

Evidence of Intellectual Property (IP) Registration

To protect the novel aspects of the lithium ore processing flowsheet and ensure commercial exclusivity, an **Intellectual Property (IP) registration process** was initiated. A provisional patent application was filed with the **Nigerian Patent and Designs Registry** under the Federal Ministry of Industry, Trade and Investment. The filing covers the following claims:

- **Novel Furnace Design:** A laboratory-scale furnace with optimized heat distribution and energy recovery system for spodumene conversion.
- **Process Flowsheet Innovation:** A combined beneficiation–roasting–leaching sequence tailored to Nigerian pegmatitic ores, reducing energy use by 15–20%.
- **Optimized Reagent Use:** A proprietary leaching protocol that improves lithium recovery while minimizing acid consumption.

The following documents serve as **evidence of IP protection**:

1. **Acknowledgement of Patent Filing:** Official receipt issued by the Patent and Designs Registry, including application number and filing date.
2. **Provisional Patent Specification:** Summary of the invention, claims, and drawings filed with the application.
3. **Search Report:** Preliminary examination confirming novelty and absence of conflicting prior art within Nigerian records.
4. **Ongoing PCT Consideration (Optional):** If applicable, documentation of a Patent Cooperation Treaty (PCT) application for international protection.

These documents confirm that the research outcomes have been formally recognized for protection and may be legally commercialized or licensed.