

Supplementary Materials: Enhanced Removal of Soluble and Insoluble Dyes over Hierarchical Zeolites: Effect of Synthesis Condition

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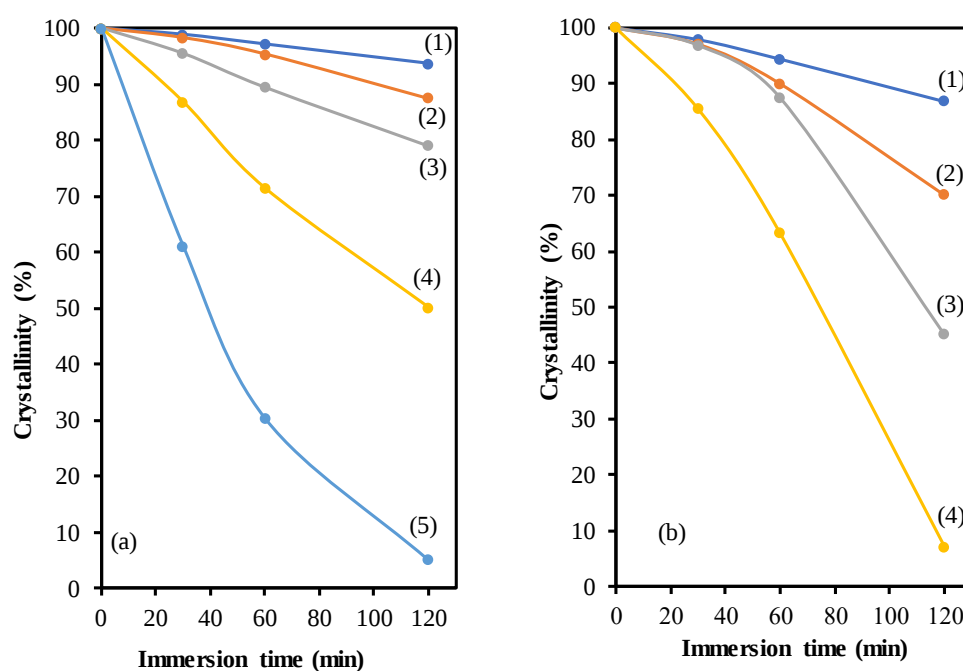


Figure S1. ZSM crystallinity after (a) dealumination with NaOH (1) 0.01 M, (2) 0.1 M, (3) 0.25 M, (4) 0.5 M, (5) 1 M; (b) desilication with CH₃COOH (1) 0.001 M, (2) 0.01 M, (3) 0.05 M, (4) 0.1 M.

