Electronic Supplementary Material (ESI) for Environmental Science: Processes & Impacts.

Title: Reductive removal of nitro explosives and halogenated phenols with zero-valent iron-included biochar: The role of zero-valent iron and biochar

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Electronic Supplementary Information

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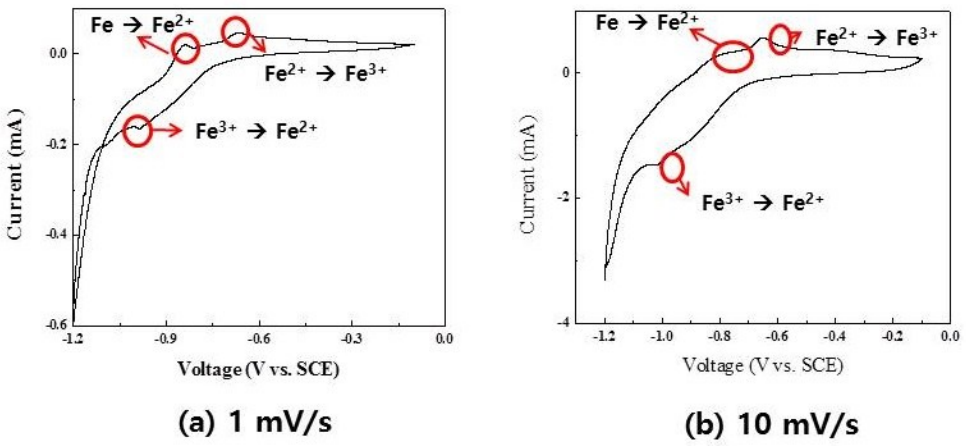

Fig. S1. Cyclic voltammograms of Fe(0)-included biochar at different scan rates ((a) 1mV/s and (b) 10 mV/s). Electrochemical measurements were carried out using an IVAMSTAT instrument with three electrode configuration. The working electrodes were prepared using 7:3 of active material and polytetrafluroethylene (PTFE). The electrodes were formed and attached onto a nickel mesh. In the three electrode configuration, Fe(0)-included biochar (5 v% Fe) was used as the working electrode, saturated calomel electrode (SCE) was used as the reference electrode and platinum wire was employed as the counter electrode. 6.0 M KOH served as the electrolyte. The electrodes were determined at a potential range of -1.2 to -0.1 V.

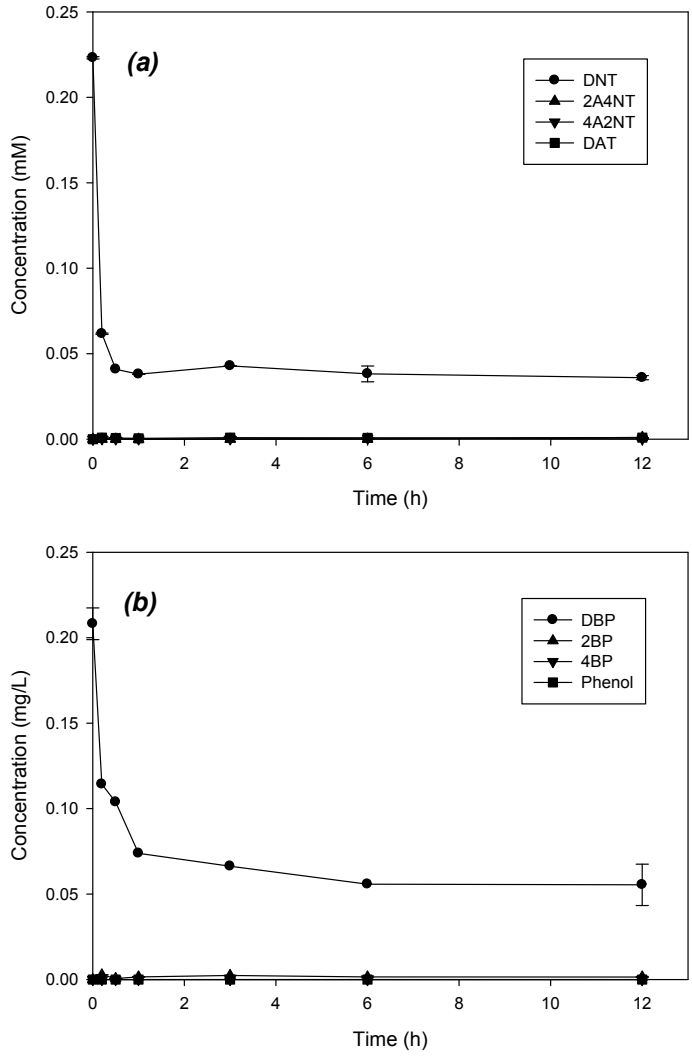

Fig. S2. Reduction of (a) DNT and (b) DBP by pre-reduced biochar by Fe(0). Data points are average values and the error bars represent one standard deviation. The biochar was pyrolyzed at 550 ^{o}C and pre-reduced by Fe(0) at a pH of 7.4 for 1 h.