



**MINES
Saint-Étienne**

Une école de l'IMT



Mines Saint-Étienne

Actor in the industry
of the future



**INSPIRING
INNOVATION**
SINCE 1816

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Welcome

Since its creation in 1816, the École des Mines de Saint-Étienne has displayed an extraordinary spirit of innovation that we continue to cultivate every day 200 years later, to make a School that now has its feet firmly in the 21st century. Our School is proud of its history and continues to develop its expertise in areas of excellence and the avant-garde; our School is constantly renewing itself and adapting, whilst continuing to serve its public and its partners.

It is both deeply anchored in its home territories: Saint-Étienne and Gardanne, and resolutely international. Reflecting society's challenges, economic and others, our School offers training courses of great variety and top-flight academic research focused on the real economy, which is attracting the interest of more and more companies. Business is at the heart of our concerns, since the School plays an active role in economic development, employment and competitiveness policy.

Finally, the School continues to work to forge the necessary ties between society and the sciences and industry; by enriching its offer in scientific, technical and industrial culture for schools and the general public.

Welcome to Mines Saint-Étienne!

Pascal RAY

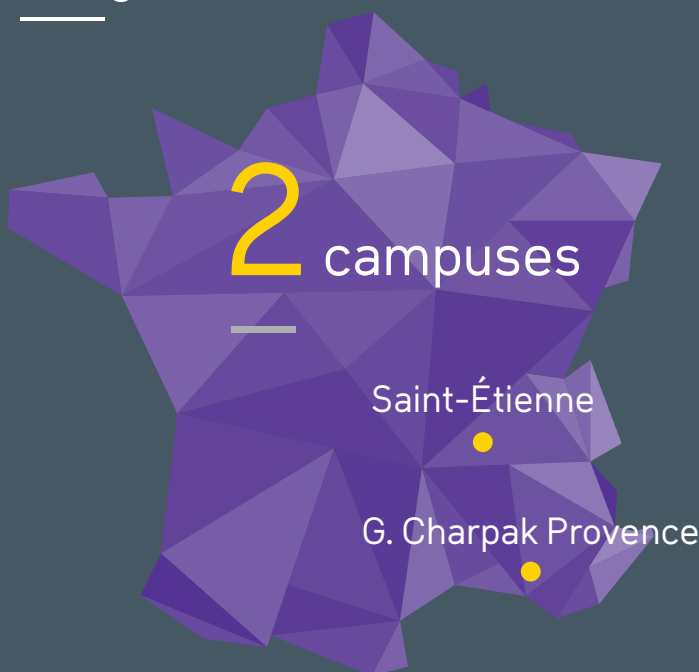
Director of Mines Saint-Étienne



**INSPIRING
INNOVATION**
SINCE 1816

MINES SAINT-ÉTIENNE

in figures⁽¹⁾



110 international agreements

16 Masters courses **7 in taught in English**

189 doctoral theses supervised

402 A team of people including **62% scientists**

66 holders of an HDR⁽²⁾

16,5% of staff of other nationalities

454 part-time lecturers from the business world

over 1,700 students

350 partner firms

6 engineering diplomas
4 sandwich courses

35% foreign students

30% students with bursaries

A budget of million Euros incl. **42% internal resources**

6,7 million Euros spent on research (excl. investment)

