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Dong Wei [a], Huu Hao Ngo [b], Wenshan Guo [b], Weiying Xu [a], Bin Du [a]*, Malik Saddam Khan [c], Qin Wei [c]

[a] *School of Resources and Environment, University of Jinan, Jinan 250022, PR China*

[b] *School of Civil and Environmental Engineering, University of Technology Sydney, Broadway, NSW 2007, Australia*

[c] *Key Laboratory of Chemical Sensing & Analysis in Universities of Shandong, School of Chemistry and Chemical Engineering, University of Jinan, Jinan 250022, PR China*

Abstract

In present study, the biosorption process of Cu(II) onto aerobic granular sludge-derived biochar was evaluated in the absence and presence of effluent organic matter (EfOM) by using batch and fluorescence approaches. It was found that EfOM gave rise to enhancement of Cu(II) removal efficiency onto biochar, and the sorption data were better fitted with pseudo-second order model and Freundlich equation, in despite of the absence and presence of EfOM. According to excitation-emission matrix (EEM), EfOM was mainly comprised by humic-like substances and fulvic-like substances and their intensities were reduced in the addition of biochar and Cu(II) from batch biosorption process. Synchronous fluorescence spectra coupled to two-dimensional correlation spectroscopy (2D-COS) further implied that a successive fluorescence quenching was observed in various EfOM fractions with the increasing Cu(II) concentration. Moreover, fulvic-like fraction was more susceptibility than other

* Corresponding author. Tel: +86 531 8276 7370; fax: +86 531 8276 7370.
E-mail address: dubin61@gmail.com (B. Du)