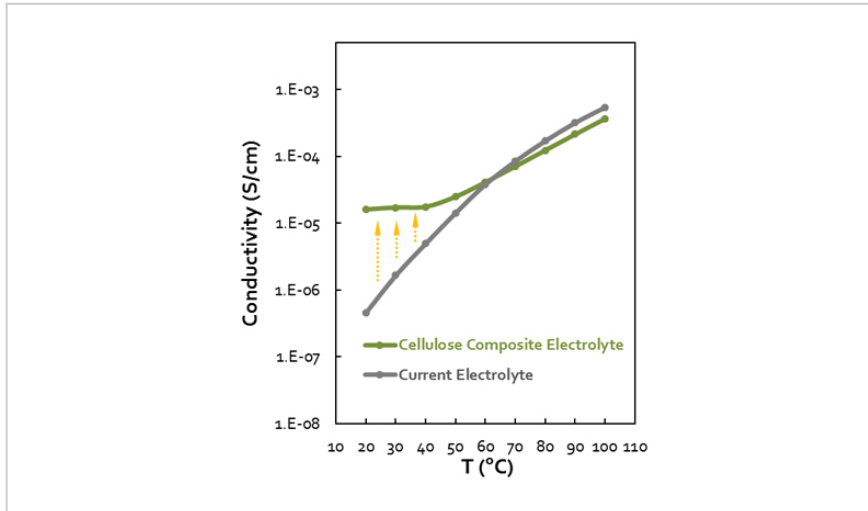


Polymer-Cellulose Composite Electrolyte for Li-ion Battery

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PennState



Composite Improves Conductivity

Technology Summary

In current technology, liquid plasticizers are added to the solid polymer electrolyte to increase conductivity of Li-ion batteries. This increases risks from the use of current flammable and toxic liquid plasticizers. This technology employs a newly developed electrolyte comprising a crystalline PEO6LiX complex that provides high room-temperature conductivity with minimal temperature dependence and decreased dendrite growth for increased battery life. Currently, Li-ion batteries using solid polymer electrolyte need to be warmed to 80°C to be functional. With cellulose-polymer composite electrolyte, no pre-warming is needed.

Application & Market Utility

This technology makes Li-ion batteries safer and increases the battery life, operation temperature range, and energy density. It can be used for battery packs for electric cars and electronics.

Next Steps

Patent 10,608,281 has issued covering this design. Seeking licensing opportunities.

TECHNOLOGY READINESS LEVEL

4-7

Seeking

Investment | Licensing | Research

Keywords

- Lithium-ion (Li-ion) Batteries
- Cellulose-polymer Composite Electrolyte
- Battery Life

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