Electronic Supplementary Material (ESI) for CrystEngComm

Cu^{II}-based metal-organic nanoballs for very rapid adsorption of dyes and iodine

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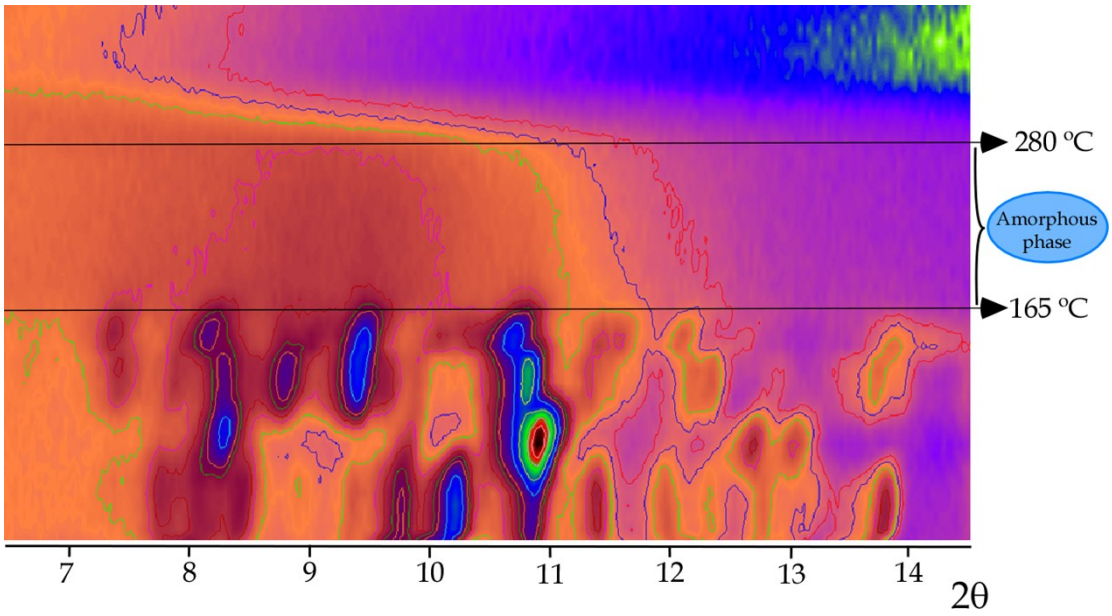

