

## ***Supporting Information***

# **Insight into the adsorption and photocatalytic behaviors of Organo-bentonite/Co<sub>3</sub>O<sub>4</sub> green nanocomposite for Malachite green synthetic dye and Cr (VI) metal ions; application and mechanisms**

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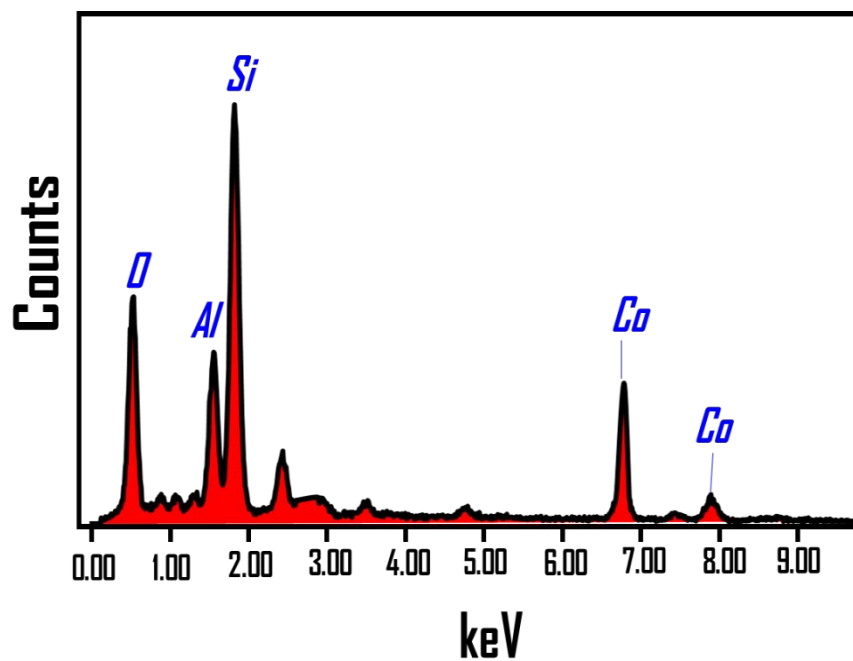
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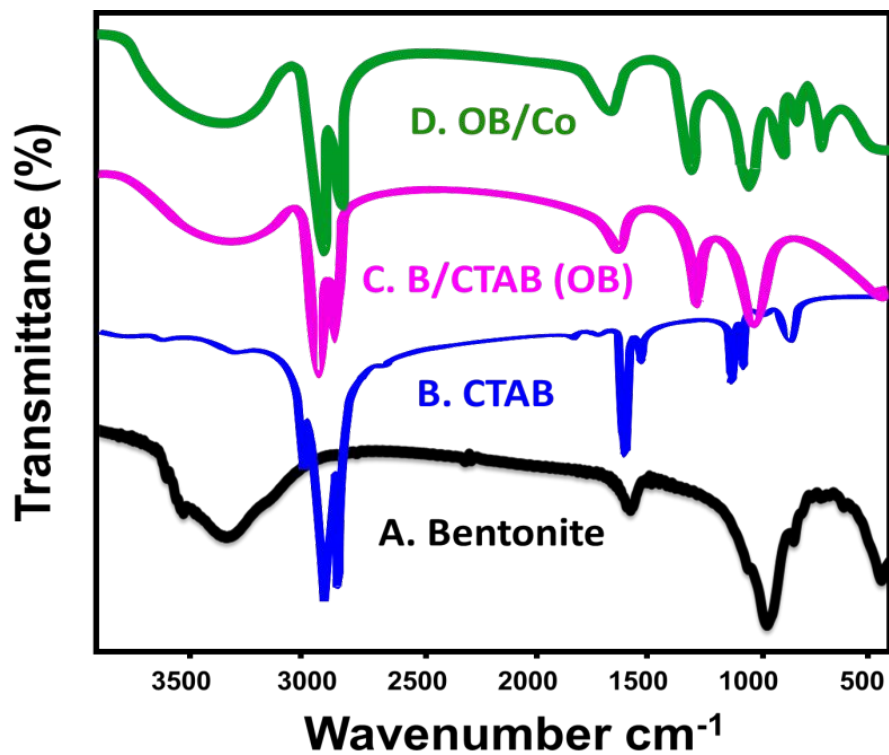
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## 1. EDX analysis



**Figure S1.** EDX analysis of organo-bentonite supported by  $\text{Co}_3\text{O}_4$  (OB/Co)

## 2. FT-IR spectra



**Figure S2.** FTIR spectra of bentonite (A), cetyltrimethylammonium bromide (CTAB) (B), organically modified bentonite OB) (C) and organo-bentonite supported by  $\text{Co}_3\text{O}_4$  (OB/Co) (D)

