

# Supporting Information

for

## **New bio-nanocomposites based on iron oxides and polysaccharides, applied to oxidation and alkylation reactions**

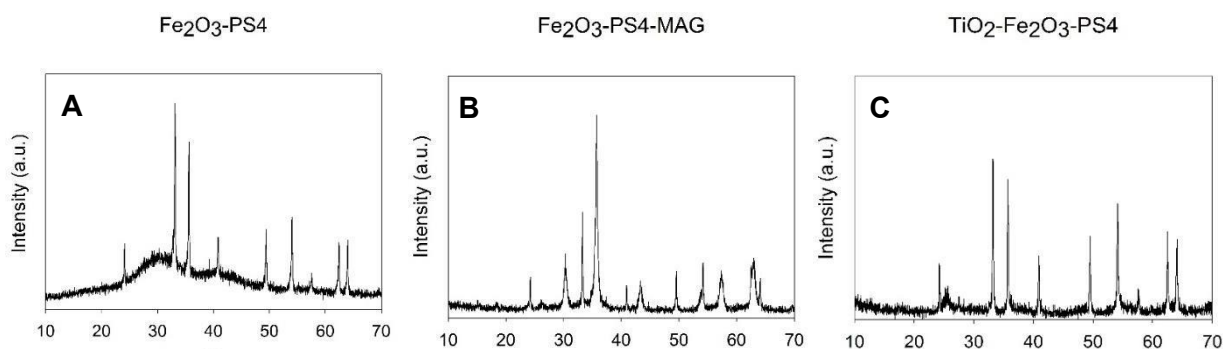
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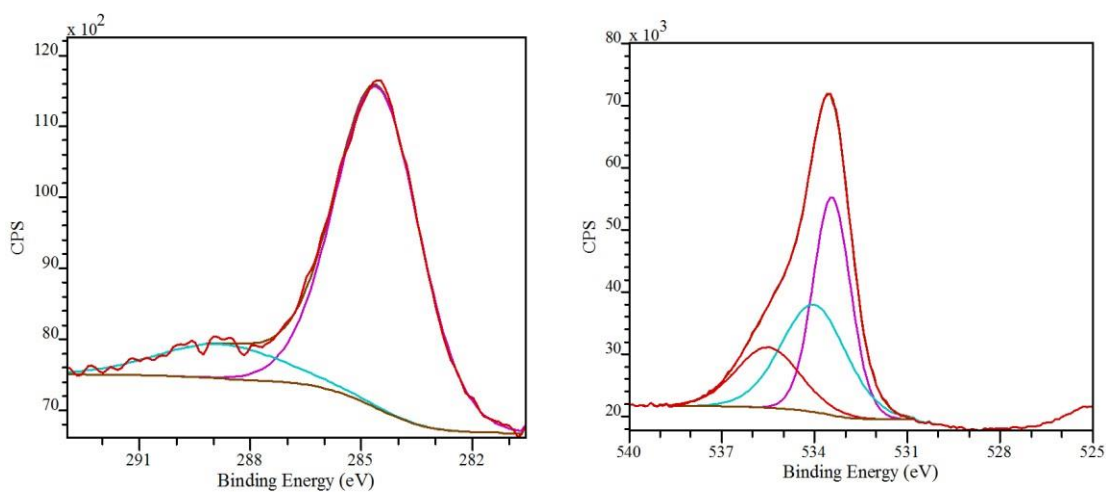
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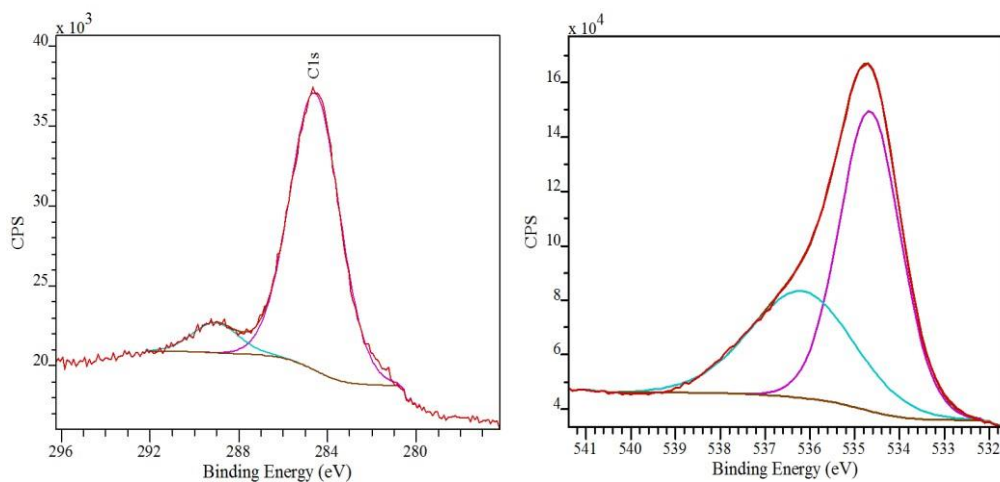
**Additional spectra**