Fig. S1 Thermodiffractometry of **MOP@Ei2-1.**

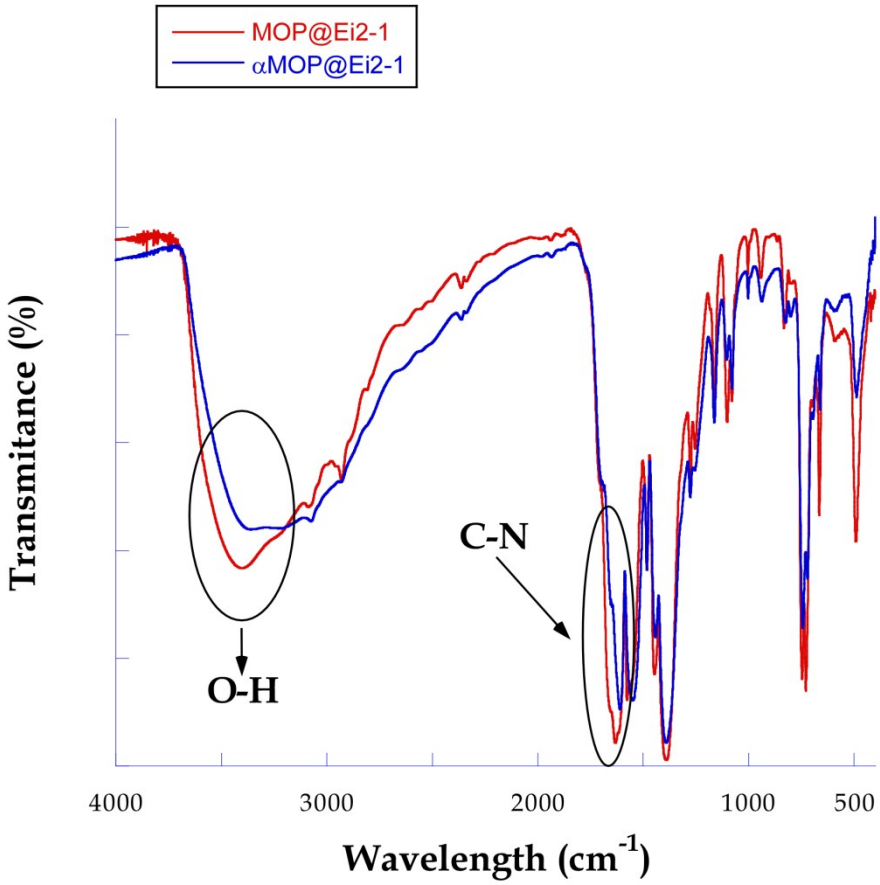

Fig. S2 IR spectra of **MOP@Ei2-1** (blue) and **αMOP@Ei2-1** (red).

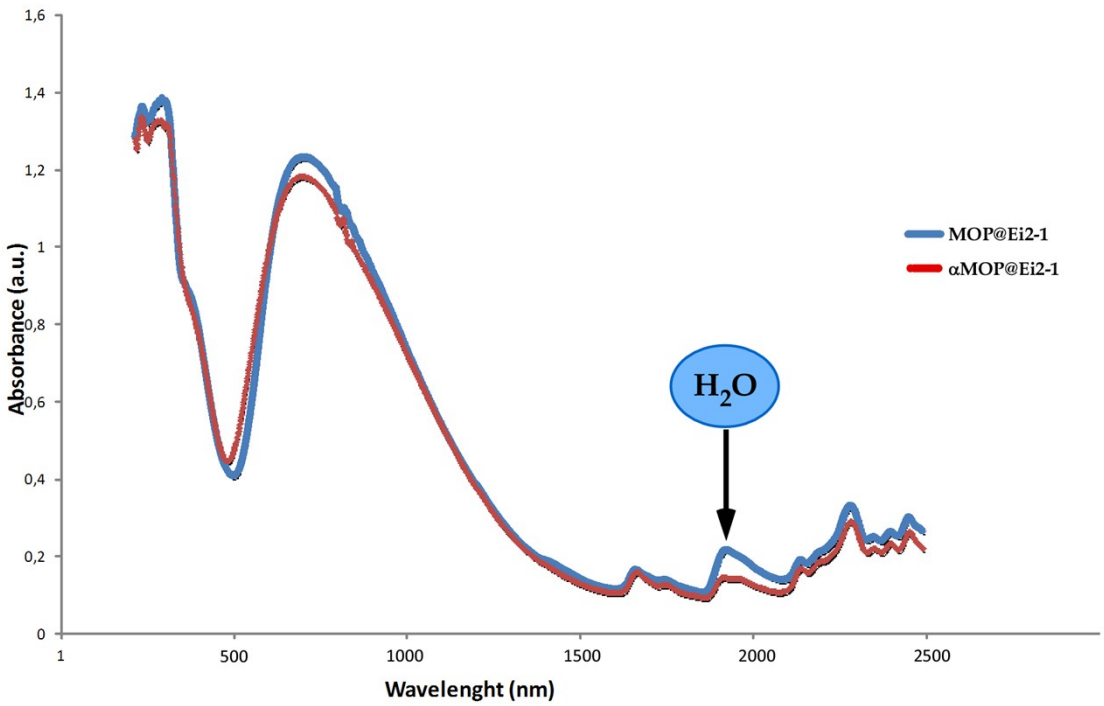

Fig. S3 UV-Vis diffuse reflectance of **MOP@Ei2-1** and **αMOP@Ei2-1**.

