

## Supplementary Materials

# **Preparation, Characterization, and Chemically Modified Date Palm Fiber Waste Biomass for Enhanced Phenol Removal from an Aqueous Environment**

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### **Legends to Supplementary Figures**

1. **Figure S1.** Particle size distribution curve of 24 hrs ball-milled date-palm fiber (RDPF) adsorbent.
2. **Figure S2.** Particle size distribution curve of 30 min micro ball-milled date-palm fiber (RDPF) adsorbent.
3. **Figure S3.** N<sub>2</sub> adsorption–desorption isotherms for Raw date-palm fiber adsorbent.
4. **Figure S4.** N<sub>2</sub> adsorption–desorption isotherms for 24 hrs ball-milled date-palm fiber adsorbent.
5. **Figure S5.** N<sub>2</sub> adsorption-desorption isotherms for 30 min Micro ball-milled date-palm fiber adsorbent.
6. **Figure S6.** N<sub>2</sub> adsorption–desorption isotherms of NaOH-chemically modified date palm fiber adsorbent (NaOH–CMDPF).
7. **Figure S7(a–d).** Comparison of experimental and calculated values obtained from the PFO, PSO, intraparticle diffusion and Elovich kinetic models (RDPF).
8. **Figure S8(e–h).** Comparison of experimental and calculated values obtained from the PFO, PSO, intraparticle diffusion and Elovich kinetic models (NaOH–CMDPF).
9. **Figure S9.** Comparison of experimental and theoretical adsorption parameter values of (a) RDPF and (b) NaOH–CMDPF adsorbents from the Langmuir, Freundlich, D-R isotherm models.

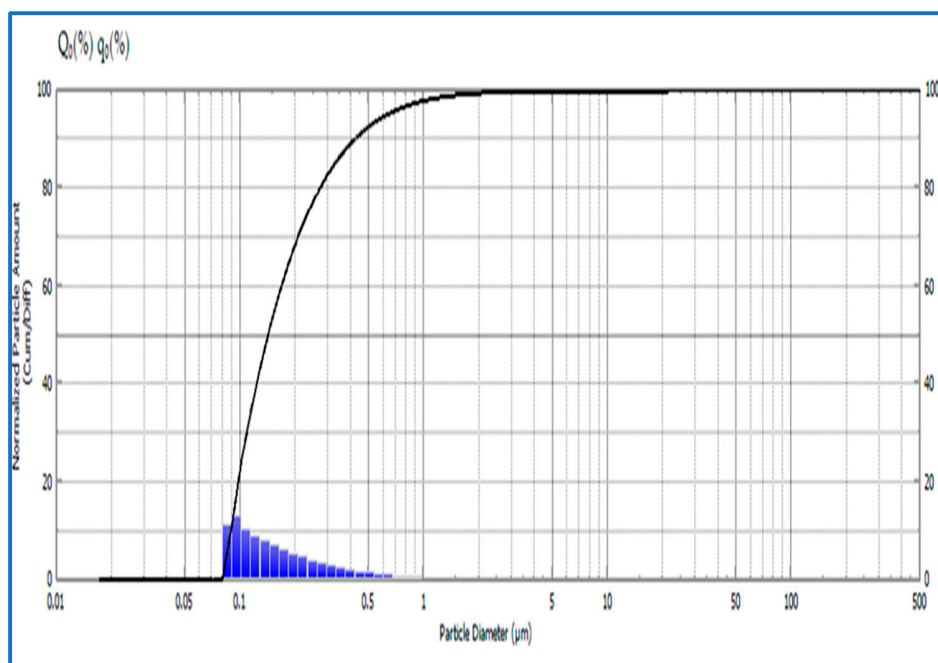


Figure S1.