(1) Figures at 1/01/2016 _ (2) Accreditation to supervise research

Mines Saint-Étienne

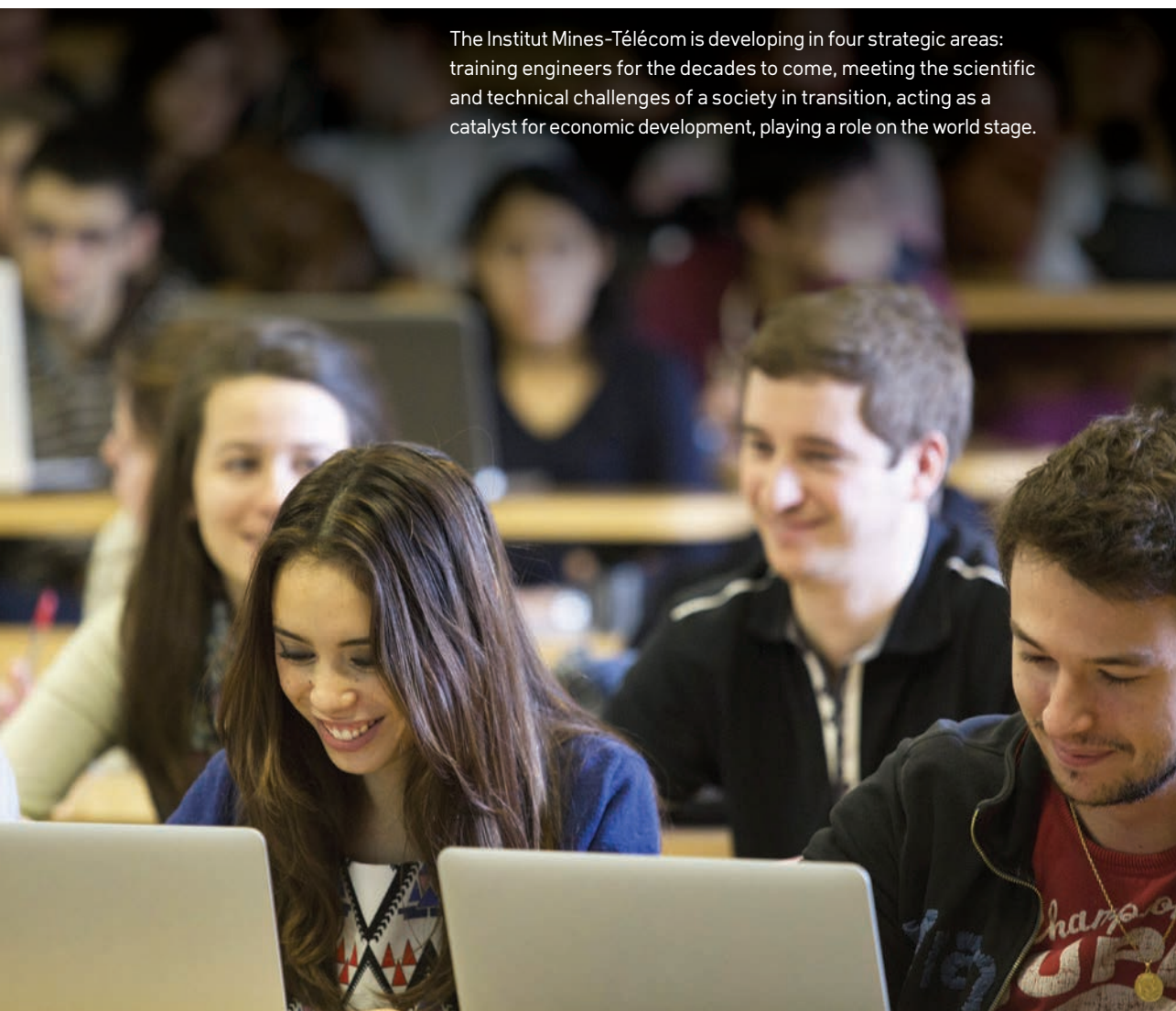
member of the Institut Mines-Télécom



The Institut Mines-Télécom, a body under the responsibility of the ministries in charge of Industry and Digital Technology, is a public higher education and research institution for innovation, in the engineering and digital fields. It is a grouping of 10 "grandes écoles", engineering and management school, strategic partners and affiliated establishments created jointly with universities and companies.

It represents 13,200 students including 1,700 PhD students; 80 companies were incubated by the Institut Mines-Télécom Schools in 2014.

The Institut Mines-Télécom is developing in four strategic areas: training engineers for the decades to come, meeting the scientific and technical challenges of a society in transition, acting as a catalyst for economic development, playing a role on the world stage.



The 4 missions of Mines Saint-Étienne

1

To train engineers and researchers
by developing excellence in every diploma

2

To develop research at a high academic level,
driven by industrial applications
and issues

3

To play an active role in forging companies' economic,
employment and competitiveness policies

4

To establish close ties between society and industry;
to develop scientific, technical and industrial culture
for the widest possible public



Structural projects

Manufacture du futur: pilot production line

***Manufacture du futur* supports SME/SMIs and intermediate-sized enterprises (ISEs) in their industrial, digital and energy transition in an approach that is part of the *Industrie du futur* programme in which the Institut Mines-Télécom is a member.**

Installed in a 700 m² building on the Industrial Campus, this production line, which is intended to help accelerate the industrial transition, will implement metal additive manufacturing and subtractive manufacturing.

Joint project between 5 higher education institutions (Mines Saint-Étienne, Télécom Paris Tech, the ISTP, Télécom Saint-Étienne, Sigma Clermont), with the participation of a number of technical centres (CETIM, 2MATech (affiliated with Sigma Clermont), CEA Tech, a professional body, the IUMM) and supported by several partner companies: Fives Michelin Additive Solutions, Dassault Systèmes and Siemens.

Manufacture du futur is a global solution for companies that are taking into account the human, operational and environmental implications of disruptive innovations. It mainly serves SME/VSE/SMIs whose core business involves transforming materials into products.

Manufacture du futur consists of three "bricks": the pilot industrial platform based on additive manufacturing (the industrial transition accelerator), support for SME/VSE/SMIs in collaboration with dedicated regional actors and staff training.

L Cube: living and learning lab

Mines Saint-Étienne is setting up collaborative innovation centres on both its campuses: these are places for mixing, creativity, experimentation and cross-fertilisation between students, academic bodies, industrialists and economic actors.

