

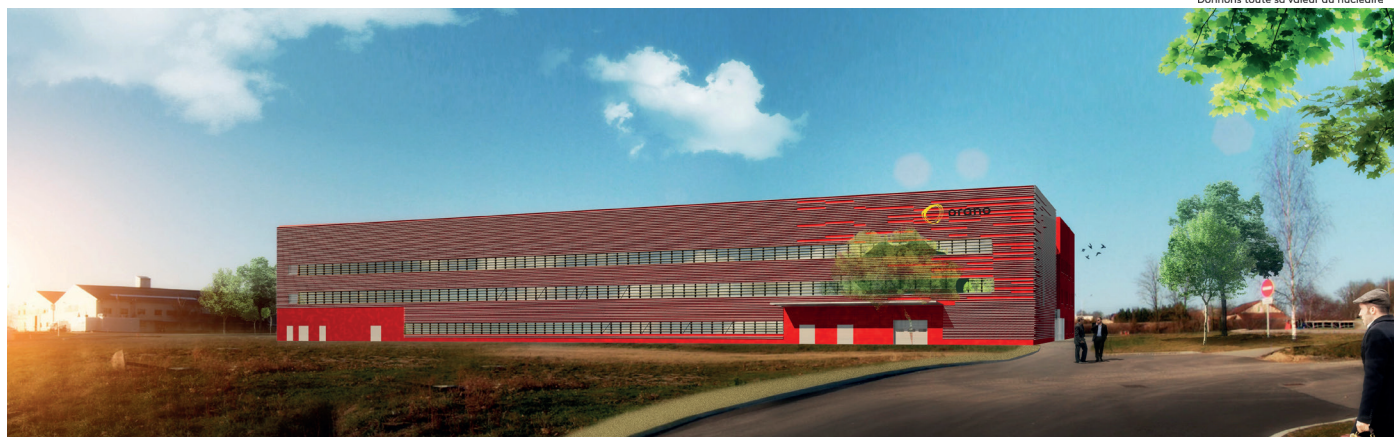
## ORANO/CIME

Centre d'Innovation en Métallurgie Extractive  
Bessines-surGartempe, France



**orano**

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### ABOUT

CIME is an Orano Mining diversified Research and Development Centre created initially to satisfy the needs of the mining and nuclear activities (it has necessary authorisations for storing and processing natural radio-isotopes bearing materials including NORM and TENORMs).

Since 40 years CIME develops scientific and technical processes to offer its customers complete services including consultancy in various areas: mineral processing, hydro-metallurgy, environment, metals & materials recycling, sites and streams remediation & medical radio-isotopes.

CIME brings together 70 seasoned professionals split up into 4 departments : Projects, Testing Laboratory, Engineering & Workshop and Analytical Laboratory.

### EXPERTISE

The CIME has recognised expertise in various sectors :

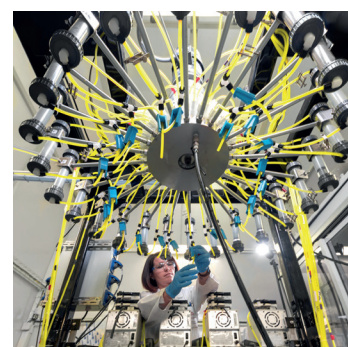
- Actinides: Process development, optimisation, automation and scale-up
- Other metals (Zr, Mo, V, As, REO recently): Process development, optimisation, automation and scale-up
- Medical research: radioisotopes extraction, purification and production (212Pb)
- Environmental remediation: technologies 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 ( $\alpha$ ,  $\beta$ ).
- 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...



### MORE INFORMATION

Website: [www.orano.group/cime](http://www.orano.group/cime)

Contact: Pascal Nardoux

pascal.nardoux@orano.group