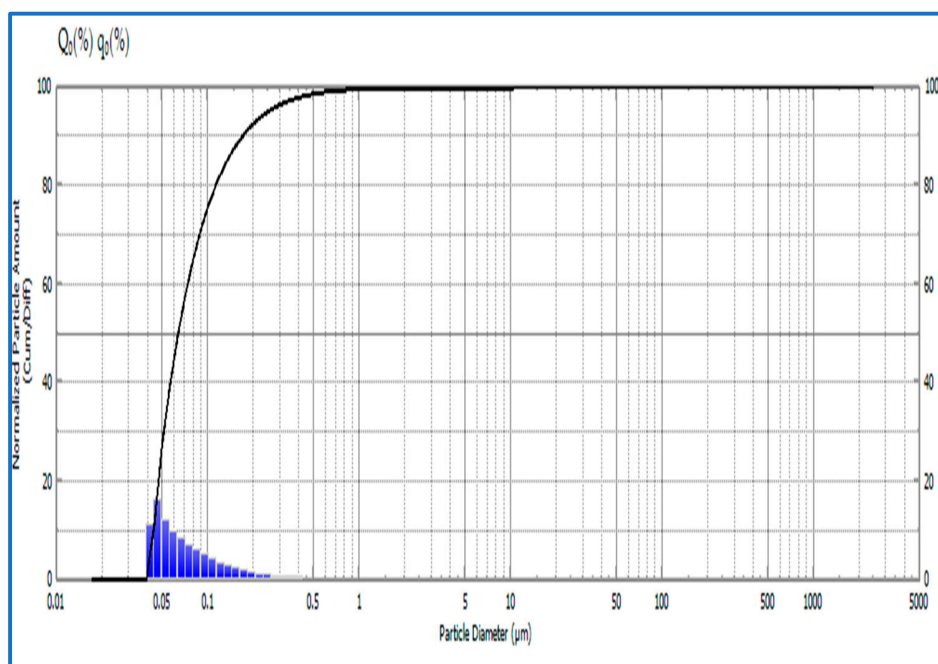


Figure S2.

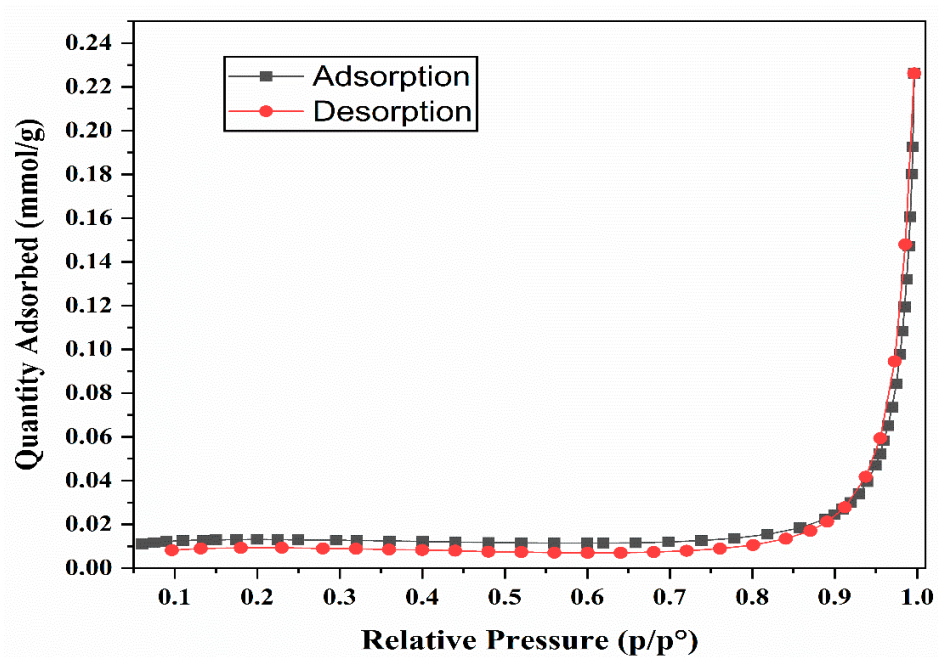


Figure S3.