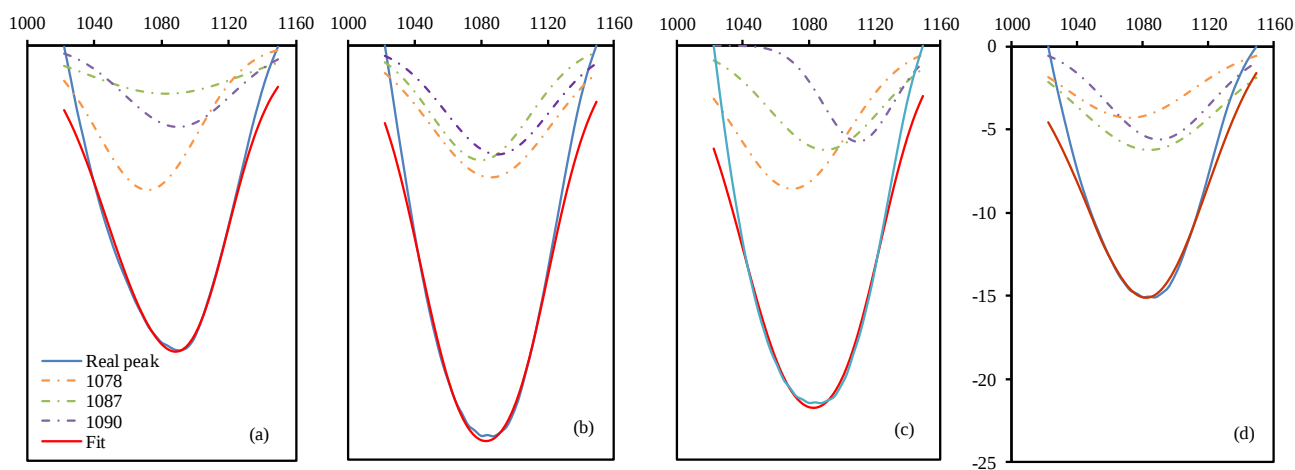


Figure S2. FTIR deconvolution at 1087 cm⁻¹ of (a) ZSM-5_{comm}, (b) ZSM-5_{deAl}, (c) ZSM-5_{deSi}, and (d) ZSM-5_{deSi-deAl}.