### 3. Elovich model

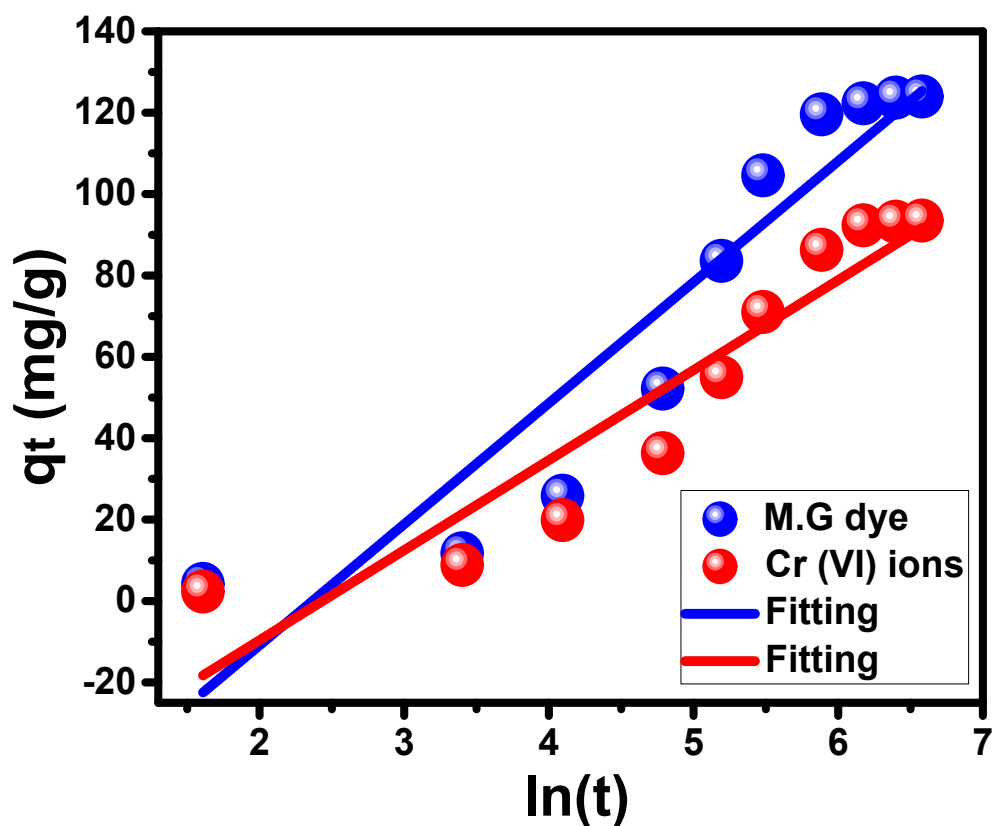
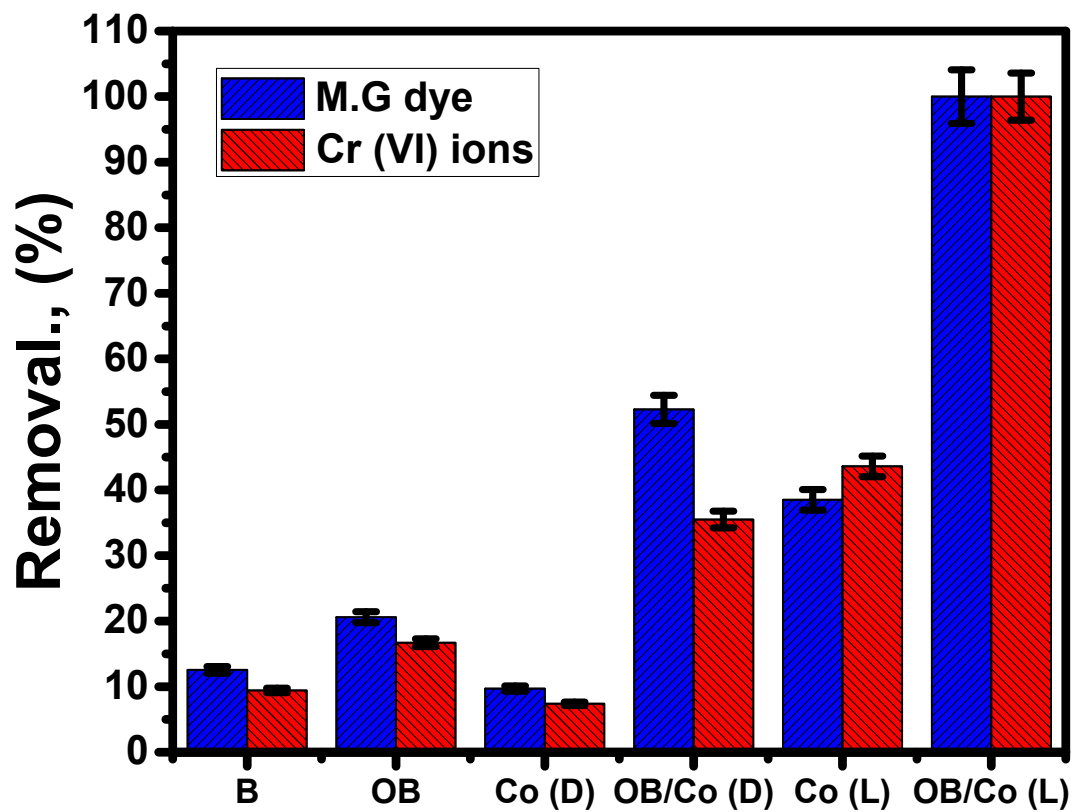


Figure S3. Fitting the adsorption results of M.G and Cr (VI) with Elovich kinetic model

#### 4. Effect of the integrating process



**Figure S4.** The effect of the integration process in enhancing the adsorption and photocatalytic performance of the composite in the removal of M.G and Cr (VI)