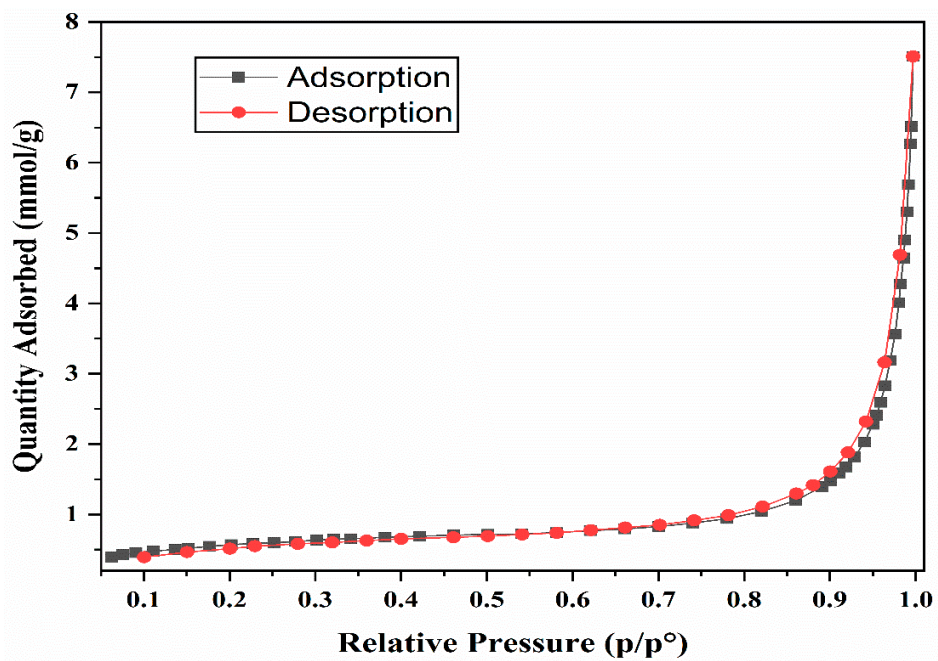


Figure S4.