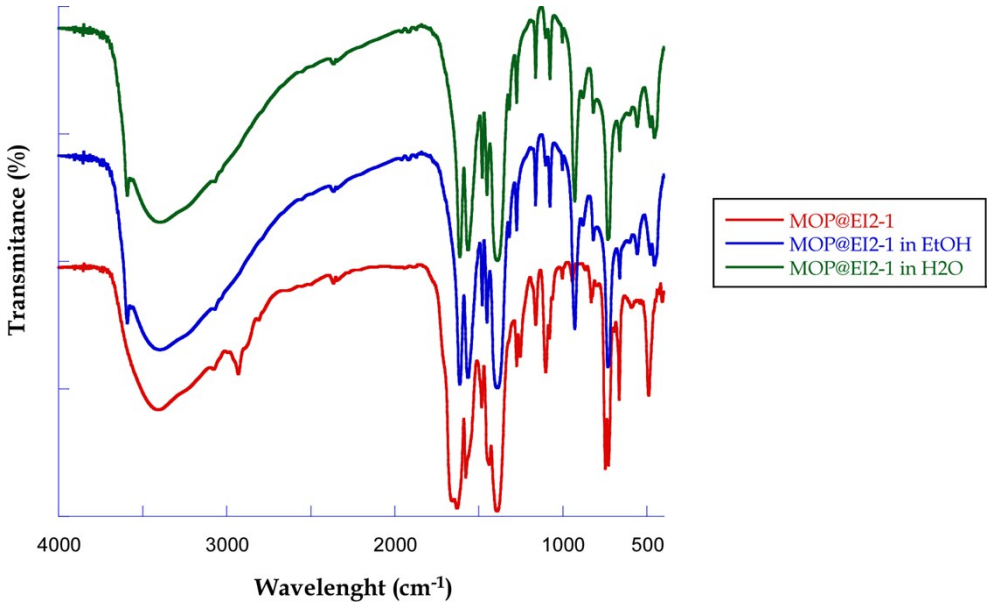

Fig. S4 IR of **MOP@Ei2-1** (red) and samples of **MOP@Ei2-1** after 3 days dispersed in boiling water (green) and in boiling EtOH (blue).

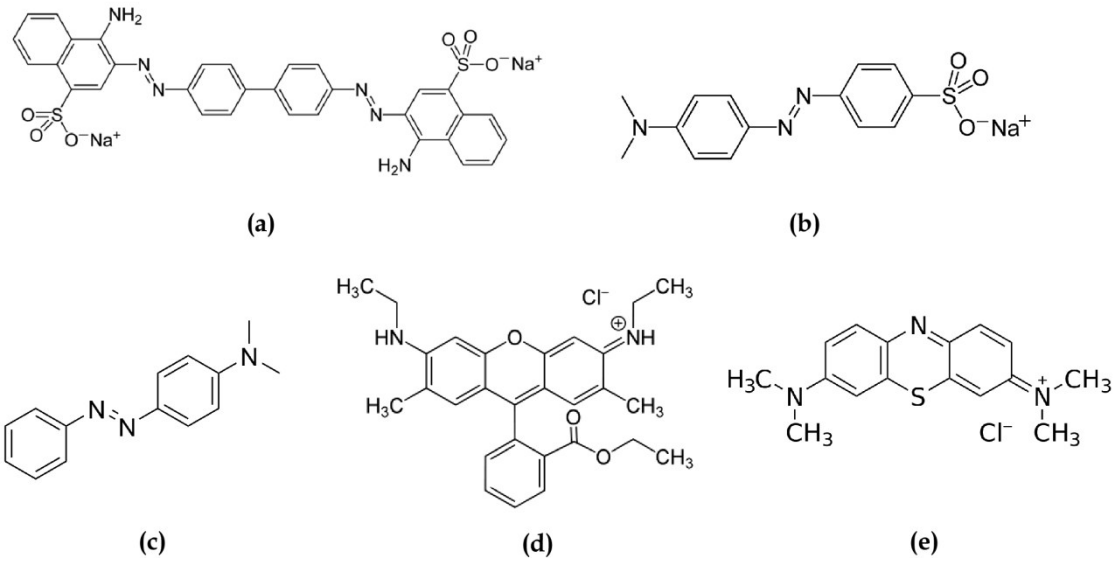

Fig. S5 Lewis Structures of dyes used: (a) Congo Red (**CR**), (b) Methyl Orange (**MO**), (c) Dimethyl Yellow (**DY**), (d) Rhodamine 6G (**R6G**) and (e) Methylene Blue (**MB**).

