

Specialty Metals Processing

The Minerals business unit has a vast range of industrial experience encompassing the mineral processing, hydrometallurgical and pyrometallurgical processing of specialty metals including zirconium, niobium, scandium, titanium, molybdenum, tungsten, gold and silver.

Our team have expertise in the development of processes for the recovery of these specialty metals both as stand-alone flowsheets, and as by-products of uranium, rare earth and mineral sands processing. Expertise includes the application of roasting, leaching, selective precipitation, crystallization, ion exchange, solvent extraction, high temperature smelting (including alumino-thermic reactions), membrane separation, and process water treatment unit processes.

We have conducted a wide range of work in this area for our clients from bench scale test work programs up to demonstration plant scale design, building and commissioning. Some of the processes developed for our clients include, but are not limited to:

- Recovery of gold from anode slimes.
- Recovery of scandium from nickel laterite deposits.
- Recovery of scandium as a by-product of rare earth and mineral sands processing.
- Recovery of niobium (oxide) and conversion to ferro-niobium.
- Recovery of zirconium and conversion to ZOC, ZBS and zirconia.
- Production of high purity HfO_2 (>99.8%) from mixed Zr/Hf feedstock.
- Recovery of vanadium from carnotite ores.
- Recovery of vanadium via acid leach/SX.



About ANSTO's minerals experience

ANSTO has a 40-year track record of providing practical solutions and innovative technology to the mining and minerals processing industries. We have a team of 60+ dedicated professionals and technicians with expertise covering chemical engineering, metallurgy, mineralogy, chemistry, geology and radiation safety working within the Minerals business unit.

We provide process development services, technical review and consulting services, as well as collaborative and contract research on uranium, rare earth and specialty metals processing, radioactivity control and management, novel flowsheet design and modelling, and scoping level engineering / cost estimates.

Contact

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