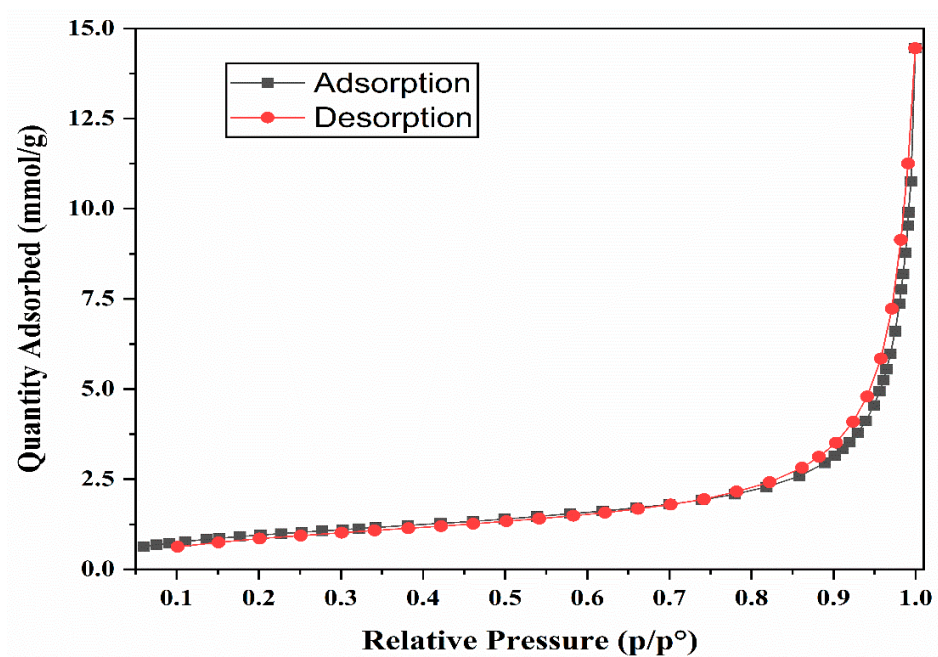


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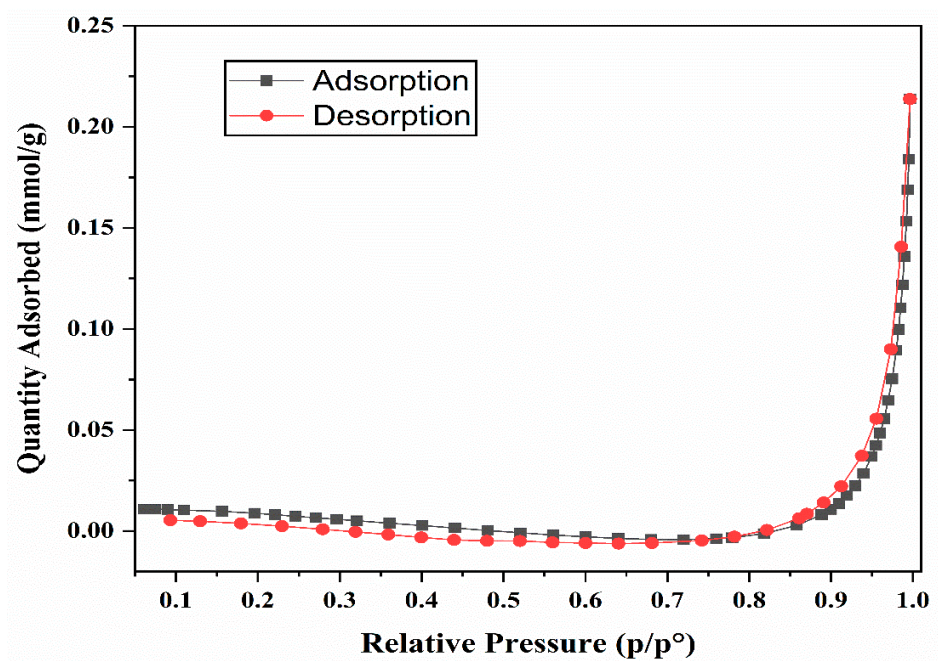
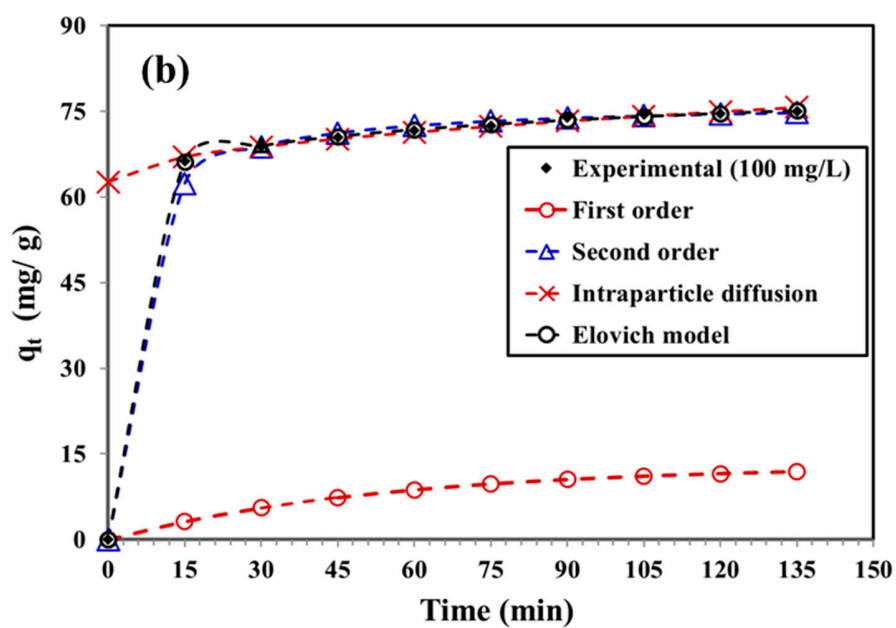
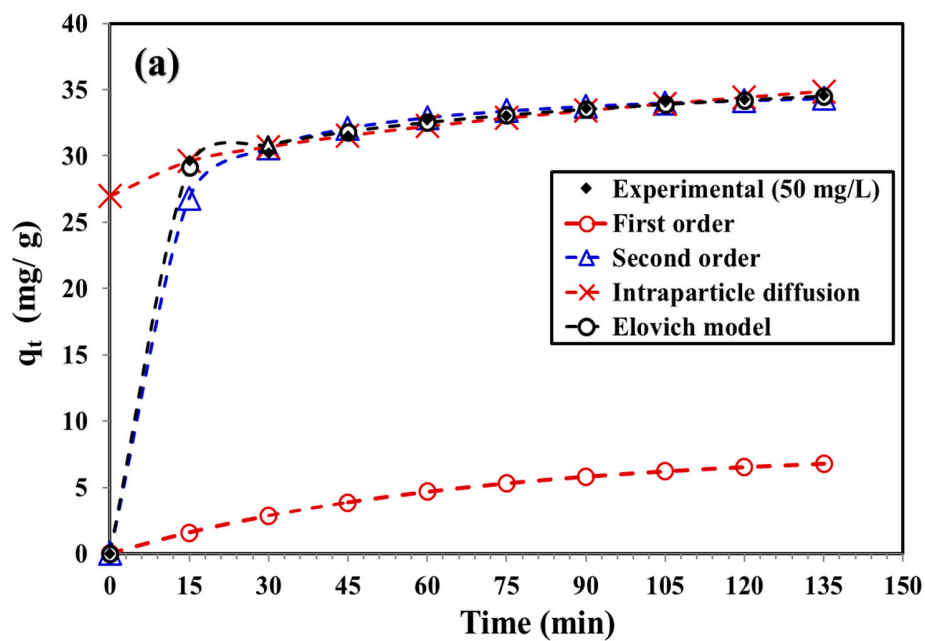