A place that provides space for innovation and is designed to facilitate contacts and the emergence of collaborative, creative projects, L Cube includes in the heart of the project the dissemination of scientific, technical and industrial culture thanks to the competencies of La Rotonde. The L Cube is at once a place where people can be together and dialogue, a multifunctional document resource centre 2.0 and a centre for creation and innovation in teaching. On the Gardanne campus, the CPER ID-Fab project will be supporting the L Cube, offering a space for innovation in teaching for the ISMIN course, *La Rotonde* scientific culture centre in conjunction with the city of Gardanne and a platform for prototyping connected objects, in conjunction with the research laboratories of the CMP, the Micro-PackS platform and the EPRD.

Mines Saint-Étienne,

A fundamentally international School

THE SCHOOL HAS HAD AN
INTERNATIONAL REACH
SINCE IT WAS CREATED.



The whole School has gone international!

An international outlook has been a priority throughout the School's history and it permeates every level of what we do: our courses, our research, our university and industrial partnership.

From the strategic point of view, the School has recently chosen to concentrate its efforts on comprehensive partnerships that cover training; research, industrial cooperation and scientific culture with the best universities in the world.

Every year, about five of our lecturer-researchers take part in long-term mobility schemes, which enables us to develop wide-ranging collaborations in the research field with universities such as Yale, Berkeley, Princeton, McGill, PolimiMilano, EPFL...

To support research and the mobility schemes, the School participates in and coordinates numerous international and European projects. It has been awarded 3 ERC (European Research Council) grants of several million Euros over 5 years.

Our students are all international...

Over 110 exchange agreements including 20 dual diploma programmes with universities, most of which are top of the league tables in their countries, provide for student exchanges.

All engineering students spend a period abroad, usually about 10 months, in a company or university. Support for our students going abroad is provided by the Auvergne-Rhône-Alpes and Provence-Alpes-Côte d'Azur regional authorities, by Europe, by different bi-national programmes and by the Foundation.

At the same time, 35% of our students, all carefully selected and of very high calibre, are from overseas. Among our PhD and masters/engineering diploma students, more than 30 nationalities are represented. The system in place for welcoming and hosting overseas students is particularly appreciated, with a buddy scheme and a fun freshers' weekend out in the country organised by the students and permanent staff at the school. Continuously improving our hosting of our international students is one of our priorities.

To attract as many very good international students as possible and stand out among other institutions, the School offers 7 masters courses taught in English in the subjects where it excels.

And so the School and its students are undeniably bathed in a multicultural atmosphere. With the outcome that, in the end, virtually all the School's graduates will work in an international context. 25% of them will find a job abroad or work abroad at some stage in their career.



Top class training

THE SCHOOL TAKES ACCOUNT OF AND STRIVES TO ANTICIPATE THE DIVERSITY AND VARIABILITY OF THE DEMAND FROM COMPANIES IN ORDER TO OFFER A WIDE RANGE OF CLEARLY IDENTIFIED TRAINING COURSES.

A training offer that reflect the diversity of the business world

Engineering training

The School trains three types of engineers at its two campuses, Saint-Étienne and Georges Charpak Provence:

- _ generalist engineers, known as *ingénieurs civils des mines* (30% of graduates),
- _ new technologies engineers, *ISMIN engineers* (15%),
- _ operational engineers, trained on sandwich courses whilst being paid by a salary by a company (55%).

Training through research

The quality and potential of the School's laboratories enable it to offer sixteen research-based masters courses and to train, in ten different specialist areas, PhD students mainly destined for a career in industry.

Vocational training

The School also offers shorter vocational training courses, also leading to a qualification, as part of a lifelong learning approach: specialist masters, BADGE (the Grandes Ecoles assessment of competency scheme), etc.

A strong principle: student-focused education

- _ Personal educational relationships, inspired by the *compagnonnage* model,
- _ A skills acquisition-based approach,
- _ Teaching to encourage students to be active and to learn responsibility,
- _ Exposure to research and innovation for all students,
- _ A strong emphasis on training the "person" and being open to business, entrepreneurship and the wider world.



ICM training, the *Ingénieur Civil des Mines* *Challenge yourself, design the future*

Mines Saint-Étienne has been training *Ingénieurs Civils des Mines* engineers for almost 200 years. It has always anticipated industrial and societal changes to prepare its students for the constantly changing demands of positions of responsibility in companies and the economic world.

Who are *Ingénieurs Civils des Mines?*

An *Ingénieur Civil des Mines* is at once:

- _ An enlightened and responsible manager, solidly anchored in the grass roots of the company and society,
- _ An innovative and committed leader prepared for a globalised, constantly evolving context,
- _ An inter-disciplinary engineer capable of both managing complexity and, if necessary, handling a highly specific subject at expert level.

Specific course features

- _ An integrated approach to science and management
- _ An entirely individualised course: 16 choices to make
- _ 65 coherent professional development pathways
- _ 7 spent abroad, on average
- _ 1 project that recurs every semester: community-based, innovation-entrepreneurship, research...
- _ Openings: all sectors and all types of position

Recruitment

Joint "Mines-Ponts" competitive exam

ISMIN training, Engineer specialising in Microelectronics and Information Technology

To take up the challenges of the new and digital technologies, modern companies need, more than ever, engineers with an enquiring mind, who are enterprising, creative and capable of transforming ideas into practice. It is these engineers that Mines Saint-Étienne aims to train with its ISMIN diploma.