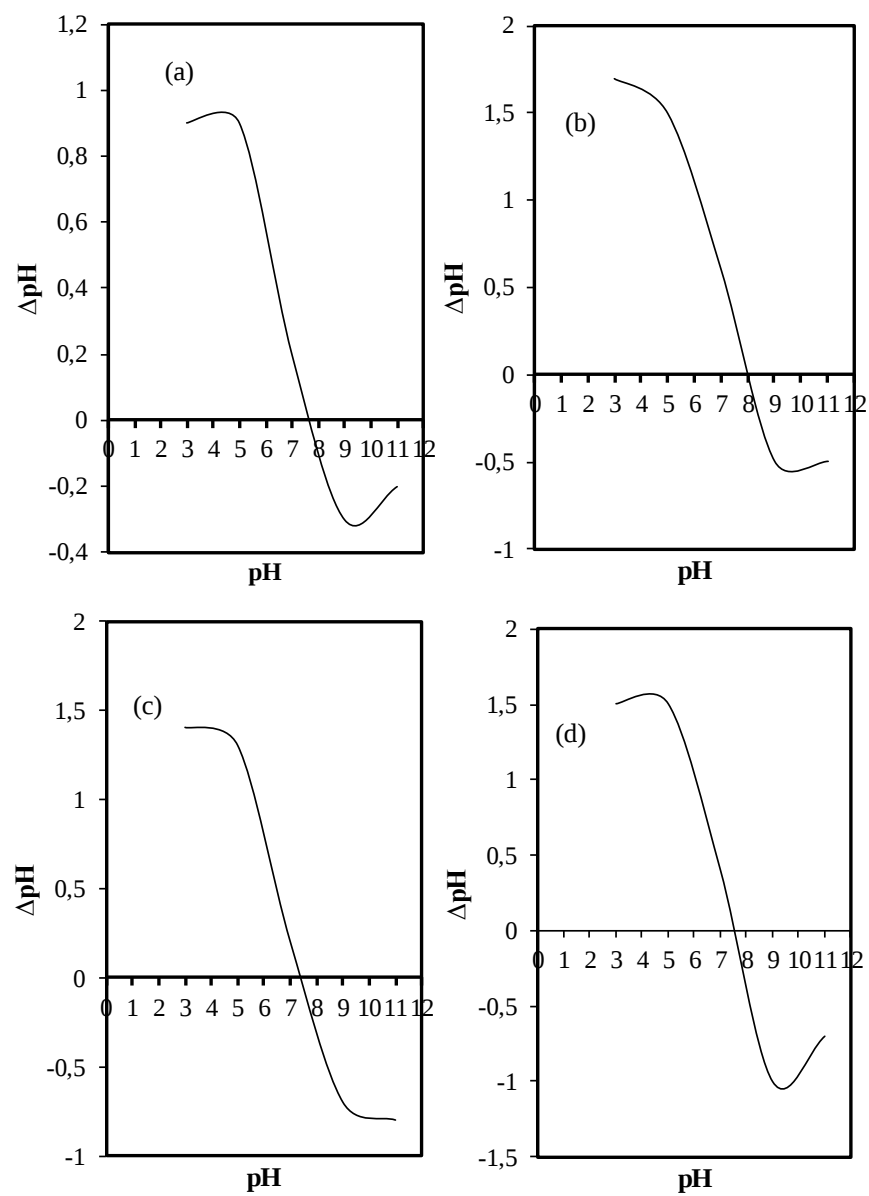


Figure S3. pH of Point zero charge (pH_{pzc}) of (a) ZSM-5_{comm} (b) ZSM-5_{deSil} (c) ZSM-5_{deAl} and (d) ZSM-5_{deSil-deAl}.

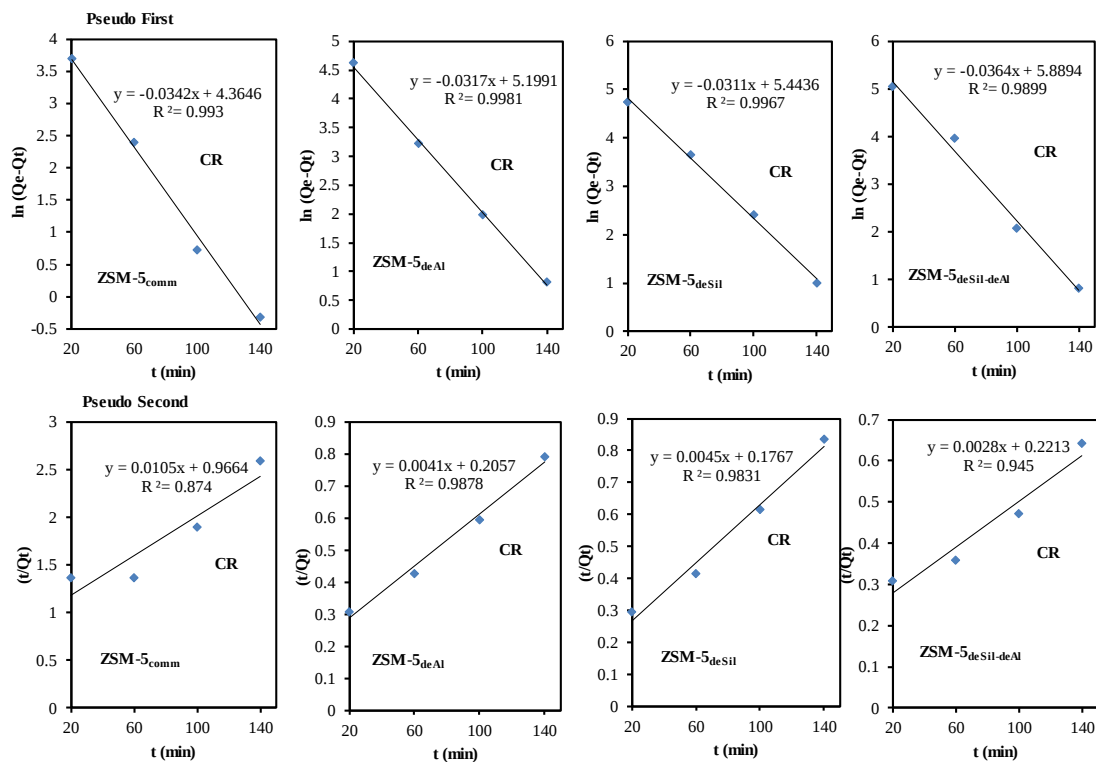


Figure S4. Kinetic parameter of CR in several adsorbents with pseudo first and pseudo second.

