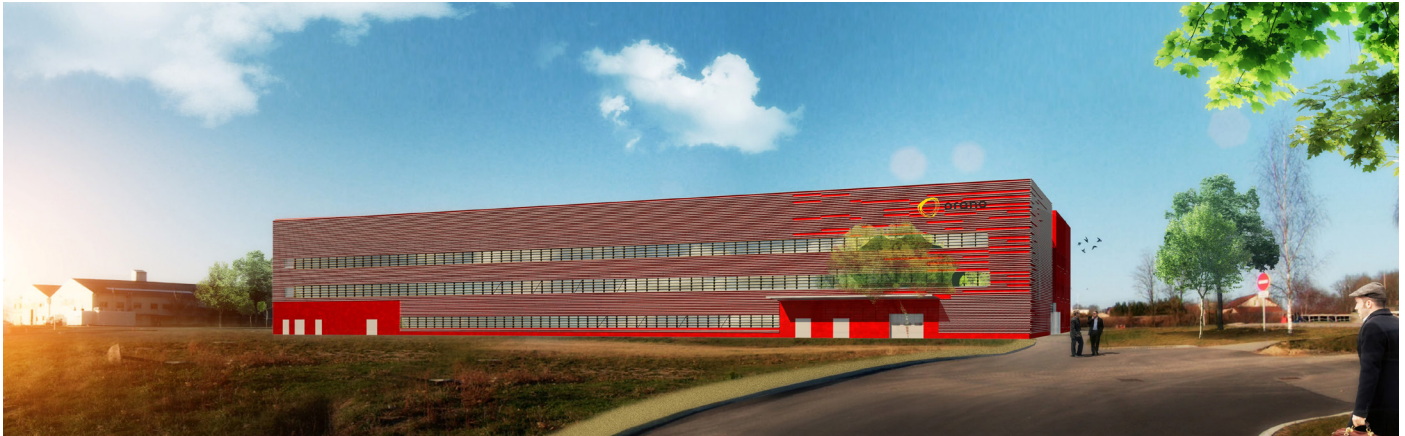


ORANO/CIME

Centre d'Innovation en Métallurgie Extractive
Bessines-sur-Gartempe, France



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ABOUT

The CIME is an Orano Mining 40 years experienced, diversified, flexible Research and Development Center which develops efficient, scientific, technical and eco-friendly processes to offer its customers complete services from consultancy to laboratory tests to pilot plant tests. It was initially created to support the mining and nuclear industry (it has authorizations to store and process natural radio-isotopes bearing materials including NORM and TENORMs).

Its expertise relies in several areas such as mineral processing, hydrometallurgy, environment, metals & materials recycling, sites and stream remediation and medical radio-isotopes.

The CIME brings together 80 professionals, split up into 5 work departments : Projects, Testing laboratory, Engineering & Workshop, Analytical Laboratory and Batteries

EXPERTISE

The CIME has recognised expertise in various sectors :

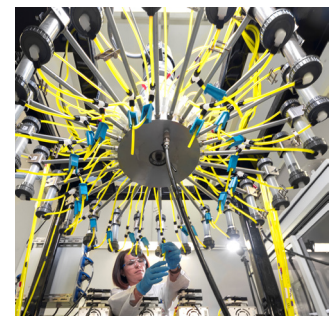
- Actinides: Process development, optimisation, automation and scale-up
- Other metals (Zr, Mo, V, As, REO recently): Process development, optimisation, automation and scale-up
- Medical research : radio-isotopes extraction, purification and production (212Pb and others)
- Environmental remediation: technologies development for water, effluents and soils
- Analytical determinations of complex media (mineral and organic chemistry) with state-of-the-art equipment and operating according to ISO standards
- Design and construction of customised and containerised pilot units
- Laboratory and pilot-scale continuous testing of a wide range of processes

FACILITIES & EQUIPMENT

The CIME is equipped with a wide range of equipment and techniques suitable for many applications.

Laboratory and pilot-scale equipment with or without data logging:

- Ore processing (comminution: crushers, mills, screens; Leaching (columns, agitated tanks and reactors, autoclaves); S/L separation (vacuum & press-filters, thickeners, centrifuges); miscellaneous (HGMS, Flotation cells, Hydrocyclones, Knelson, Shaking table), Membrane filtration (UF-NF-RO rig))
- Hydrometallurgy (Resin (IX) columns, Solvent (SX) Mixer-settlers and agitated columns, Activated carbon columns, Bio-Reactors)
- Pyrometallurgy (furnaces)
- Others: sludge cementation lab
- Characterization devices : laser size analysers, BET, viscosimeter, density meter, DTA/TGA, hand-held XRF...



Analytical laboratory :

- 4 ICP-OES, 3 ICP-MS.
- XRD, XRF.
- SEM with EDS microprobe EDS.
- Chromatography : HPLi, CPG-MS, CPG.
- 3 gamma spectrometry units and 8 alpha-spectrometers.
- Proportional counters (α , β).
- Liquid scintillation (14C, tritium...).
- Visible-UV spectrometry, IRTF.
- Carbon/sulfur analyzer.
- TOC meter, potentiometers.
- AAS flame and furnace.
- Sample preparation systems: microwaves, melters, hot plates ovens, autoclave, centrifuges
- Powders : characterization, grinding, granulation...



MORE INFORMATION

Website: www.orano.group/cime

Contact: Pascal Nardoux