Who are ISMIN engineers?

The ISMIN course is based on the acquisition of a dual skill set in microelectronics and information technology, with a strong orientation towards research and innovation. ISMIN engineers offer a much sought-after profile, with their capacity for adaptation, their international culture, their aptitude for team-working and their development potential, in fields ranging from high-level IT to nanotechnologies.



Specific course features

- _ 4 original and innovative 3rd year pathways: technologies & supply chain, electronics for energy, biomedical devices, mobility & safety
- _ Project-based learning, in tune with their future professional practice
- _ At least 3 months spent abroad
- _ International High-Tech Campus, in the heart of Provence, with many laboratories and companies (technology platforms, startups)
- _ Openings: studies, R&D, product engineer, projects in new technologies

Recruitment

Joint "Mines-Télécom" competitive exam



Sandwich engineering courses: IGI, IGIN, IVE, ISEE

Developed in collaboration with the ISTP (*Institut Supérieur des Techniques de la Performance*), a strategic partner of Mines Saint-Étienne, these courses meet the expectations of the economic world. They represent an original model for promoting excellence, in which the company is both an actor in and beneficiary of the training.

Who are sandwich course engineers?

4 engineering diplomas are offered through the apprenticeship and continuing education channels:

- _ Industrial engineering (GI)
- _ Nuclear installations engineering (GIN)
- _ Waste-to-energy engineering (VE)
- _ Embedded electronic systems engineering (SEE)

Trained through a sandwich course model through original and ambitious learning methods, which give him/her the capacity to model the company's problem, the sandwich course engineer acquires a strong results- focused professional culture. He/she is quickly operational in a job, ready to imagine and implement innovative, durable and progressive solutions.

Specific course features

- _ Situational learning (2/3 of course time in the company, 1/3 at the School)
- _ Dual tutoring (academic and in-company): all the academic tutors are also engineers who have worked in industry themselves
- _ Multi-disciplinary scientific training, emphasising research and innovation
- _ An international component, with all students obliged to spend a period abroad
- _ Openings: depending on specialist area, 40% of graduates remain in their company

Recruitment

Application process, must have a 2/3-year post-baccalaureate diploma in an industrial, technological or equivalent field (e.g. DUT, BTS, undergraduate degree).

Masters courses

16 masters including 7 taught in English

Chemistry and Materials Science

- _ Materials Science Engineering

Design

- _ Prospective Design

Industrial Engineering

- _ Advanced Industrial Engineering Methods (MAGI)

Process and Bioprocess Engineering

- _ Process Engineering and Industrial Energy Efficiency

Health Systems Engineering

- _ Cell and Tissue Engineering

Management and the Environment

- _ GEOSPHERES (Geography - Human/Environment Spaces - Resources)

Information Technology

- _ Data and Connected Systems (DSC)
- _ Cyber-Physical Social Systems (CPS2)
- _ Machine Learning and Data Mining (MLDM)

Applied Mathematics, Statistics

- _ Maths in action

Mechanical Engineering

- _ Tribology and Surface Engineering (TIS)
- _ Mechanics of Materials and Processes (MMP)

Optics, Imaging, Vision, Multimedia

- _ Advanced Imaging and Material Appearance (AIMA) : Metrology and Modelling
- _ Master Labex SISE (Surface and Interface Science and Engineering)

Risks and the Environment

- _ Industrial and Urban Environmental Sciences (SEIU)

Microelectronics

- _ Micro & Nanoelectronics (MINELEC)

2 specialist masters degrees

- _ Specialist masters **in Energy Efficiency in Building Renovation**
- _ Specialist masters **in Security of Integrated Systems & Applications**

See all the details on our masters on

www.mines-saintetienne.fr



**A COMMON THEME
RUNNING THROUGH
OUR RESEARCH
AND TRAINING ACTIVITIES:
ANTICIPATION
AND ACTION.**



Listening and anticipating

As part of a mission to monitor and listen out for what is happening in the economic world, the School takes part, alongside numerous institutions, at local and national level (clusters, competitiveness "poles", professional and industry bodies, Instituts Carnot, etc.) in different actions:

- _ To identify the skills that will be needed by economic actors in the future and to formulate responses by designing training courses adapted to those needs
- _ Orienting its research fields to anticipate on tomorrow's economic markets.

