

## **Supplementary Materials**

**Eco-friendly and economic, adsorptive removal of cationic and anionic dyes by bio-based  
karaya gum - chitosan sponge**

**Rohith K. Ramakrishnan <sup>1</sup>, Vinod V.T. Padil<sup>1\*</sup>, Stanisław Waclawek<sup>1</sup>, Miroslav Černík<sup>1\*</sup>,  
and Rajender S Varma <sup>2\*</sup>**

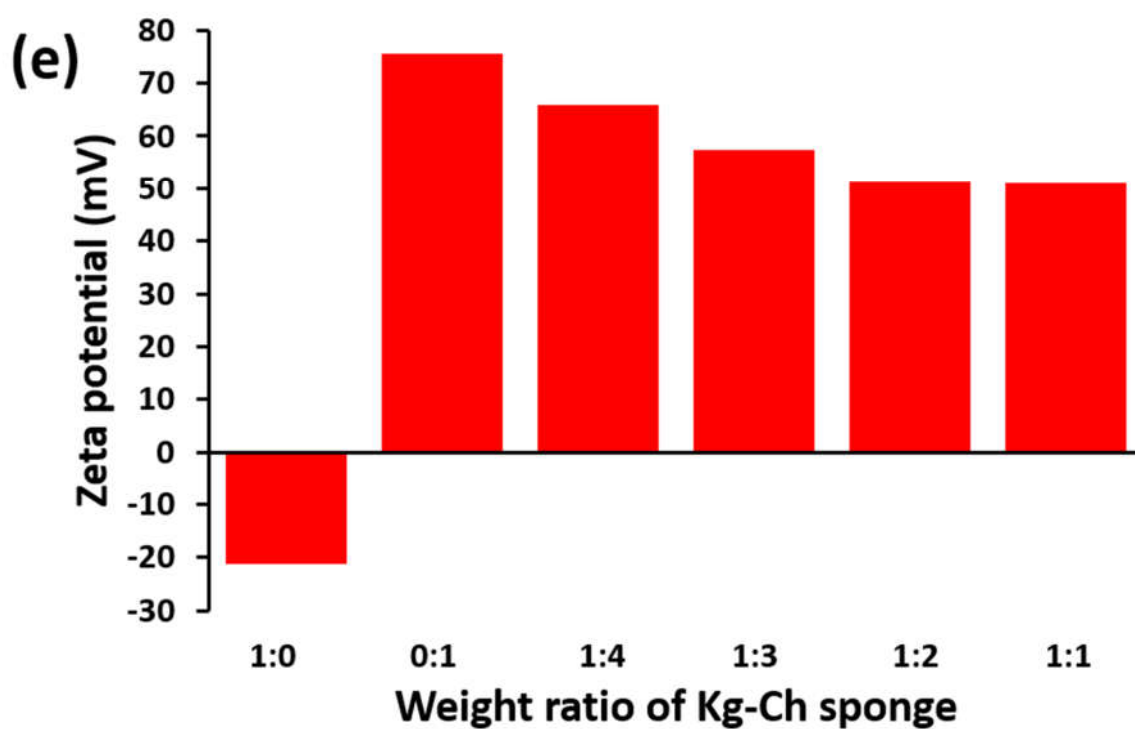
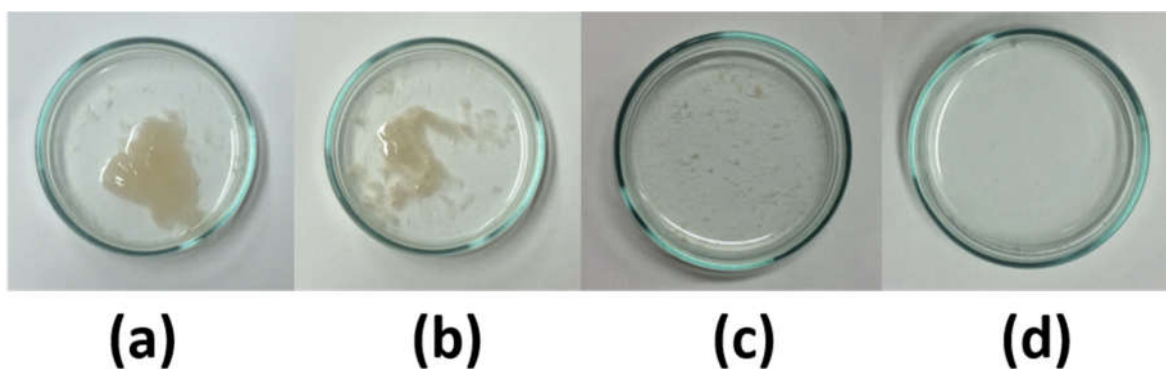
<sup>1</sup>Institute for Nanomaterials, Advanced Technologies and Innovation (CXI), Technical University of Liberec (TUL), Studentská 1402/2, Liberec 1, Czech Republic, 461 17; Telephone: +420 723372911.