Figure S6.



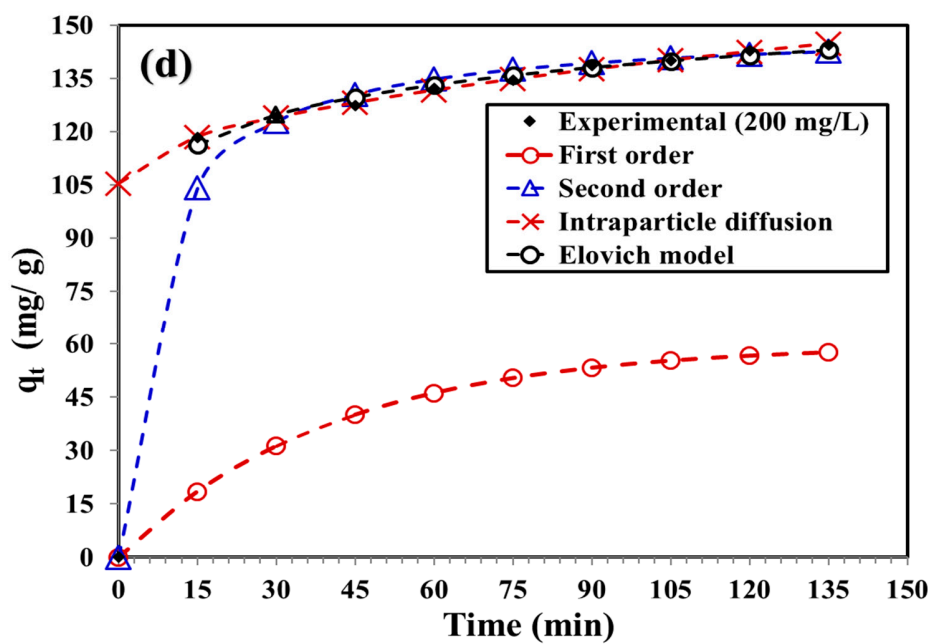
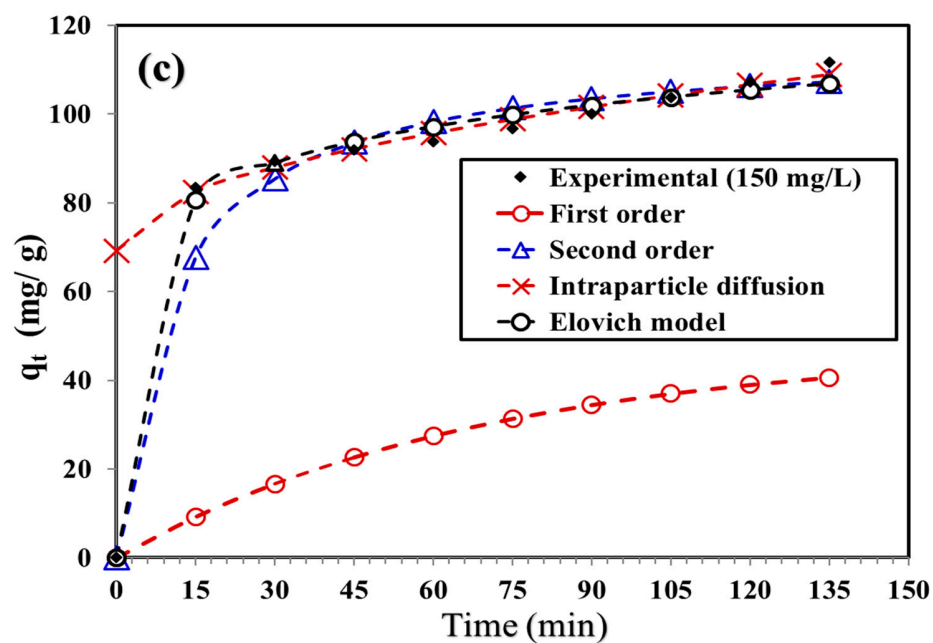