Organising and acting

Qualified multi-disciplinary staff maintain close relations with companies (SMEs, intermediate-sized enterprises, key accounts) to:

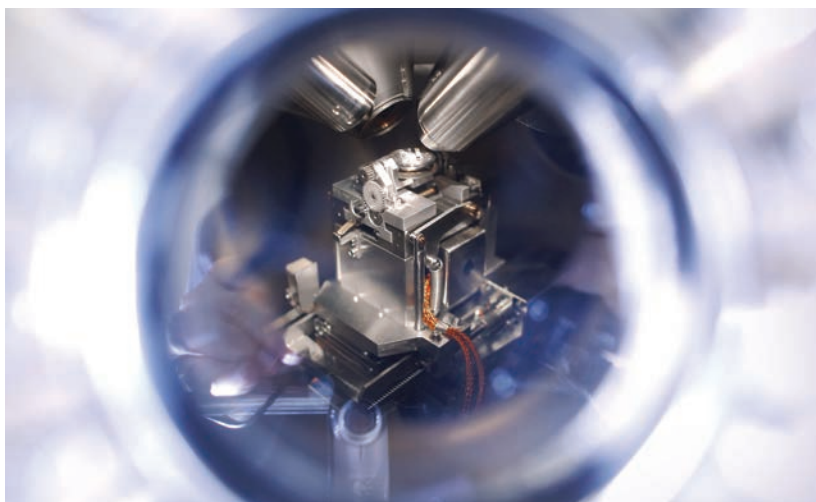
- _ Provide appropriate solutions from the economic and scientific point of view (training placements, sandwich courses, company-based (CIFRE) or vocational PhDs, industrial projects, research contracts, industrial chairs ...),
- _ Bring different actors together on specialist subjects by organising events (symposiums, seminars, etc.),
- _ Create links between the world of business and the students and enable them to discover different jobs and sectors of industry (careers days, forums, etc.),
- _ To develop entrepreneurship and provide technology maturation support for startups and their projects (R&D partnership centre).



Research, innovation and entrepreneurship at the School

The Research and Innovation Department (DRI) coordinates the actions undertaken by the School's five Training and Research Centres, drives the School's main orientations and joint projects in research, innovation, research in partnerships, training in and through research in coordination with the training department and the dissemination of scientific and technical culture with La Rotonde.

The DRI provides the coordination between the School's research and technology policy and that of the supervisory powers it is accountable to and its strategic partners: Institut Mines-Télécom for general research and innovation policy and the major social, economic and international challenges, ARMINES for research in partnerships and the Institute Carnot M.I.N.ES, University of Lyon and Aix-Marseille University for the PhD, Masters and "excellence projects" that come under the national Future Investments Plan (PIA).





Created on the Georges Charpak Provence campus, the Research and Development Partnership Centre (EPRD) has set up an original model for transferring the results of research to the economic world. More than a simple "incubator", it offers, thanks to its proximity with the School's training and research centres, an environment conducive to technology maturation on the entrepreneurial projects selected. The result is a remarkable survival rate for the companies that the EPRD has hosted since 2006. The EPRD has also been developing on the Saint-Étienne campus since 2015.

Finally, the DRI offers coordination and support for the projects of Centres for Teaching and Research in four strategic areas:

- _ Industrial Property, in close partnership with ARMINES and the Institut Carnot M.I.N.E.S.,
- _ Relations with industrial "key accounts" and the setting up of Industrial Chairs in coordination with the Mines Saint-Étienne Foundation,
- _ Organisation of international, and especially European, R&D projects with the internationalisation department,
- _ The Auvergne-Rhône-Alpes regional authority's "Regional Innovation and Smart Specialisation Strategy", the Provence-Alpes-Côte d'Azur region's "Regional Innovation and Internationalisation Economic Development Plan", and the Saint-Etienne Métropole urban district's "Integrated Innovation and Digital Technologies Scheme" communities.

**TOP-FLIGHT ACADEMIC
RESEARCH DRIVEN
BY INDUSTRIAL ISSUES**

The Centre for Materials and Structural Sciences

The SMS centre focuses its research on relations between processes, microstructures and properties of materials.

Our attempts to master these relations in metal alloys, ceramic materials and composites implies a multi-physical and multi-scale modelling approach which forms the basis of the "Materials by design" concept.

The physical, physical-chemical and thermo-mechanical models, sometimes combined, are the result of experimental observations on the nano, micro and mesoscopic scales, thanks to state-of-the-art experimental equipment available on our instrument platforms. Initially focused on microstructure-property relationships, these models are today being developed so that we can get a better understanding and command of several manufacturing processes: sintering, ceramic microwaves, direct production of composites made from carbon fibre or biosourced materials and polymer, ceramic and metal additive manufacturing.

The modelling approach fits in naturally with the main centres of interest: manufacturing processes, resulting microstructures and structural and functional properties of materials.

Its intrinsic complexity, coupled with the varied geometries arising out of industrial applications, implies the virtually systematic use of digital simulation. All the research themes are driven by a demand from industry in the energy, transport, industrial design and creation sectors, giving them high visibility and recognition at national and international level.

They rest on a continually developing pool of some thirty PhD theses, half of which are in-house resources.

They are structured in the teaching and research centres around groups of 3 to 5 lecturer-researchers supported by engineers and technicians.