<sup>2</sup>Regional Centre of Advanced Technologies and Materials, Palacký University in Olomouc, Šlechtitelů 27, 783 71 Olomouc, Czech Republic.

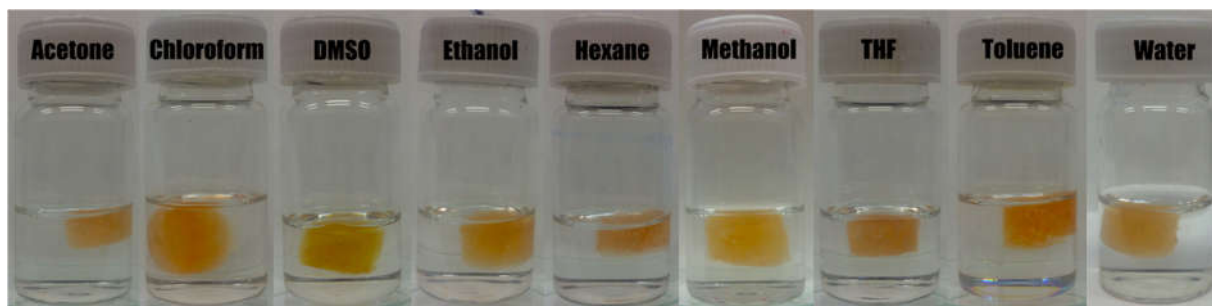
\*Correspondence: Authors' Email: vinod.padil@tul.cz (V.V.T.P); Miroslav.cernik@tul.cz (M.C); and Varma.Rajender@epa.gov (R.S.V).

Number of pages: 4 (1 to 4)