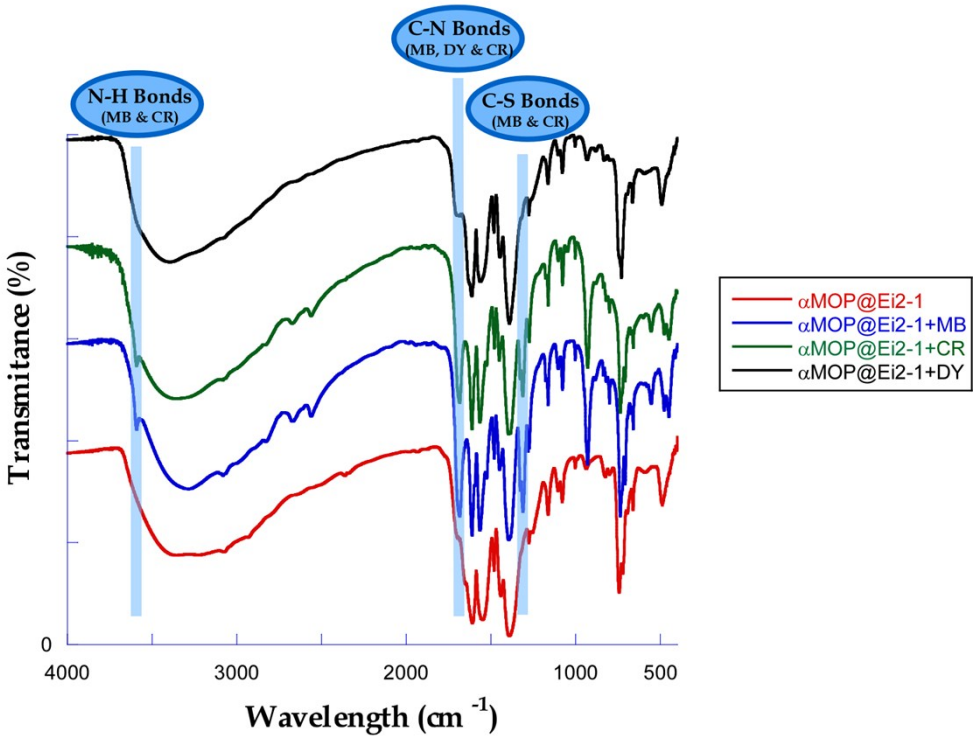

Fig. S6 IR of **αMOP@Ei2-1** and samples of **αMOP@EI2-1** loaded with **MB**, **CR** and **DY.**

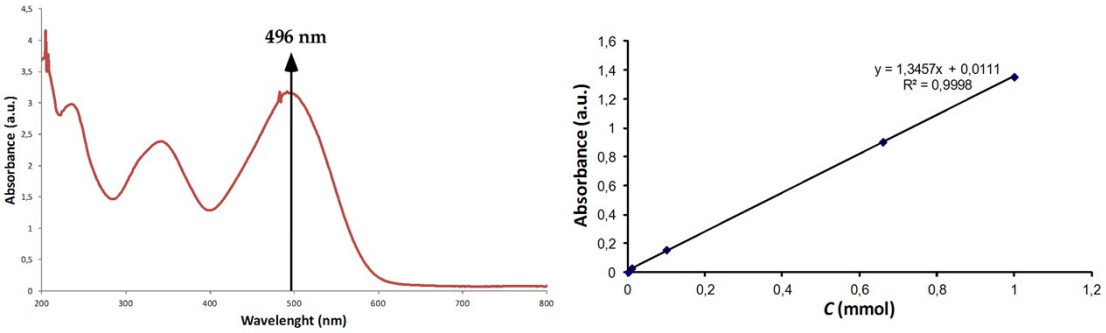

Fig. S7 (a) **CR** UV-Vis spectrum and (b) calibration line performed with solutions of different concentrations of **CR** ($1x10^{-4}$ M, $1x10^{-5}$ M, $1x10^{-6}$ M and $1x10^{-7}$ M). UV-Vis measurements for **CR** were performed at 496 nm.

