

One pot synthesis of Mg doped ordered mesoporous carbon from rice hush ash and its application for CO<sub>2</sub> adsorption

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Mg doped ordered mesoporous carbon (Mg-OMC) materials were successfully synthesized by the carbonization of sulfuric-acid-treated silica/triblock copolymer/sucrose/Mg(NO<sub>3</sub>)<sub>2</sub> composites. In the current approach, triblock copolymer P123 and sucrose were employed as both structure-directing agents for self-assembly of sodium silicate solution from rice husk ash and carbon precursors, and sulfuric acid was used to cross-link P123 and sucrose in the as-synthesized composites in order to improve the carbon yield. Thus, synthesized Mg-OMC was characterized by XRD, BET, SEM-EDAX, and XRF techniques. The activity of the Mg - OMC was tested for methane conversion.