This structure allows for a high degree of responsiveness faced with emerging technologies and new societal challenges seen from the angle of materials, as can be seen from some of our recent success stories: a teaching and research chair with a genuinely international reach in direct manufacturing processes, a patent on a new class of alloys, design of new functional surfaces.

The SMS centre is a driving force in structuring research at regional level as part of the Lyon-Saint-Étienne federation, the ManuTech initiative and the RAFAM network on metal additive manufacturing, the latter being reason for our strong involvement in the School's *Manufacture du Futur* project.

Our association with the CNRS within the Georges Friedel Laboratory as well as the most recent HCERES evaluation are evidence of the high level of academic excellence in our research fields.



SPIN

The Centre for Industrial and Natural Process Sciences

The purpose of the SPIN is to contribute to clean, safe, efficient production. A large part of the SPIN centre's activities concern processes for the energy and environment sectors, but also various industrial processes with the aim of reducing their energy consumption and environmental impact. Mobilised on the unifying theme of the energy efficiency of processes, the SPIN centre is also fully involved in the issues around the industry of the future.

It is structured into three departments which develop activities in the field of processes for the environment and georesources, processes for using powders, processes for transforming solids and instrumentation and sensors.

The Environmental and Georesources

Processes department conducts research on the general issue of sustainable industrial production that consumes low quantities of resources (water, energy, raw materials). This department brings together competencies in mineral chemistry, crystallisation/dissolution and simulation, for the implementation of chemical processes, in the production and mining fields.

The two areas of application are: "Crystallisation processes" and "Geoprocesses".

The Granular Media Application

Process department develops activities on the development, formulation and uses of powders in an approach that combines experimentation and modelling. Two themes are dealt with: "Physics and geometry of granular media" and "Powder technology".

The Solids Transformation Processes and Instrumentation department

looks at solid-gas systems and is developing a unique body of know-how on the modelling of the physical-chemical transformations of solids and gas sensors. This department's activities are structured around two scientific topics: "Reactivity and transformation of solids" and "The electrical properties of solids in interaction with a gas and instrumentation".

Main areas of application

Oil/gas industry

Expertise on gas hydrates on the deep ocean floor (partner: TOTAL). Other applications concerning industrial air conditioning, water treatment and carbon capture and storage are being studied with partners,

Nuclear industry

Corrosion issues with nuclear fuel cladding and modelling of fuel transformations (partners: CEA, AREVA, the IRSN...),

Industrial processes using powdered solids

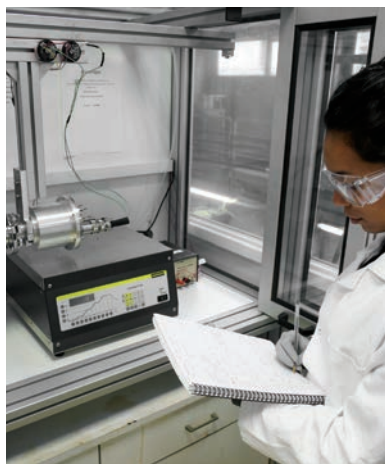
in a very varied range of fields: health, building materials, technical ceramics (partners: Seppic, Calcia, Lafarge, Solvay, Kerneos, CEA, Mersen...),

Process and polluting

emissions control giving rise to strong development of gas sensors (partners: Renault, PSA, Electricfil, Meas, Arkema, Solvay, Bluestar...),

Geosciences

Resource management (water, energy, geo-reservoirs), recycling and recovery of industrial waste, rehabilitation of abandoned industrial sites and polluted sites, natural risks, sustainable development, in partnership with industry (IFPEN, Total, Harsco) or public institutions (BRGM, IRSTEA, ADEME, ONEMA, water agencies).



The Engineering & Health Centre

The Engineering & Health Centre is at the heart of the medicine of the future



Our vision

Out of this meshing of engineering sciences and life sciences will come the greatest advances for the health of our fellow citizens.

Our ambition

The internationally recognised excellence of the research (INSERM and CNRS units) and the training provided by the CIS place the centre in a dynamic of technology transfer to accompany innovation in the medicine of the future.

Our projects

_ Drug delivery.

New molecules and nanomedicine have led to the emergence of targeted therapies thanks to micro-nanotechnology and digital technological solutions.

Our projects are supported by the pharmaceutical industry and manufacturers of medical devices.

_ Computer-assisted medical and surgical procedures such as surgical navigation and planning in endovascular surgery guarantee better treatment for the patient.

Our work funded by the European Research Council and the ANR

concerns the in silico prediction of the risk of a ruptured aneurysm and the predictive planning of surgical scenarios by patient-specific digital simulation.

_ Implants, prostheses and medical textiles can compensate for a deficient function or replace an organ.

Our work is being conducted as part of the national *Industrie du Futur* programme. based on digital tools, it concerns the design and performance evaluation of devices as well as production processes, for example: production of bioceramics by additive manufacturing.

