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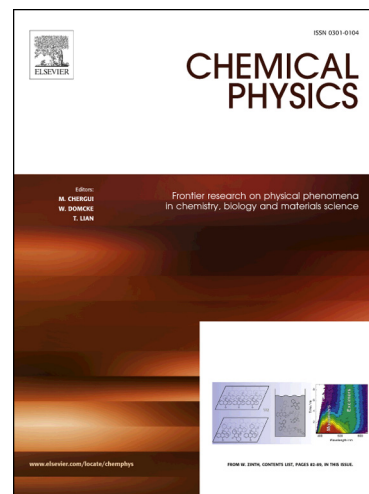
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Mesoporous activated carbon from Corn stalk core for lithium ion batteries

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Abstract: A novel mesoporous activated carbon (AC) derived from corn stalk core is prepared via a facile and effective method which including the decomposition and carbonization of corn stalk core under an inert gas atmosphere and further activation process with KOH solution. The mesoporous activated carbon (AC) is characterized by X-ray diffraction (XRD), Raman spectroscopy, scanning electron microscopy (SEM), transmission electron microscopy (TEM) and Brunauer-Emmett-Teller (BET) measurements. These biomass waste derived from activated carbon is proved to be promising anode materials for high specific capacity lithium ion batteries. The activated carbon anode possesses excellent reversible capacity of 504 mAh g⁻¹ after 100 cycles at 0.2C. Compared with the unactivated carbon (UAC), the electrochemical performance of activated carbon is significantly improved due to its mesoporous structure.

Keywords: Corn stalk core; Mesoporous structure; Lithium ion batteries; High capacity

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