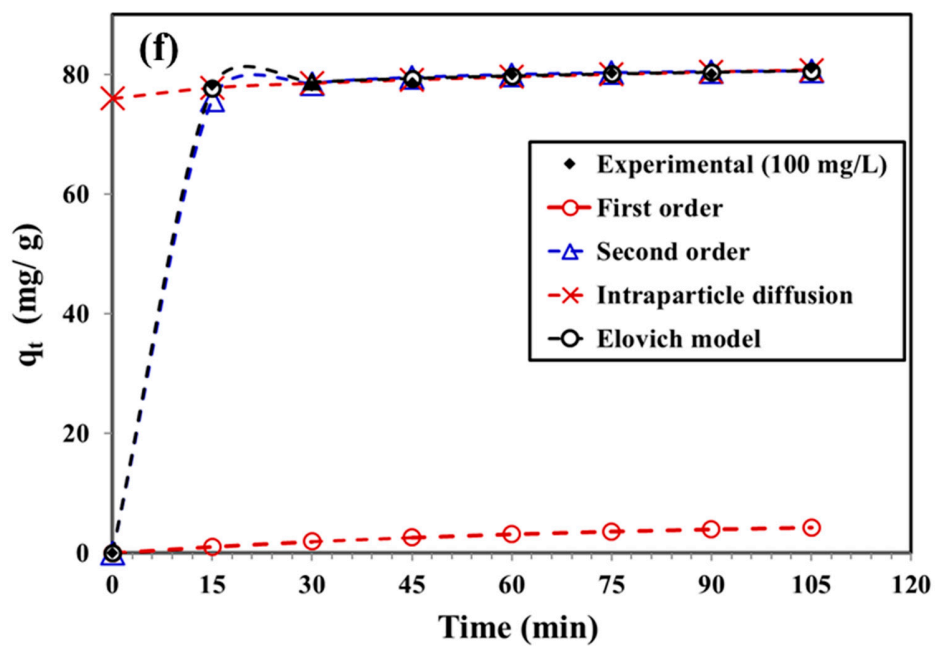
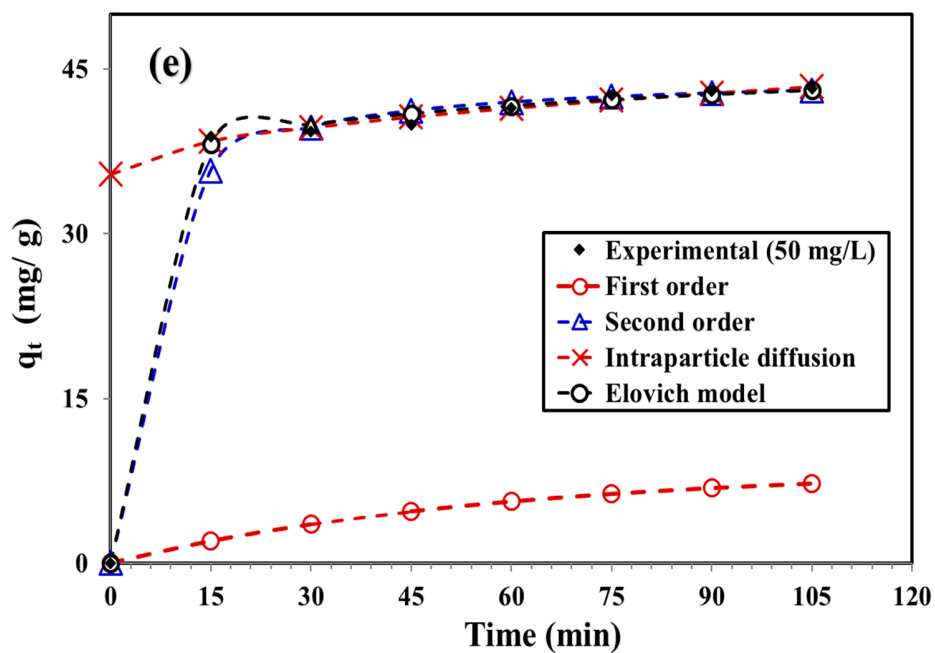


Figure S7 (a-d).