_ E-health, telemedicine and medical IT refer to all the healthcare technologies and services based on ICTs.

Working with hospitals, the ARS (regional health authorities) and health data processing companies, we are providing industrial engineering solutions to improve the efficiency of the care pathway and control its costs.



FAYOL

The Institut Henri Fayol

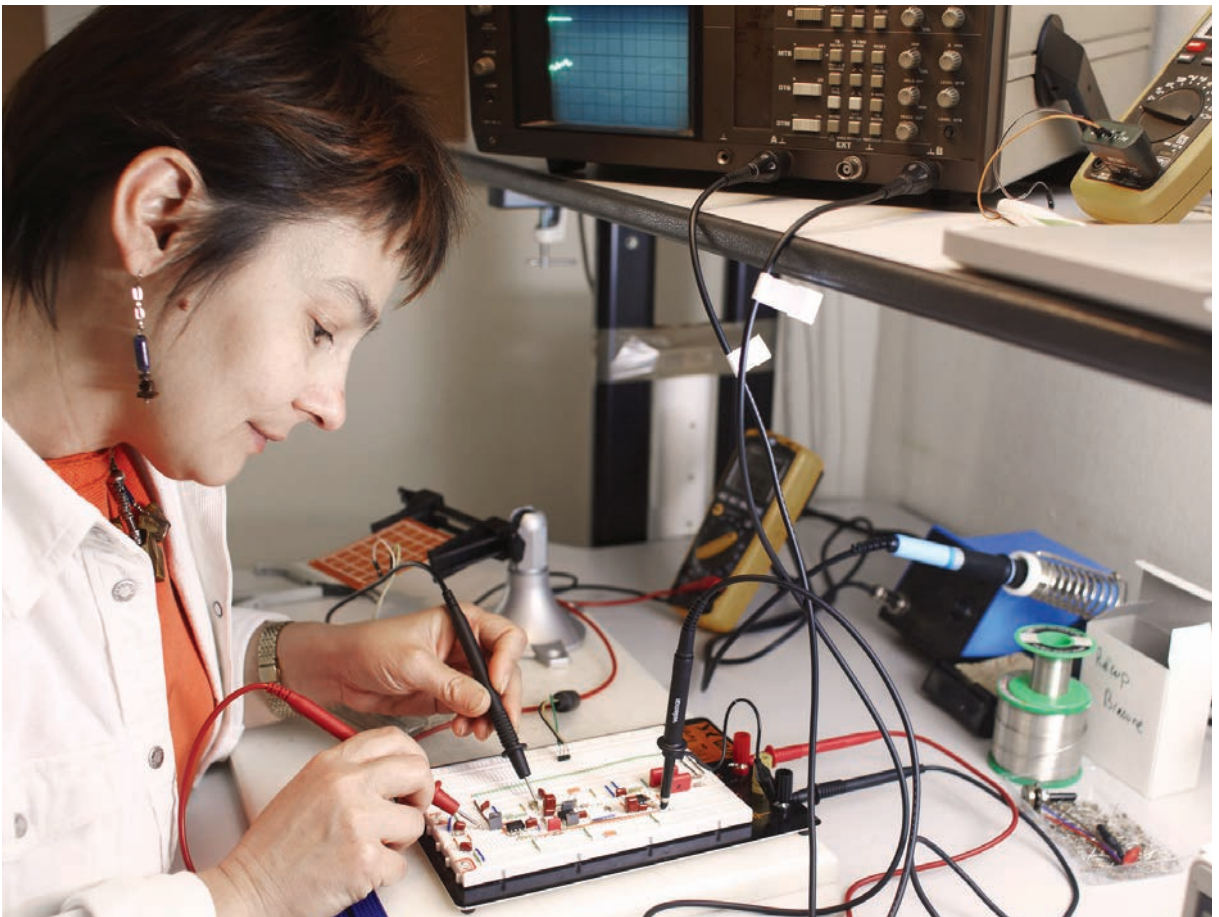
The Institut Henri Fayol responds to issues facing the company today and tomorrow.



That company needs to be efficient and perform well overall, including on the Sustainable Development and Corporate Social Responsibility (CSR) aspects. This involves taking into account the "Sustainable Territorial Industrial Development" challenge, which implies an active participation in programmes such as *Industrie du futur* and *Ville du futur*.

To do this, it employs the following competencies: Industrial engineering, Information technology, Mathematics, Environmental sciences, Management and Human and social sciences.

In concrete terms, this has led to our participation in research programmes on **smarts grids, industrial and urban logistics, the internet of things, product service systems, the design of flexible and reconfigurable production systems, the management and optimisation of supply chains**, the smart use of complex industrial simulators, environmental and societal impacts, IT system security, industrial risk management, CSR in SME-SMIs and innovation systems.



Microelectronics Centre of Provence

The Georges Charpak Provence campus at Gardanne, between Aix-en-Provence and Marseille, was inaugurated in 2008 by Georges Charpak, who gave it his name. It constitutes a top-ranking technological ecosystem in the fields of microelectronics, security and the internet of things.



