

## Selective Composite Membranes for Lithium Extraction from Geothermal Brines

### **Disclosure Number**

201303188

### **Technology Summary**

Selective composite membranes for lithium extraction has the potential for transformational improvement in lithium chloride extraction methods from naturally occurring concentrated brines. The current methods of selective extraction use sorbents based on lithium aluminate ( $\text{LiCl} \cdot 2\text{Al}(\text{OH})_3$ ) or lithium manganese oxide. The former of these is highly selective but has a limited capacity, whereas the latter material has a much higher capacity but suffers from instability from the use of concentrated acid to recover lithium from the sorbent. Selective composite membranes can demonstrate high capacity and selectivity and operate under aggressive conditions including high temperature and concentrated acid with long operational life and stability.

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