

Metnet, your pilot partner

No one has all the answers. The best way to create innovative solutions for the industry is to work together.

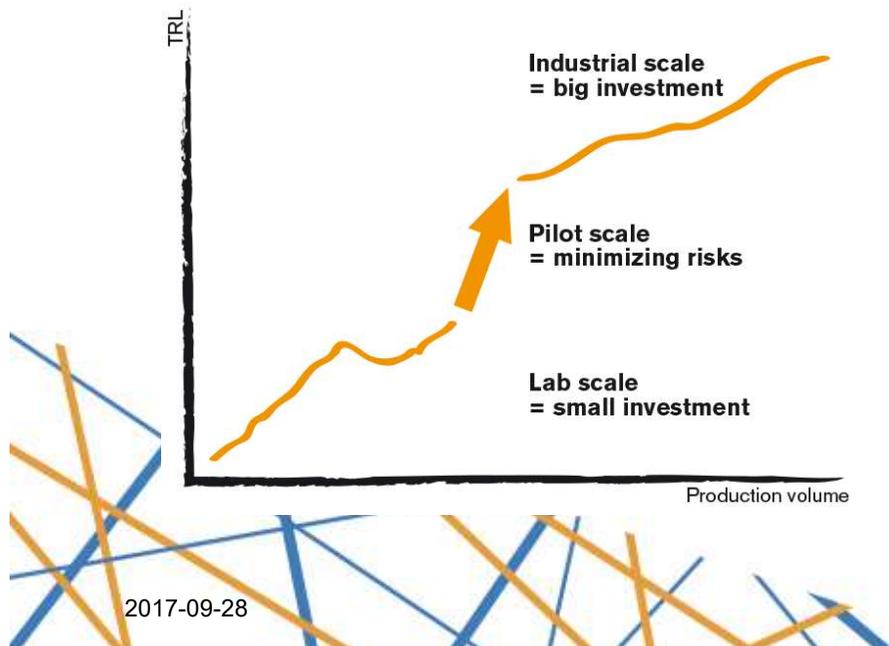
The strength lies in cooperation!

www.metnet.eu



Metnet - the bridge between lab and industrial scale

- Overall solution for development, validation and upscaling of new processes and technologies under industrial conditions
- Mineral and metallurgical upscaling infrastructure capability from raw materials to metals
- Processing chain integration by combining expert qualification and pilot plant equipment from different sites offering a unique testing environment
- **Partners have long history of collaborative research across the European steel industry in forums such as RFCS (and former ECSC) projects**



BENEFITS

- Easy access by single point contact
- Cluster of expertise
- Cross-sectorial competence and equipment
- Wide scope and flexibility
- Technical guidance
- High confidentiality
- Financial guidance for funding opportunities
- Good track record up to highest TRL (across the valley of death)
- Minimize technical and financial risk
- Accelerate development into industrial use

The strength lies in cooperation

1. **BRGM**
Processing of minerals and secondary materials

2. **CEA**
Hydrometallurgy for non-ferrous industry

3. **CRM**
Pyrometallurgy for ferrous and non-ferrous industry

4. **Elkem Technology R&D Technical Center**
Mineral processing and pyrometallurgy for ferrous and non-ferrous industry

5. **Eramet Research**
Mineral processing, hydro- and pyrometallurgy for ferrous and non-ferrous industry