On site it has the Microelectronics Centre of Provence (CMP), a training and research centre with outstanding research laboratories such as the Micro-PackS technology platform where industrialists and academics work together.

A top-level ISMIN engineering course, a Research and Development Partnership Centre (EPRD) that is able to pre-incubate startups, in conjunction with national and regional incubators. Taken together, this all gives the site a strong territorial base to by serving local economic development and disseminating scientific culture to the general public. With the SCS competitiveness cluster (it is a member of its committee), the campus participates in the development of the entire microelectronics sector in the PACA region, from silicon to its uses, and taking in telecommunications in conjunction with the Sophia-Antipolis campus. The CMP was created in 2003 at the heart of the French "microelectronics crescent", centred on two main companies, ST Microelectronics and Gemalto, which design and make electronic devices. By establishing strong partnerships with these leaders and by participating in and supporting the development of SMEs, in particular in the smartcard field, **the CMP has become**

an important player and a strong contributor thanks to its 4 research departments, including one joint research team (ERC) with the CEA Tech, and its clean room with a large amount of state-of-the-art equipment.

The Micro-PackS technology platform, which is chaired by the CMP, and the clean room (man. G. Rondeau), together allow for collaborative research and development work, thanks to the pooling of resources, engineers and equipment. **It constitutes an important point of attraction for the physical, electrical and security characterisation of communicating objects**, thanks to the involvement of large groups, SMEs and startups as well as academics. The ID-Fab project, funded State-Region project contract (CPER) aims to transform the campus and project it into the 21st century. The CMP is made up of 4 research departments: "Bioelectronic" (man. G. Malliaras), which conducts research into the interfaces between the life sciences and organic electronics, "Flexible electronics" (man. T. Djenizian), which conducts research in the field on printed electronics on flexible and stretchable substrates; "Architecture and system security" (man. B. Robisson, CEA), ERC with the CEA Tech, which conducts research in the field of the material security of circuits against attacks of any type; and "Science of manufacturing and logistics" (man. D. Feillet), which develops research projects in the modelling and optimisation of manufacturing processes, and in the use of connected objects in logistics.

LA ROTONDE

Science, communication and social innovation

The only Centre for Scientific, Technical and Industrial Culture (CCSTI) attached to a Grande Ecole, La Rotonde puts together programmes of action to encourage the discovery and appropriation of the sciences, whether they are technical, industrial or social, by society at large.

For 17 years the Centre has therefore been implementing an active and creative programme of science communication. It organises and coordinates events with a general appeal, citizens' encounter and innovative debates on scientific subjects. It manages and runs a dynamic cultural centre that is open to every type of public and receives **40,000 visitors every year.**

A resource and dissemination centre, La Rotonde designs and produces numerous educational materials (exhibitions, educational kits, multimedia materials, etc.).

The centre also has a mission to support teachers in teaching science in primary schools, as it is a *Centre Pilote Main à la pâte* (hands-on centre).

Finally, with its special links with the École des Mines **it plays an active role in the humanist training of student engineers PhD students,** in showcasing research work **and encouraging dialogue between the different actors in science - PhD students, researchers - and civil society.**

La Rotonde has earned a position as a major player in the development of science communication in this region and beyond. It asserts its role as a cog connecting the world of culture, education, industry, research and tourism, in the service of developing between science and society.



The Mines Saint-Étienne Foundation

MAKING A STRATEGIC CONTRIBUTION
TO A MAJOR INSTITUTION.



A fantastic lever for our School since 1946.

The objective of Foundation, a recognised public interest body is clear: to raise private funds (from individuals and business) to give the School extra resources - on top of its State funding - which will enable it to assert its place among the top-ranking institutions for the training of engineers and high-level researchers.

Our ambition is to play major role in social advancement, economic development and all the current and forthcoming technological and social changes:

- _ Partner of the Hexcel Chair in "Digital modelling", our Fondation is proud to be on board the "Next generation airplane"
- _ Stanford, Cornell, Imperial College London, Harvard...: our bursaries have enabled almost 50 student engineers to access their dream complementary training.

Student clubs and ALUMNI networks



A rich student life on both campuses.



The *Bureaux des Élèves* (students' union), a plethora of student clubs (sports, the arts, etc...), and a number of junior enterprises contribute to a busy and enriching life at the School.

The School maintains a privileged relationship with its Alumni networks, with the aim of continually improving its courses, sharing and transmitting knowledge. The Alumni associations help to establish and maintain contacts with and between our graduates after they leave: *Mines Saint-Étienne Alumni*, *Mines Saint-Étienne Campus de Gardanne Alumni*, and the *Association des Ingénieurs ISTP Mines*.





NOVEMBRE 2018 CRÉATION AGENCE **didox** - CRÉDITS PHOTOS : PIERRE GRASSET - CEDRIC DAYA / HTR-FRANCE - ALEXIS CHEZIERE

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