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Corn straw-derived biochar impregnated with α -FeOOH nanorods for highly effective copper removal

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Abstract

A novel biochar composite impregnated with α -FeOOH nanorods in hierarchical porous structures (α -FeOOH@PC) was synthesized by molten salt assisted carbonization of corn straws and hydrothermal treatment for crystallization of adsorbed ferric ions within carboxyl functionalized porous carbon. The structures and surface properties of biochar composites were characterized by scanning electron microscopy images (SEM), Fourier-Transform Infrared Spectroscopy (FTIR), X-ray diffraction (XRD), X-ray photoelectron spectroscopy (XPS), Raman spectra, and Brunauer-Emmett-Teller (BET) analysis. The active α -FeOOH

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