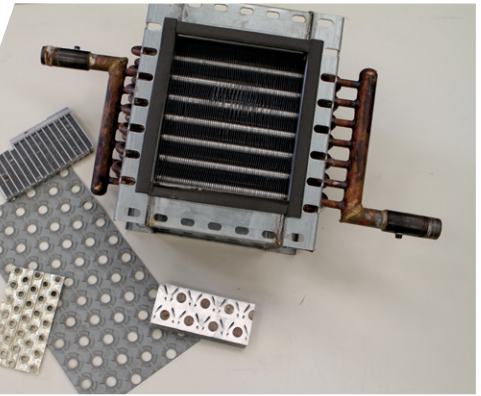


25

Publications per year



1 150



Design of innovative heat exchangers for high performance processes in automotive industry. By MINES Douai in partnership with Valéo, GEA, Technip and Wieland.

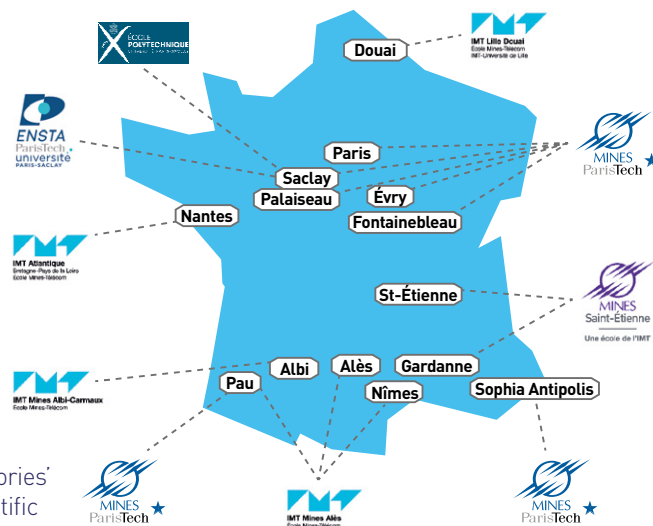
Geographic location of the school laboratories members of the M.I.N.E.S Carnot Institute.

Innovation with SMEs & mid-cap firms

The M.I.N.E.S Carnot Institute is partnering 6 of the 8 actions which have been selected under the "Fashion & Luxury" sector call for projects launched in 2015 by the Commissariat-General for Investment.

The aim is to strengthen the laboratories' ability to take ownership of the scientific obstacles raised by the SMEs & mid-cap firms operating in the following economic sectors:

- Fashion and Luxury (coordinated by M.I.N.E.S)
- Energy
- Extractive industries
- Mechanical engineering
- Aircraft industry
- Healthcare & Drugs



Research staff (full-time equivalent): 1 754 including PhD students: 813

Partnership incomes with industry: 34 M€
Global budget: 108 M€

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CARATS "Fashion & Luxury" sector

5 identified challenges:

- Sustainable development
- Design and engineering
- Brand image and identity
- Luxury of the future
- Innovation and competence management



Aircraft industry



Fashion and Luxury (coordinated by M.I.N.E.S)



Energy



Extractive industries



Healthcare & Drugs



Mechanical engineering



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