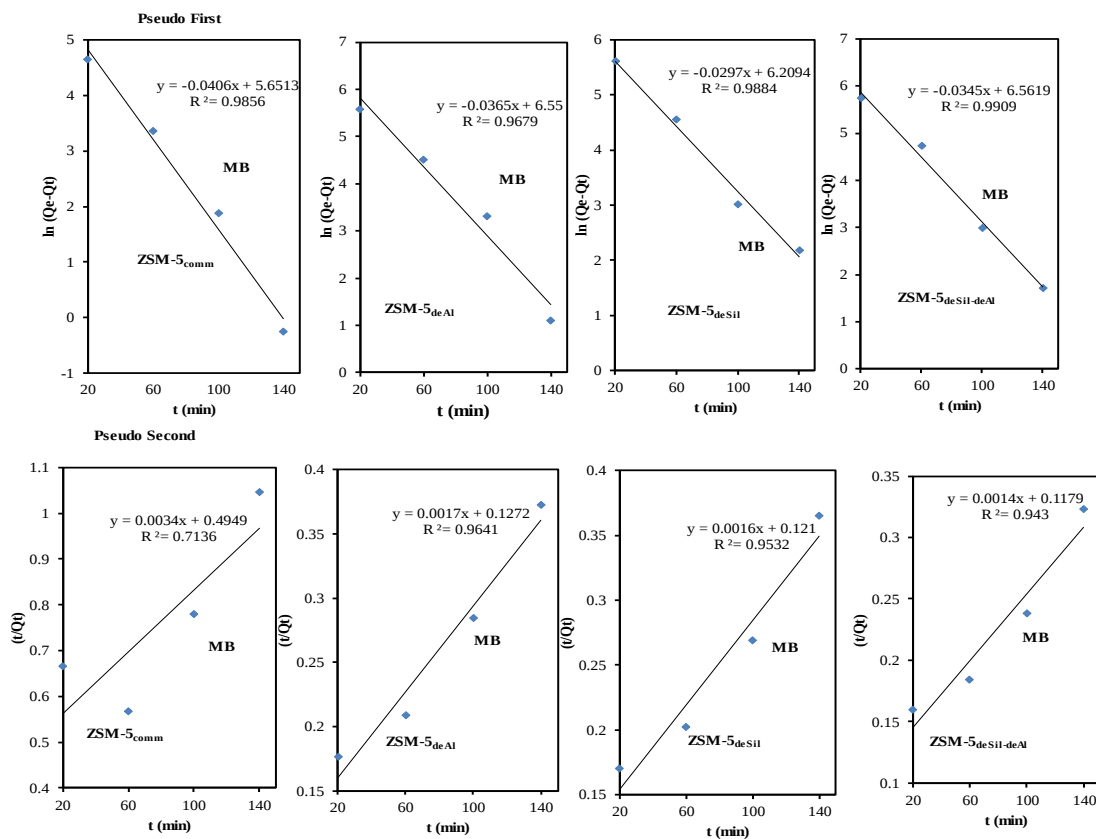


Figure S4. (continued). Kinetic parameter of MB in several adsorbents with pseudo first and pseudo second.

