

Functionalization of precursors for high capacity lignin carbon fiber anode materials in Li-ion batteries

Disclosure Number

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Technology Summary

The invention comprises functionalization of lignin precursors to control and optimize physical properties of lignin carbon fibers, such as microporosity, crystallinity and turbostratic disorder. The targeted properties are highly uniform and tunable pore size, small crystallite size and increased lattice spacing between graphene planes. Lignin carbon fibers based anode materials made from functionalized precursors are expected to enhance lithium ion diffusion rates and intercalation efficiency resulting in increased energy storage capacity and cycling stability. The material can be used to manufacture lithium ion batteries with high energy storage capacity at low cost.

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