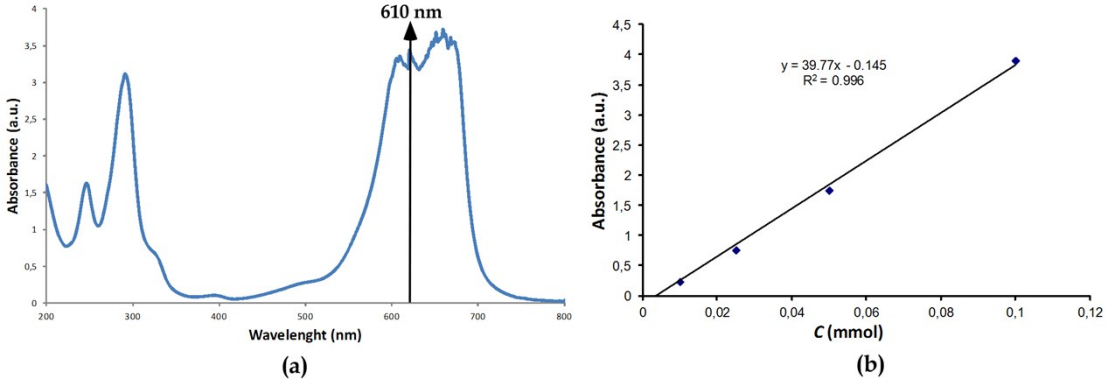

Fig. S8 (a) **MB** UV-Vis spectrum and (b) calibration line performed with solutions of different concentrations of **MB** ($1x10^{-4}$ M, $1x10^{-5}$ M, $1x10^{-6}$ M and $1x10^{-7}$ M). UV-Vis test for **MB** were measured at 610 nm.

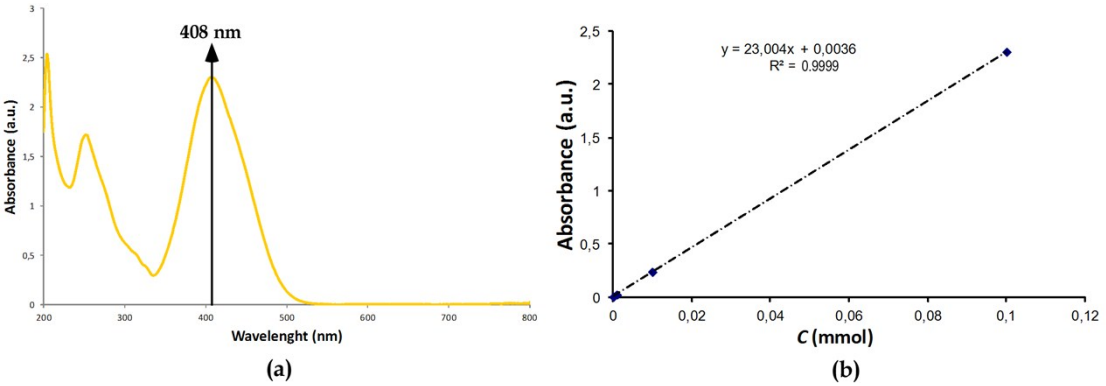

Fig. S9 (a) **DY** UV-Vis spectrum and (b) calibration line performed with solutions of different concentrations of **DY** ($1x10^{-4}$ M, $1x10^{-5}$ M, $1x10^{-6}$ M and $1x10^{-7}$ M). UV-Vis test for **DY** were measured at 408 nm.

