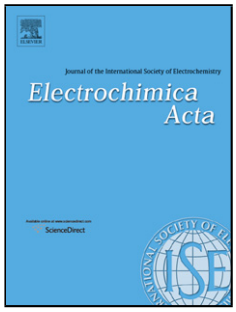

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Coir Pith Derived Bio-carbon: Demonstration of Potential Anode Behavior in Lithium-ion Batteries

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Research Highlights:

- Coir pith derived carbon (CPC) has been exploited as lithium battery anode
- CPC contains randomly oriented single and few layers of graphene sheet like structure
- CPC after KOH activation possesses high specific surface area of 2500 $m^2 g^{-1}$
- CPC anode demonstrates a steady state capacity of 837 mAh g^{-1}at the 50^{th} cycle
- Suitability of CPC anode up to 5C rate has been demonstrated

Abstract

Microporous bio carbon derived from coir pith has been evaluated for the first time for its suitability as anode material in lithium-ion batteries. Coir pith, used generally to fire bricks is well known for its carbon rich composition arising from three different carbon sources, viz., cellulose, lignin and organic carbon. As a result, preparation of bio carbon containing amorphous