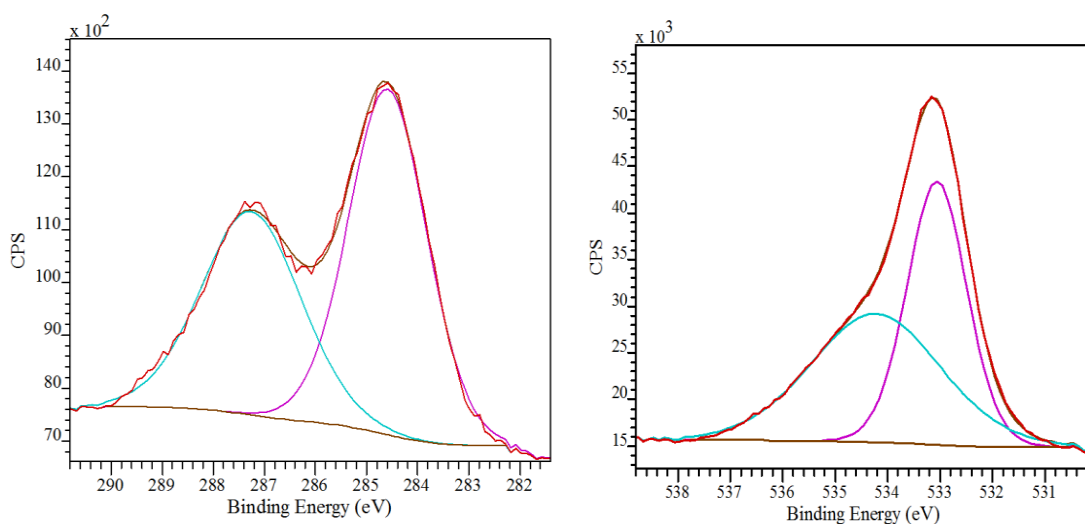
**Figure S1.** XRD patterns of A: Fe<sub>2</sub>O<sub>3</sub>-PS4, B: Fe<sub>2</sub>O<sub>3</sub>-PS4-MNP and C: TiO<sub>2</sub>-Fe<sub>2</sub>O<sub>3</sub>-PS4 nanohybrids.



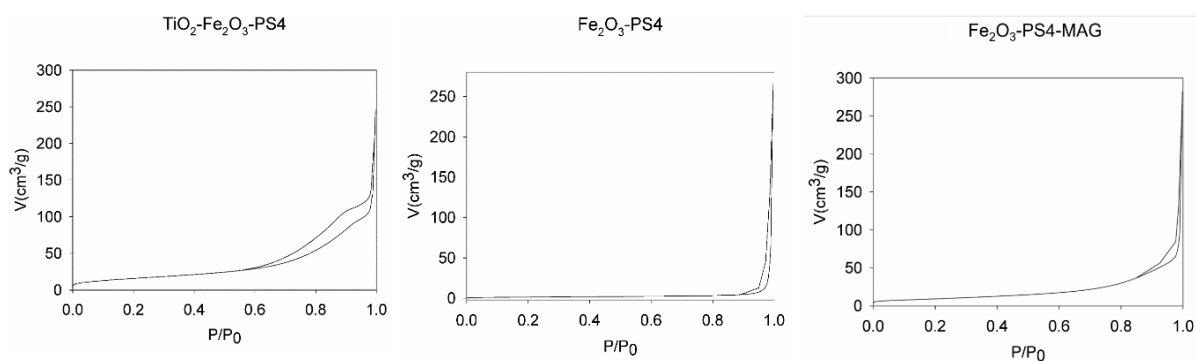
**Figure S2.** XPS spectra of TiO<sub>2</sub>-Fe<sub>2</sub>O<sub>3</sub>-PS4 nanohybrid.



**Figure S3.** XPS spectra of Fe<sub>2</sub>O<sub>3</sub>-PS4-MNP nanohybrid.



**Figure S4.** XPS spectra of Fe<sub>2</sub>O<sub>3</sub>-PS4 nanohybrid.



**Figure S5.** Adsorption-desorption isotherm of TiO<sub>2</sub>-Fe<sub>2</sub>O<sub>3</sub>-PS4, Fe<sub>2</sub>O<sub>3</sub>-PS4 and Fe<sub>2</sub>O<sub>3</sub>-PS4-MNP nanohybrids.

**Table S1:** Blank experiments of the two investigated reactions: 1) alkylation of toluene and 2) oxidation of benzyl alcohol.

Reaction	Conversion (%)
Alkylation of toluene	<1
Oxidation of benzyl alcohol	<1