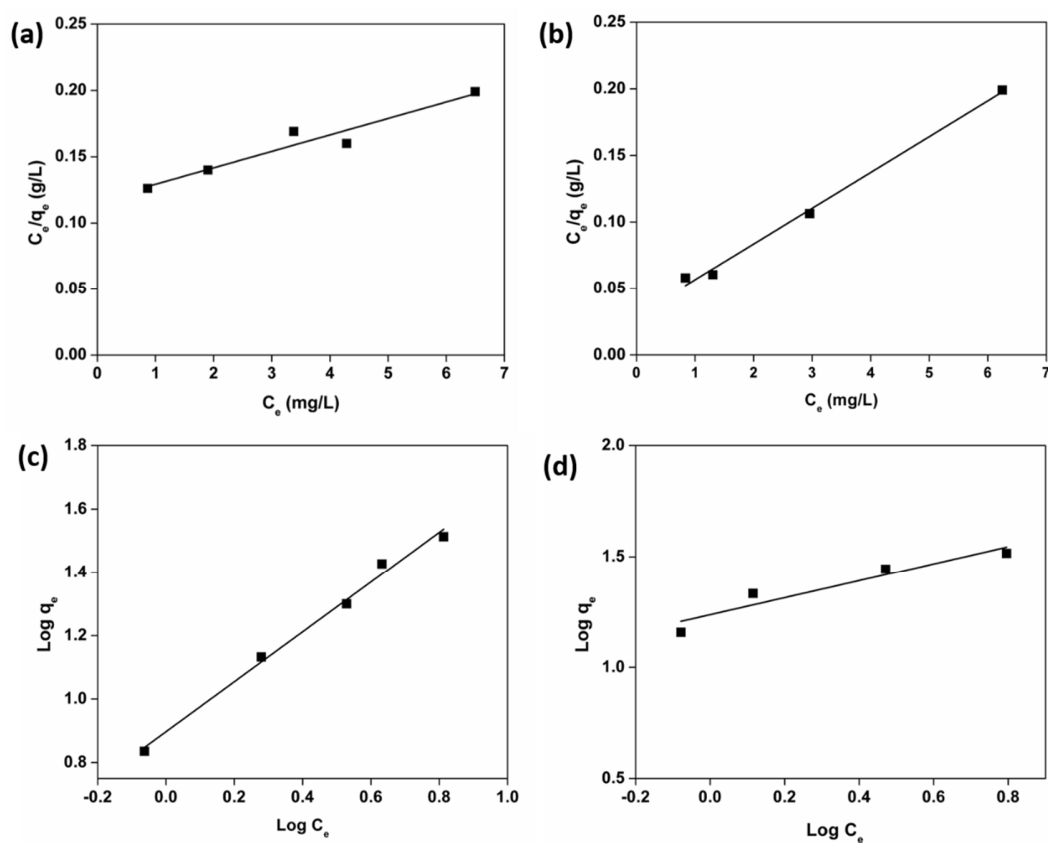
Number of figures: 4



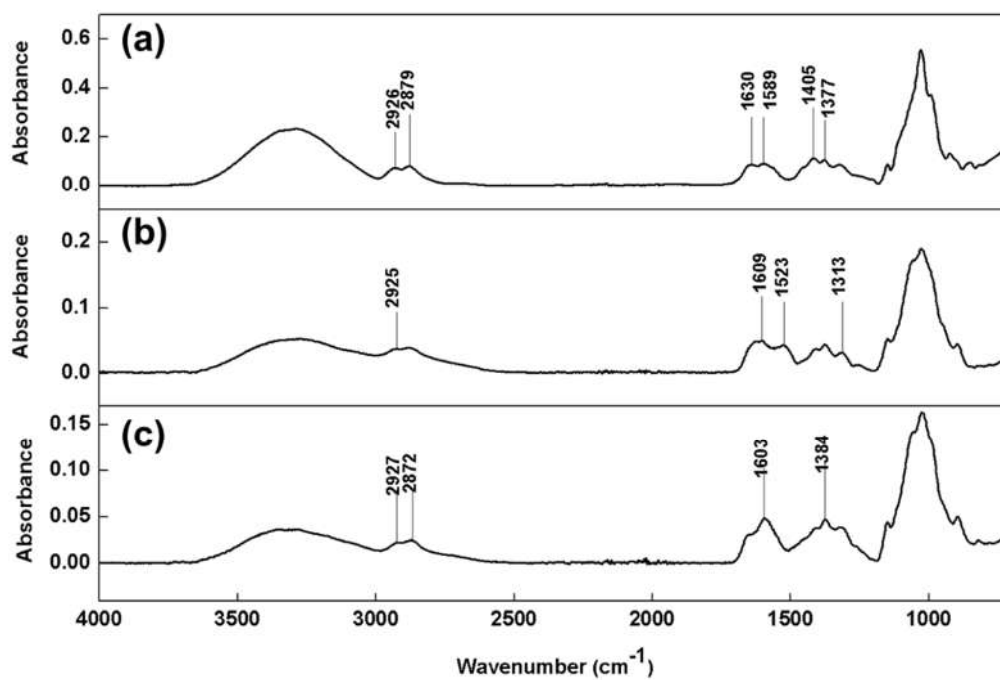
**Figure S1.** The ratio of Kg:Ch (a) 1:1 wt.%, (b) 1:2 wt.%, (c) 1:3 wt.% and (d) 1:4 wt.%; (e) Zeta potential values versus the weight ratios of Kg:Ch (1:0, 0:1; 1:4; 1:3; 1:2, and 1:1).



**Figure S2.** The chemical stability of K-g-Ch sponge immersed in various solvents for a period of more than 24 h at 25<sup>0</sup>C.



**Figure S3:** (a and b) Langmuir and (c and d) Freundlich adsorption isotherm models for the adsorption of MB and MO onto K-g-Ch sponge.



**Figure S4.** ATR-FTIR analysis of the (a) Kg-Ch sponge, (b) Kg-Ch sponge after MO adsorption and (c) Kg-Ch sponge after MB adsorption.