

The LiSED team from Rice University proposes a project entitled “A Highly Selective Electrodialysis Process for Energy Efficient Lithium Extraction” for Phase 2 of the American-Made Geothermal Lithium Extraction Prize competition. The objective of this Phase 2 project is to design an integrated pilot-scale direct lithium extraction system using our novel selective electrodialysis technology, which will be constructed for laboratory evaluation and field demonstration in Phase 3 of the competition. Our lithium selective electrodialysis (LiSED) technology can extract and concentrate lithium from the complex geothermal brine using materials of relatively low cost and commercially available equipment. The technology features zero water consumption, minimal chemical use, low energy consumption, compact size with a modular, scalable design, and can be completely solar energy driven in the off-grid mode. These features will greatly reduce the cost and environmental impact of lithium extraction, making geothermal brine an economically viable source of lithium.