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Hierarchical porous carbon derived from lignin for high performance supercapacitor

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Highlights

► Hierarchical porous carbons are prepared from lignin (denoted as LAC); ► Preparation parameters are discussed in detail; ► LAC provides a specific surface area as large as 3775 m² g⁻¹. ► The specific capacitance of LAC is as high as 286.7 F g⁻¹ at 0.2 A g⁻¹.

Graphical abstract

Abstract

Hierarchical Porous carbons (HPCs) were prepared from lignin (denoted as LAC) via traditional carbonization-activation method. The resulting LAC prepared from lignin was composed with macroporous cores, mesoporous and microporous channels. The preparation parameters were discussed in detail in this paper. The LAC activated with a KOH-carbon ratio of 4:1 at 800 °C displayed the highest BET specific surface

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