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Tuning electronic properties of boron nitride nanoplate via doping carbon for enhanced adsorptive performance

Jingyu Pang^{a,b}, Yanhong Chao^{c,*}, Honghong Chang^b, Hongping Li^b, Jun Xiong^b,

Minqiang He^b, Qi Zhang^b, Huaming Li^b, Wenshuai Zhu^{b,*}

^a School of Food and Biological Engineering, Jiangsu University, Zhenjiang 212013, P. R. China.

^b School of Chemistry and Chemical Engineering, Jiangsu University, Zhenjiang 212013, P. R. China.

^c School of Pharmacy, Jiangsu University, Zhenjiang 212013, P. R. China.

*Corresponding author: chaoyh@ujs.edu.cn (Y.H. Chao); zhuws@ujs.edu.cn (W.S. Zhu)

Abstract

In this paper, the carbon-doped boron nitride nanoplate (C-BNNP) was prepared by pyrolyzing the precursor under N₂ and served as an excellent adsorbent for removal of Rhodamine B (RhB). The structure and composition of C-BNNP were characterized and its adsorption behavior for RhB was investigated. Compared with boron nitride nanoplate (BNNP) which was synthesized under NH₃, C-BNNP displayed an enhancement of the adsorption capacity for RhB (833 mg/g). The adsorption activity was comprehensively studied by kinetics, isotherm and thermodynamics. The adsorption kinetics followed pseudo-second-order model. The adsorption activity was comprehensively studied by kinetics, isotherm and thermodynamics. The adsorption

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