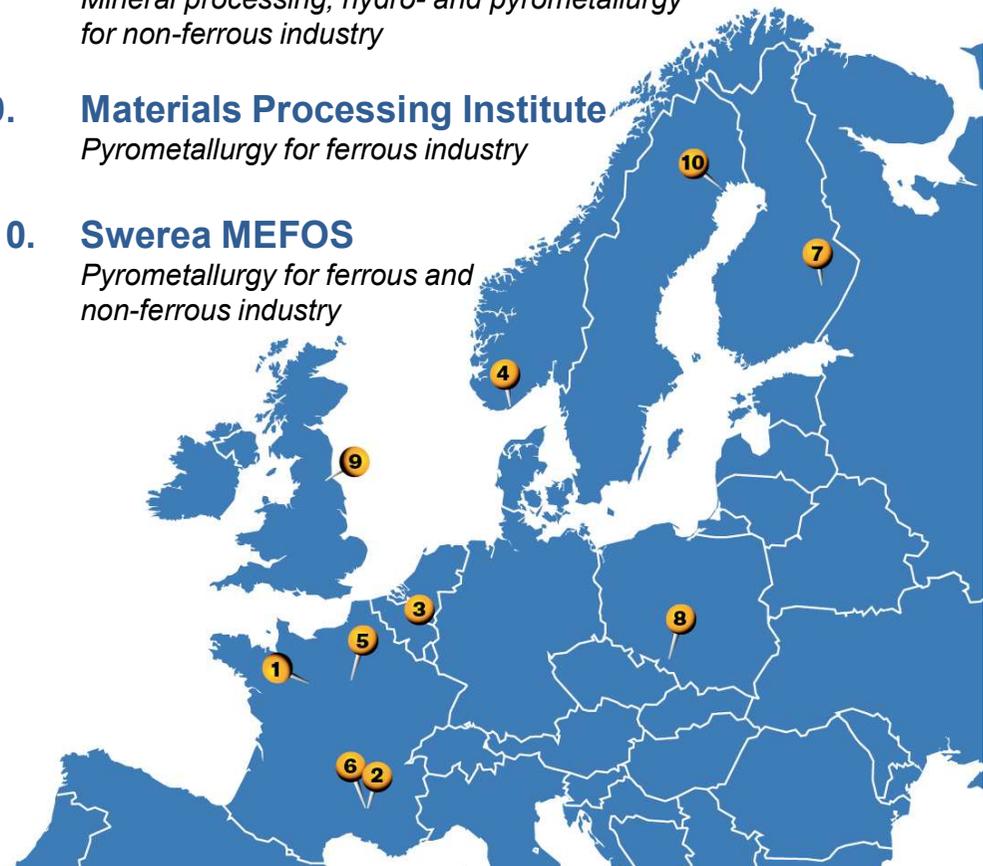
6. **Extractive**
Mineral processing and hydrometallurgy for non-ferrous industry

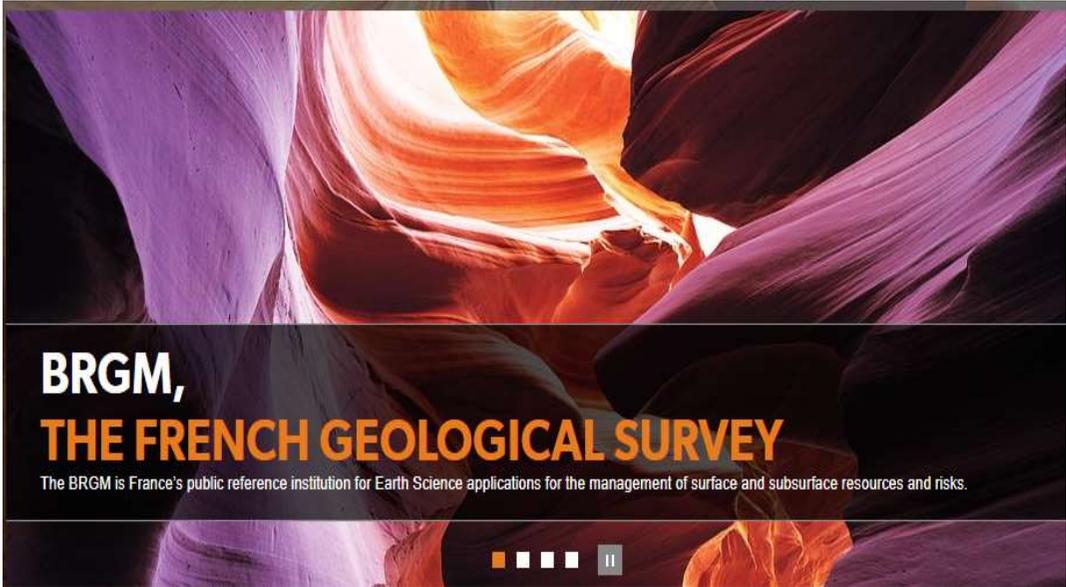
7. **GTK**
Processing of minerals and secondary materials

8. **IMN**
Mineral processing, hydro- and pyrometallurgy for non-ferrous industry

9. **Materials Processing Institute**
Pyrometallurgy for ferrous industry

10. **Swerea MEFOS**
Pyrometallurgy for ferrous and non-ferrous industry





FROM RESEARCH TO INDUSTRY

SEARCH

From research to industry

English Portal

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Research areas

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Research areas

Discover the main research areas on which the CEA is working.

“

The CEA: a key player in technological research

The French Alternative Energies and Atomic Energy Commission (CEA) is a key player in research, development and innovation in four main areas: defence and security, nuclear and renewable energies, technological research for industry, fundamental research in the physical sciences and life sciences.

Latest news
RSS

> 21 September 2017
The chairman of the CEA leads the French delegation to IAEA General Conference

> 14 September 2017

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FOCUS

CRM GROUP

Guidance aux Entreprises

“CRM Group ...
... Votre Partenaire sur mesure”

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Elkem Technology pilot services

Along with our technical and laboratory crew, Elkem Pilot Plant staff constitute Elkem R&D Center's specialized team of around 70 people.