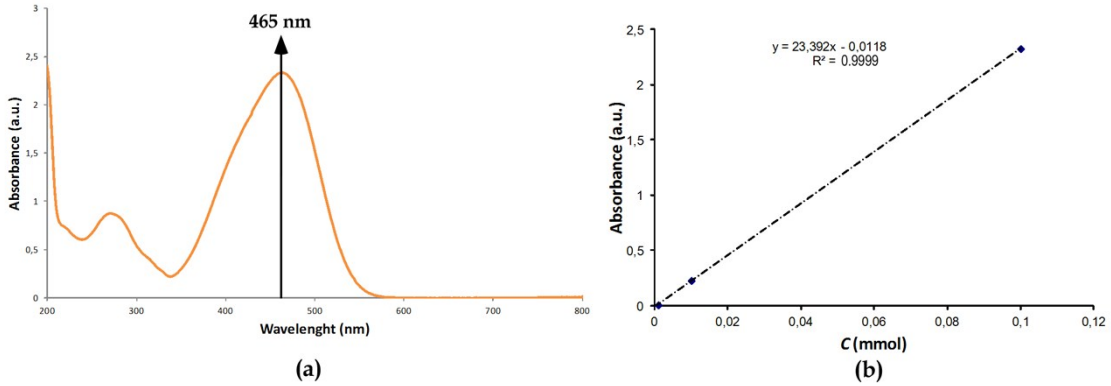

Fig. S10 (a) **MO** UV-Vis spectrum and (b) calibration line performed with solutions of different concentrations of **MO** ($1x10^{-4}$ M, $1x10^{-5}$ M, $1x10^{-6}$ M and $1x10^{-7}$ M). UV-Vis test for **MO** were measured at 465 nm.

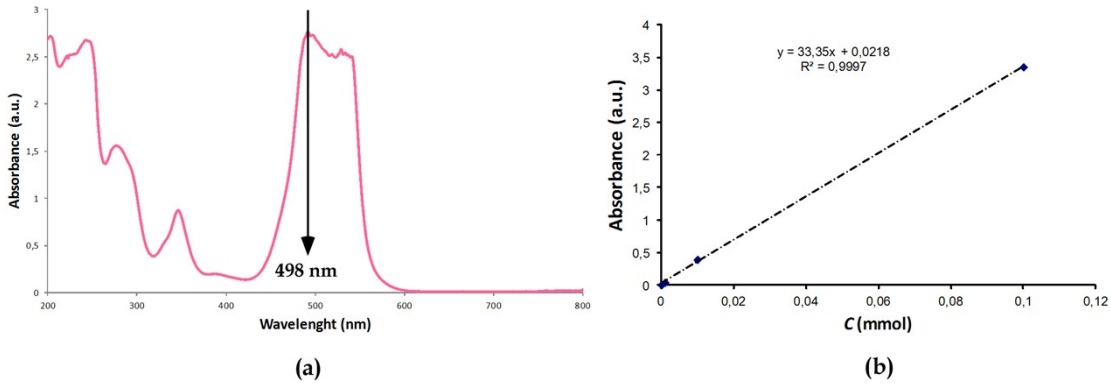

Fig. S11 (a) **R6G** UV-Vis spectrum and (b) calibration line performed with solutions of different concentrations of **R6G** ($1x10^{-4}$ M, $1x10^{-5}$ M, $1x10^{-6}$ M and $1x10^{-7}$ M). UV-Vis test for **R6G** were measured at 498 nm.

