Short Communication

Worm-like Hierarchical Porous Carbon Derived from Bio-renewable Lignin with High CO₂ Capture Capacity

Binglong Zhu, Jizhong Huang, Jingrong Lu, Dejian Zhao, Li Lu, Sijia Jin, Quanfa Zhou^{*}

Jiangsu key laboratory of E-waste Recycling, School of Chemistry and Environmental Engineering,
Jiangsu University of Technology, Changzhou, 213001, China

^{*}E-mail: labzqf@jsut.edu.cn

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The worm-like hierarchical pore structure carbon material was successfully prepared by a pyrolysis process. Bio-renewable lignin was introduced as the industrially available precursor. The hierarchical porous property and worm-like channel were characterized by nitrogen adsorption-desorption isotherms and TEM. Characterization results indicated that the carbon materials exhibited microporous and mesoporous structures with worm-like frameworks. CO₂ capture tests approved that the worm-like hierarchical porous carbon showed excellent adsorption capacity of 26.2mg/g. In addition, the worm-like porous carbon shows a lower impedance.

Keywords: Carbon materials; Microstructure; Worm-like channel; CO₂ capture;

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