Pilot services

Elkem Pilot Plant is an R&D center with core competence in metallurgical high temperature processes. We offer customers and clients more than 10.000 square meters with advanced testing facilities, laboratories and workshops.

FAIRE & SAVOIR - FAIRE

NOS LABORATOIRES

NOS USINES



CE QUE NOUS FAISONS

EXTRACTHIVE accompagne les acteurs industriels dans leurs projets de recyclage et de valorisation de déchets. Pour cela, nous mettons à disposition de nos clients nos savoir-faire ainsi que nos infrastructures.



ERAMET RESEARCH

YOUR NEEDS, OUR KNOW-HOW

ORE BENEFICIATION

- Comminution: crushing, attrition, grinding
- Particle size classification: scrubbing, screening, sieving, cycloning
- Concentration: density separation, flotation, magnetic separation
- Solid/liquid separation: flocculation, settling, filtration
- Process characterization: sample preparation, mass balance, process simulations and optimization
 - 5 laboratories
 - 2 piloting halls

HYDROMETALLURGY

- Chemistry of inorganic solutions: leaching, solvent extraction and ion exchange resin, precipitation, cementation, crystallization
- Solid-liquid separation: flocculation, thickening, centrifuging, filtration
- Electrochemistry: electro-winning, electro-refining, membrane technology,
- Environment: gaseous emissions treatment, wastewater treatment, solid residue neutralization
- 4 laboratories and 2 piloting halls: continuous pilot facilities with 50 l/h flow rate including 50 types of reactors, pumps, thickeners, belt filters and press filters, mixer-settlers, instrumentation and control systems, electrolysis and electroanalysis cells



PYROMETALLURGY

- Electric furnaces: charge preparation, pelletizing, sintering, process simulation, process control
- Refining: MOR, Bessemer, Pierce-Smith, AOD
- Pilot facilities: test stands for electric furnaces ranging from 0.7 to 1.3 MW, rotary kilns between 220 kW and 1 MW, and an induction furnace 150 kW
- 1 fully equipped laboratory



Science and Innovations

- ▶ Areas of expertise
- ▶ Research Facilities
 - Mineral Processing Laboratory
 - Research equipment and methods**
 - Research Laboratory
 - Finnish Geosciences Research Laboratory
 - Geophysical research packages
 - Marine geology research vessel
 - National drill core archive
- ▶ Publishing
 - Publication series
 - GTK's peer-reviewed publications

Research equipment and methods



From research to process design

GTK's Mineral Processing Unit offers mining companies ore beneficiation studies for assessing ore deposits and drawing up profitability calculations, starting from laboratory testing and extending all the way to campaigns at pilot plant.

▶ Read more



Comminution

Comminution is one of the most demanding mineral technology processes because selection of the correct crushing and grinding process guarantees a successful separation process.

▶ Read more



Hydrometallurgy and bioprocessing

Our laboratory's hydrometallurgy expertise includes cyanide leaching of gold, various types of acid leaching methods for ores and slag, as well as pressure leaching.

▶ Read more



Recycling and environmental studies

Applicability of mineral processing unit processes in environmental and recycling-related studies has been verified in several of our projects. Examples of these include remediation of contaminated soil and separation of metals from industrial slag. New methods and applications are continuously developed.

▶ Read more

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▶ Offices and contact information



Click here to contact us

World Class Equipment and Facilities



Economic Chamber of Non-Ferrous Metals and Recycling

Non-Ferrous Metals Industry

| |
|-----------|
| Copper |
| Aluminium |
| Lead |
| Zinc |
| Silver |

Non-Ferrous Metals Industry

Copper (Cu) is nonmagnetic metal. Cu is received as a result of the fire refining (fire reduction) and electrolytic refining (electrorefining). In the form of cathodes, slab ingots and round ingots. Copper found the very wide application mainly due to high electrical and thermal conductivity, high corrosion resistance and good ductility. More than half the consumption of copper falls on electrical engineering and electronics and is used in the form of strips, sheets, profiles and wires. From copper are made pipes for water installations, production of which has significant earnings growth, in recent years.



Pilot plant – heating and metalworking technology

Our pilot plant for heating and metalworking provides a unique testing environment where we, together with you, the customer, improve existing heating and metalworking processes or develop new ones. The facility is perfect for developing equipment and

Industrial support organisation (ISO)

Helps us develop the offer and improve service to customer by identifying needs and trends of industry.

- Arcelor Mittal
- A.V Dawson
- Boliden (pyro)
- British Steel
- CASPEO
- Eurotab
- EYDE cluster
- Harsco
- Innovator
- Keliber
- Liberty Steel
- Mustavaaran Kaivos Oy
- Reactive Metal Particles
- SSAB Europe
- SUEZ Belgium
- Tata Steel, Europe
- TEGma
- ZGH Boleslaw
- ZM Silesia SA