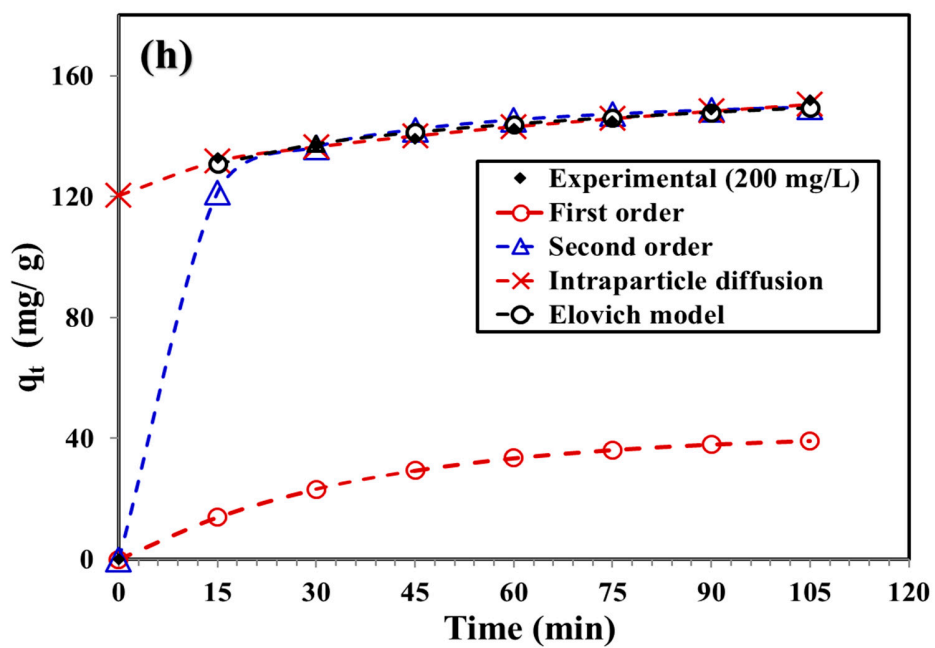
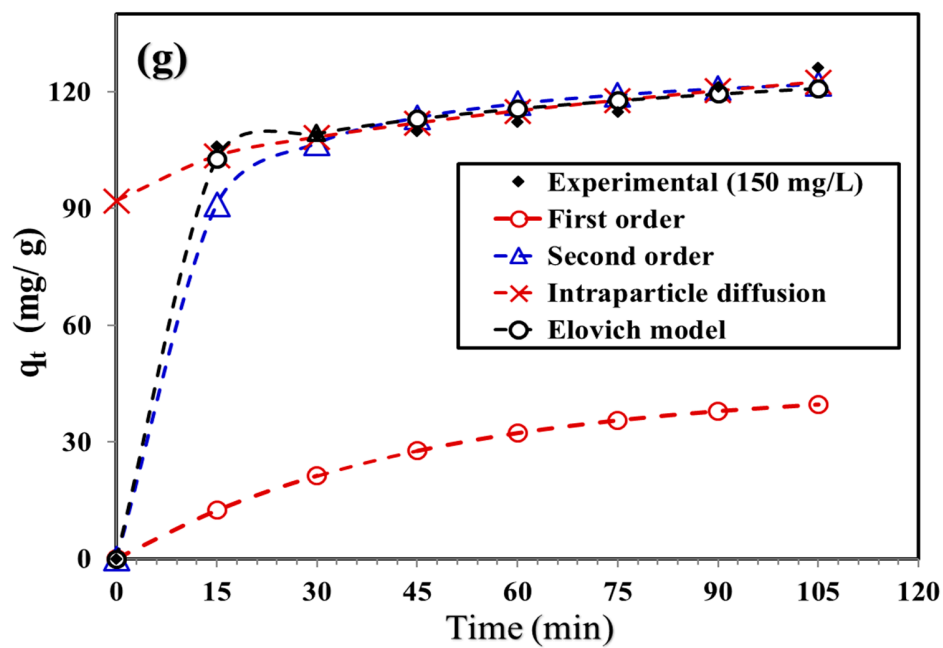


Figure S8 (e-h).

