



# LITHIUM

Independent Metallurgical Operations Pty Ltd (IMO) and Metallurgy Pty Ltd (Metallurgy) have significant experience in the development of process flowsheets for lithium projects based on Spodumene, Lepidolite and Petalite. Our team have proven capability in the design, management and execution of lithium testwork programs, project development, and due diligence throughout Australia and worldwide.



Our scope of services ranges from sample selection, ore characterisation and mineralogy, through to management of metallurgical testwork, scoping and feasibility studies and client representation through plant commissioning, ramp up and process plant optimisation.

PROJECT	CLIENT	OUR WORK
<b>Andover Project, Western Australia</b>	Azure Minerals	Process flowsheet development testwork, including ore characterization, dense media concentration, flotation and magnetic separation to maximise the resource value for Azure Minerals.
<b>Goulamina Project, Mali</b>	Leo Lithium	Process flowsheet development testwork, including magnetic separation, desliming and flotation optimization. A bulk pilot operation was then conducted to generate samples for offtake marketing purposes.
<b>LiOH Refinery, Kwinana, Western Australia</b>	Tianqi JV	On-site metallurgical support during the commissioning, ramp-up and transitioning into operating of the LiOH refinery.
<b>Pilgangoora Lithium-Tantalum Project, Western Australia</b>	Pilbara Minerals Limited	Continuous multi stage flotation pilot plant and batch testwork management to produce a high-Li <sub>2</sub> O grade spodumene concentrate suitable for downstream testing. Lithium bearing pegmatite whole core cutting and preparation.
<b>Mt Marion Lithium Project, Western Australia</b>	Mineral Resources Limited	Project feasibility study consulting including dense media cyclone recovery of coarse spodumene, flotation and magnetic separation stages applied to fines.  On-site metallurgical support assisting with full plant surveys and recovery initiatives.
<b>Mt Cattlin Lithium Project, Western Australia</b>	Galaxy Resources Ltd	Beneficiation testwork management including heavy liquid separation.*
<b>Seymour Lake Lithium Project, Canada</b>	Ardiden Limited	Beneficiation testwork management consisting of mineralogical characterisation followed by heavy liquid separation (HLS) at various sizes and successful application of dense media separation based on HLS results. Production of a high Li <sub>2</sub> O grade saleable concentrate from flotation flowsheet development testwork conducted on the natural fines.*

▶ Please contact us for more details on how we can provide you with assistance and support to your project.

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## IMO Consulting & Operations

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## LITHIUM continued (1)

PROJECT	CLIENT	OUR WORK
<b>Mina do Barroso Lithium Project, Portugal</b>	Savannah Resources plc	<p>Savannah Feasibility Study management. Project development scenario and strategic planning. Coordination of various technical, social and commercial owners teams. Internal client desktop, optimisation and options study management. Organisational structure management and development to suite business model.</p> <p>Metallurgical representation on behalf of Savannah. FS beneficiation testwork flowsheet management and development. Spodumene beneficiation flowsheet options study evaluation. By-product (mica, feldspar and quartz) testwork flowsheet development and management. Liaison with potential by-product end users and concentrate application testwork management.</p>
<b>Lepidolite Hill, Western Australia</b>	Lithium Australia	<p>Execution of a continuous multistage pilot plant producing high purity Lithium Hydroxide from a lithium bearing mica.*</p>
<b>Confidential Project</b>	Lithium Australia	<p>FS beneficiation flotation testwork management and flowsheet development. Confirmation of beneficiation flowsheet via continuous pilot flotation to generate a high grade Li<sub>2</sub>O concentrate suitable for hydrometallurgical testwork.</p>
<b>Bougouni Lithium Project, Mali</b>	Kodal Minerals plc	<p>Initial DMS testwork flowsheet management and development across multiple deposits. Includes heavy liquid testwork management on multiple crush sizes to optimize DMS Li<sub>2</sub>O grades and recoveries.</p>
<b>San Jose Lithium Project, Spain</b>	Plymouth Minerals Limited	<p>Metallurgical representation on behalf of Plymouth. Management of beneficiation and refinery testwork to produce battery grade concentrate. Process Engineering and Scoping Study collation assistance.*</p>
<b>L-Max® Technology</b>	Lepidico Ltd	<p>Flotation development testwork and multiple continuous hydrometallurgical pilot plant operations to develop the L-Max® process and produce battery grade lithium carbonate.*</p>
<b>Cinovec Project, Czech Republic</b>	Cobre Montana	<p>Execution of a batch testwork program producing a high-grade Lithium Carbonate from lithium bearing mica.*</p>

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## LITHIUM continued (2)

PROJECT	CLIENT	OUR WORK
<b>Cinovec Project, Czech Republic</b>	European Metals	Flotation development testwork and multiple continuous hydrometallurgical pilot plant operations to develop the L-Max® process and produce battery grade lithium carbonate.*
<b>Bikita Mine, Zimbabwe</b>	Bikita Minerals	Design and management of a three-stage flotation testwork program including mica and Spodumene pre-flotation and final Petalite rougher cleaner flotation stages.
<b>South Dakota Lithium Project, USA</b>	Iris Metals	Client representation and testwork management to provide metallurgical guidance and representation, feedback, track the testwork schedule as well as ensuring that all data is adequately captured and documented.
<b>Nigerian Lithium Project, Nigeria</b>	Thor Exploration	Metallurgical testwork assessing lithium (spodumene & lepidolite) can be extracted from the ore via standard processing techniques.
<b>Mt Holland Lithium Project, Western Australia</b>	Covalent Lithium	Recovery of petalite from lithium ore via flotation testwork program.
<b>Confidential project</b>	IGO Ltd	Metallurgical beneficiation testwork on lithium bearing pegmatites (HLS and magnetic separation).
<b>Andover South Project, Western Australia</b>	Raiden Resources	Metallurgical sighter testwork to determine the response to spodumene beneficiation via lithium flotation.
<b>Lake Johnston Lithium Project, Western Australia</b>	TG Metals	Metallurgical study involving sighter testwork assessing the amenability of the Project's ore to concentration via ore sorting and subsequent beneficiation testwork. This testwork included both HLS and DMS work, followed by magnetic separation and flotation testing.

\* Metallurgical Testwork conducted by Metallurgy Pty Ltd.

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