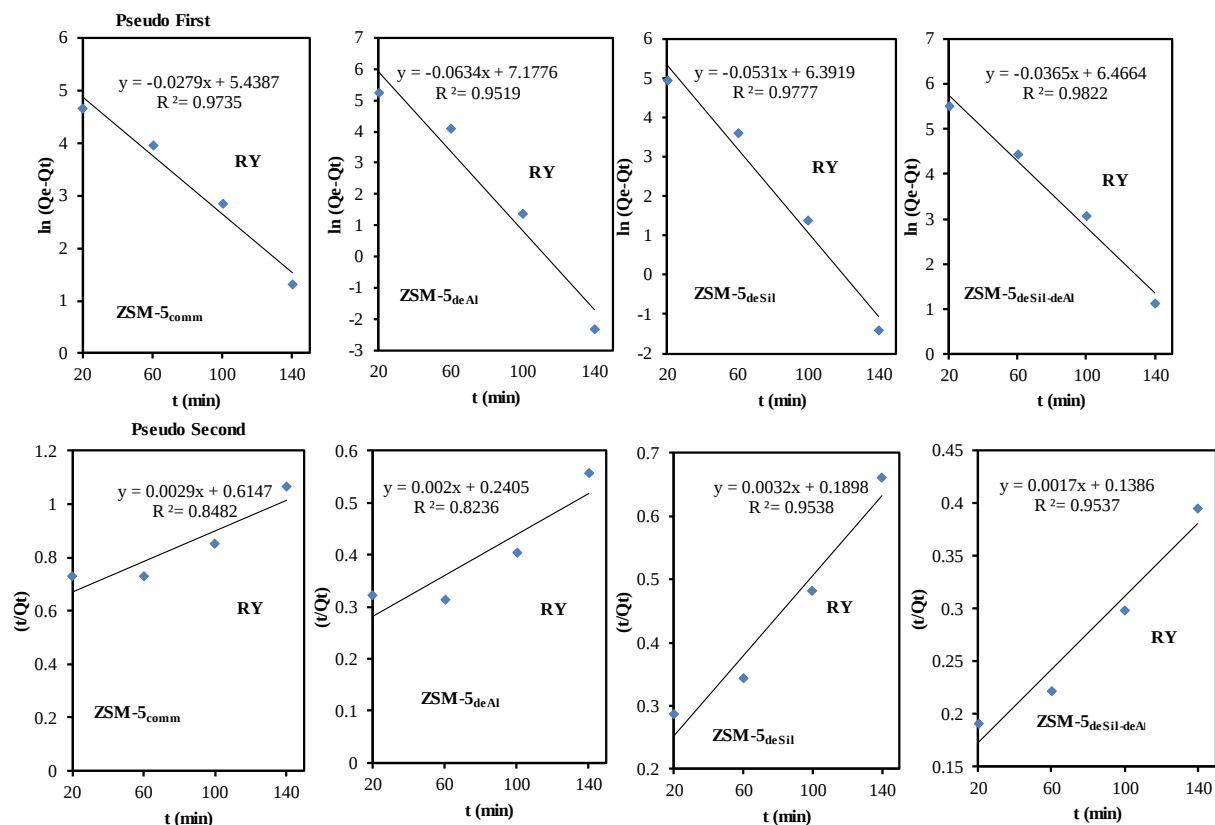


Figure S4. (continued). Kinetic parameter of RY in several adsorbents with pseudo first and pseudo second.

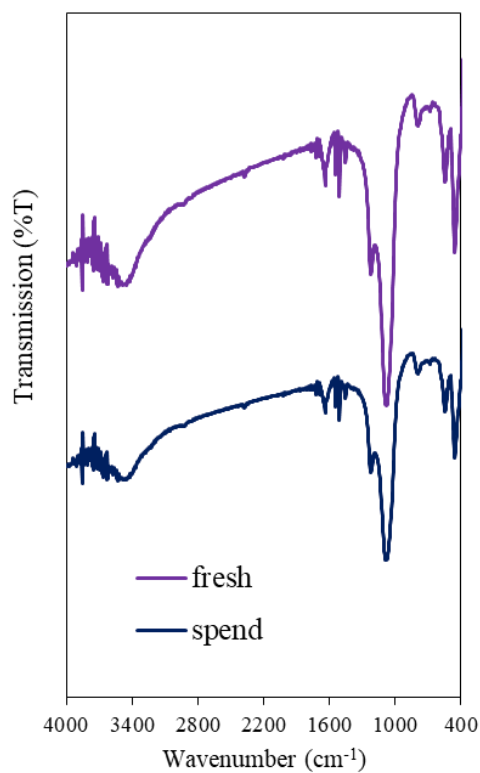


Figure S5. FTIR spectra of fresh and spend adsorbent.