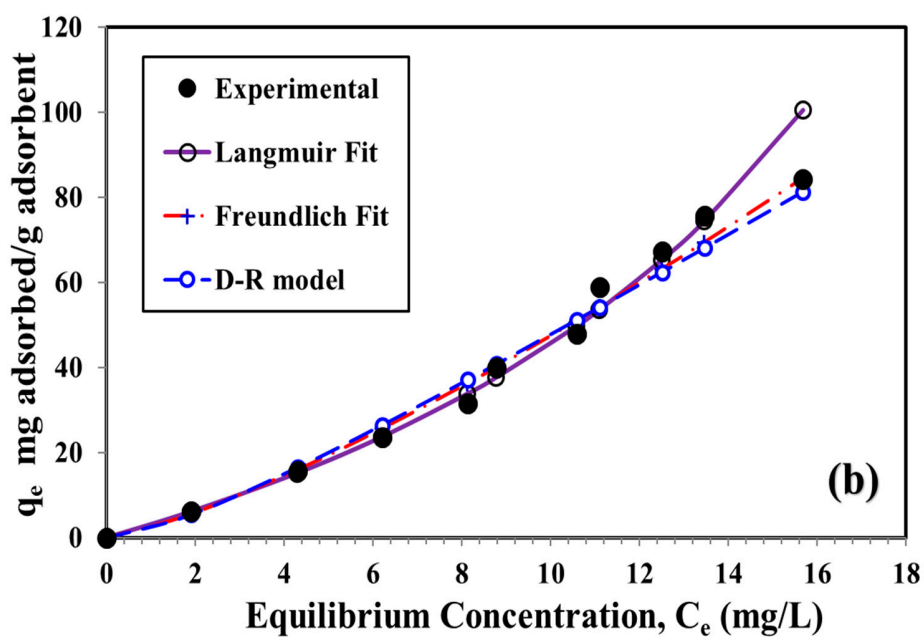
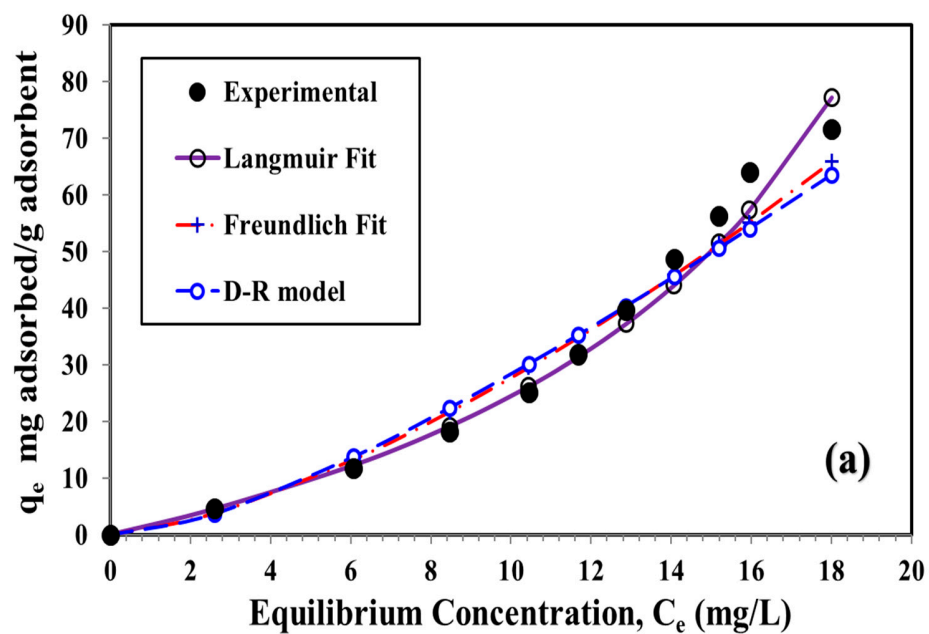


Figure S9 (a-b).