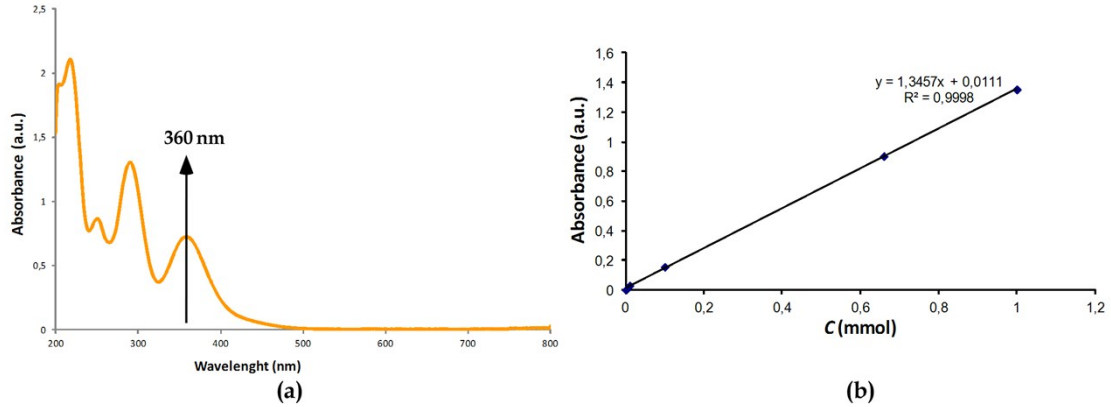

Fig. S12 (a) $\mathbf{I_2}$ UV-Vis spectrum and (b) calibration line performed with solutions of different concentrations of $\mathbf{I_2}$ ($1x10^{-3}$ M, $1x10^{-4}$ M, $1x10^{-5}$ M, $1x10^{-6}$ M and $1x10^{-7}$ M). UV-Vis test for $\mathbf{I_2}$ were measured at 360 nm.

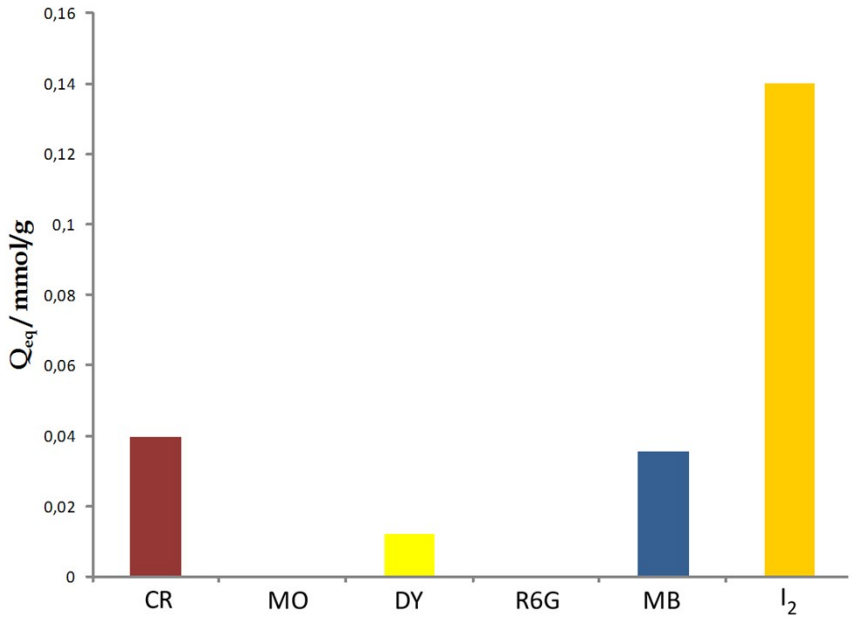

Fig. S13 View of the removed quantities of dyes and iodine after 7 days.

