Extraction of Lithium from Spodumene

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Spodumene Quartz

Technology Summary

The current process of lithium extraction requires roasting the spodumene at a temperature of 1050 C to transform the natural crystalline form of spodumene a to form ß which can be leached at a high temperature. This is a costly, energy-extensive process.

The disclosed innovation offers a way to extract the lithium from spodumene while it's still in its a form. The spodumene is first roasted with NaOH followed by water leaching.

Application & Market Utility

This innovation offers a more cost-effective means for lithium extraction from primary (spodumene) and secondary (clay) sources. Lithium can be used in rechargeable lithium-ion batteries, glass, ceramics, greases, and metallurgical industries. The U.S. would benefit economically and environmentally from a domestic lithium deposit, which can only be possible with a more affordable extraction method.

Next Steps

Seeking licensing and research/development partners.

TECHNOLOGY READINESS LEVEL 1-3

Seeking

Licensing |

Keywords

- lithium-ion batteries
- lithium extraction
- mining
- spodumene
- water leaching

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