Battery Precursor Materials from Industrial and Mining Waste Streams

Industrial and mining wastes are literally ‘treasure troves’ of valuable elements like cobalt, nickel, vanadium, lithium and zinc, which are critical for next generation, high-efficiency batteries and energy storage systems.

Competitive advantage

- Critical elements can be selectively extracted via world-class leaching and complexation techniques
- Expertise in the synthesis of magnetic electrochemically reactive ‘carrier’ materials for selective and easy recovery of extracted critical elements
- Ability to regenerate ‘carrier’ materials to create an environmentally friendly and sustainable process

Impact

- Adding value to waste streams through the recovery of critical elements is good for the economy, society and environment
- More economical and sustainable management of industrial and mining waste streams

More Information

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Successful applications

- Recovery of gold, copper, lead and zinc from electronic wastes and mine-impacted soils via galvanic interactions.

Capabilities and facilities

- Extensive laboratory facilities for extraction, recovery and electrochemical-based studies
- Expertise and analysis facilities for studying surface deposition mechanisms, complexation and redox reactions and solid-liquid interfacial interactions