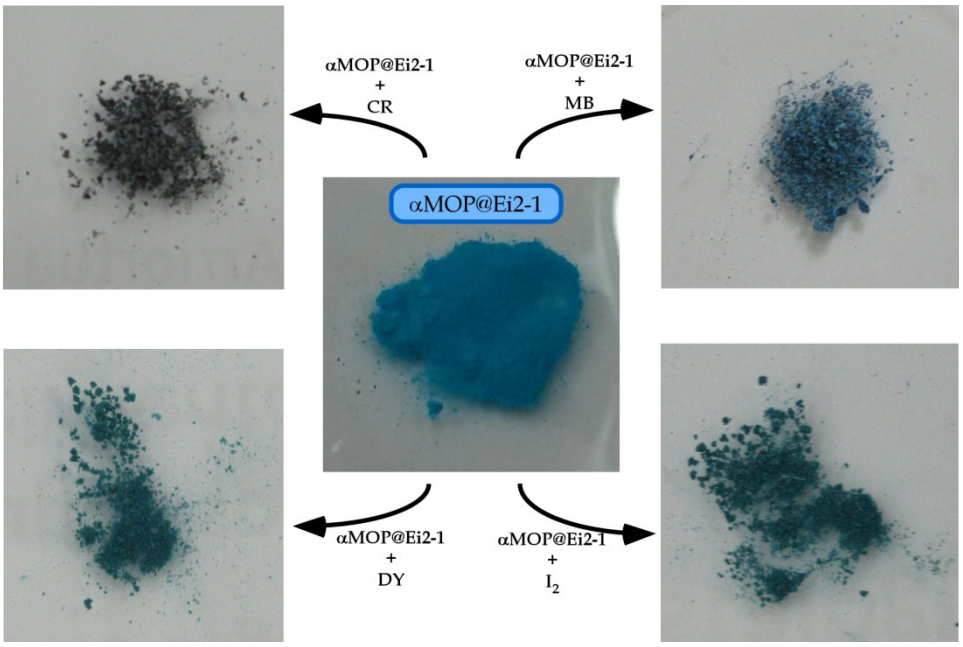

Fig. S14 Color changes of **αMOP@Ei2-1** after adsorption experiments.

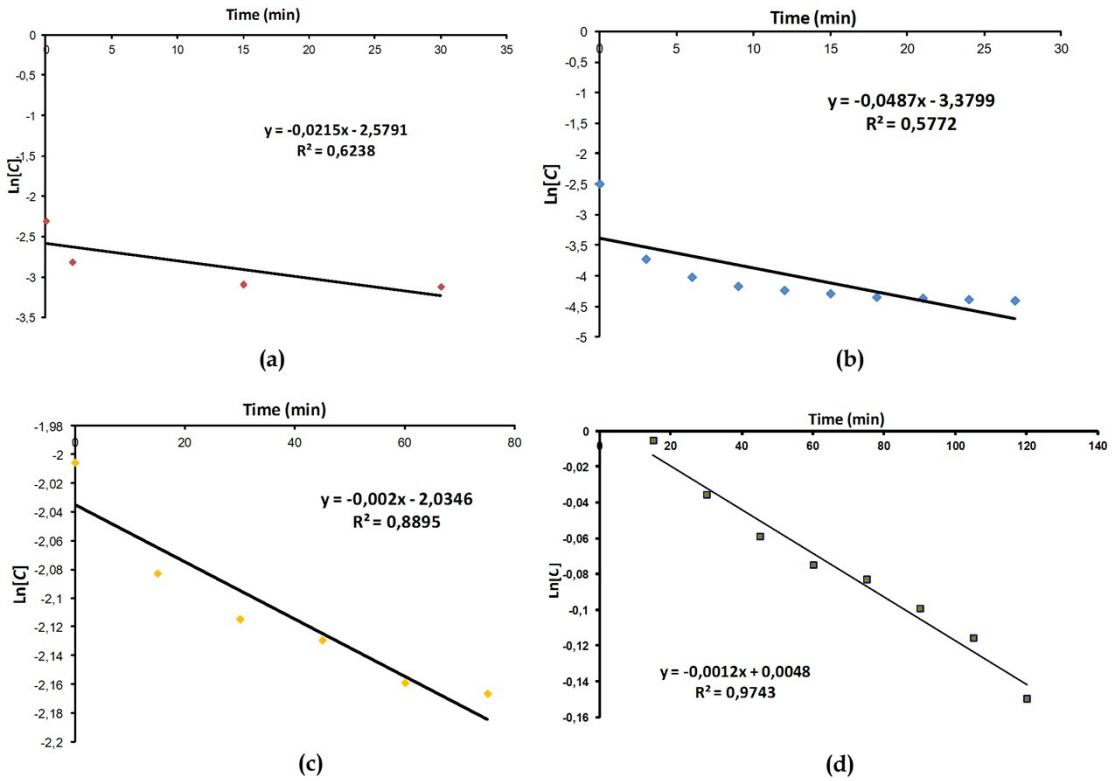

Fig. S15 First order kinetics adjustment for (a) **CR**, (b) **MB**, (c) **DY** and (d) **I_2**. First range of adsorption was taken for the adjustment, until the saturation of **αMOP@Ei2-1** begins.

Table S1 Molecular dimensions (Å) of dyes.

	MB	**CR**	**DY**	**MO**	**R6G**
x (width)	4.59	5.38	4.5	5.31	10.89
y (height)	8.01	7.9	6.0	7.25	15.72
z (length)	16.75	25.1	15.1	17.39	15.79