Electronic Supplementary Information (ESI)

TiO_2/ZIF-67 nanocomposites synthesized by the microwave-assisted solvothermal method: a correlation between the synthesis conditions and antimicrobial properties

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XPS Analysis

Fig. S1 XPS deconvolutions for the synthesized TiO_2: Ti 2p (a), O 1s (b) and C 1s (c).

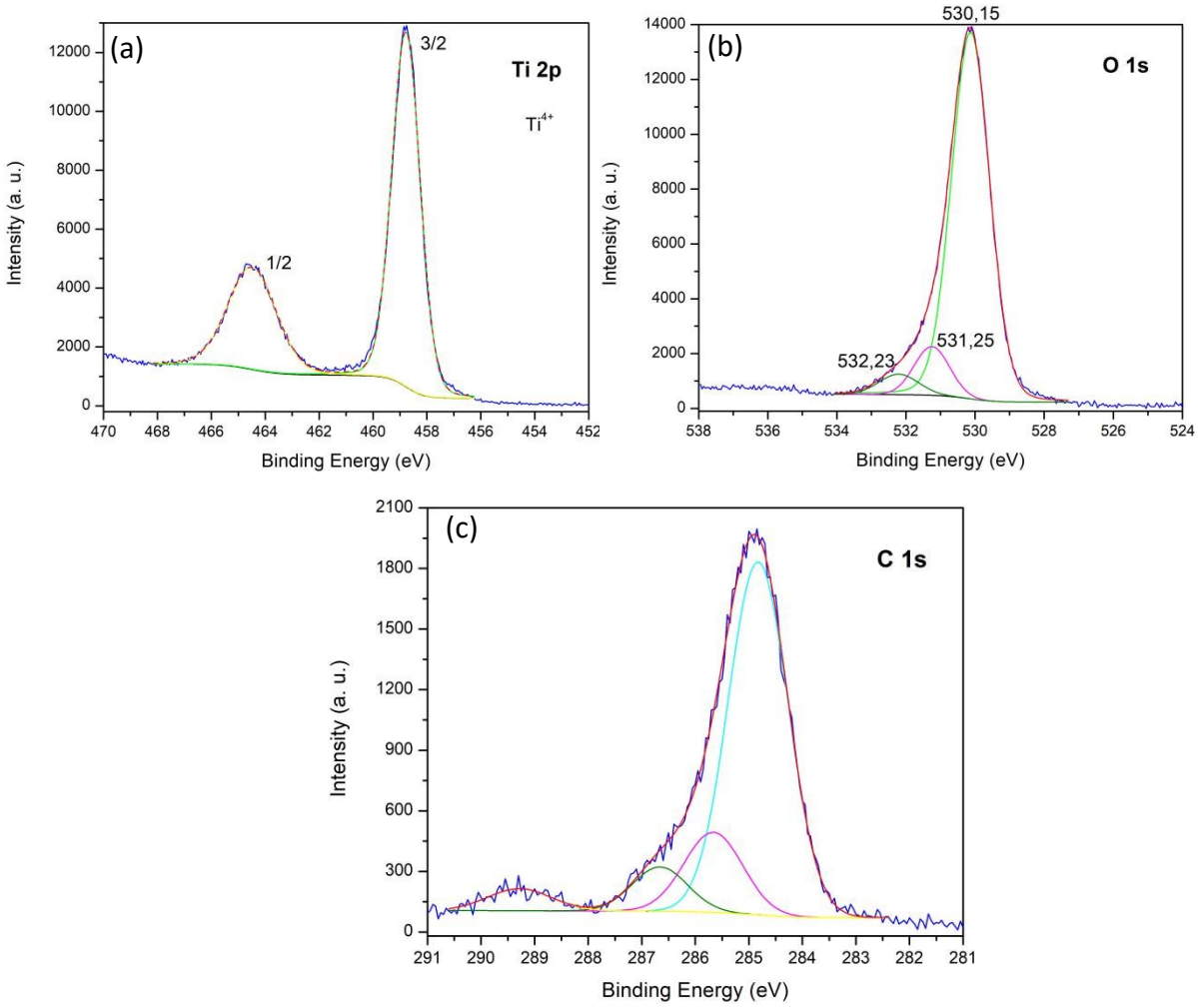


Fig. S2 XPS deconvolutions for the synthesized ZIF-67: Co 2p (a), O 1s (b), N 1s (c) and C 1s (d).

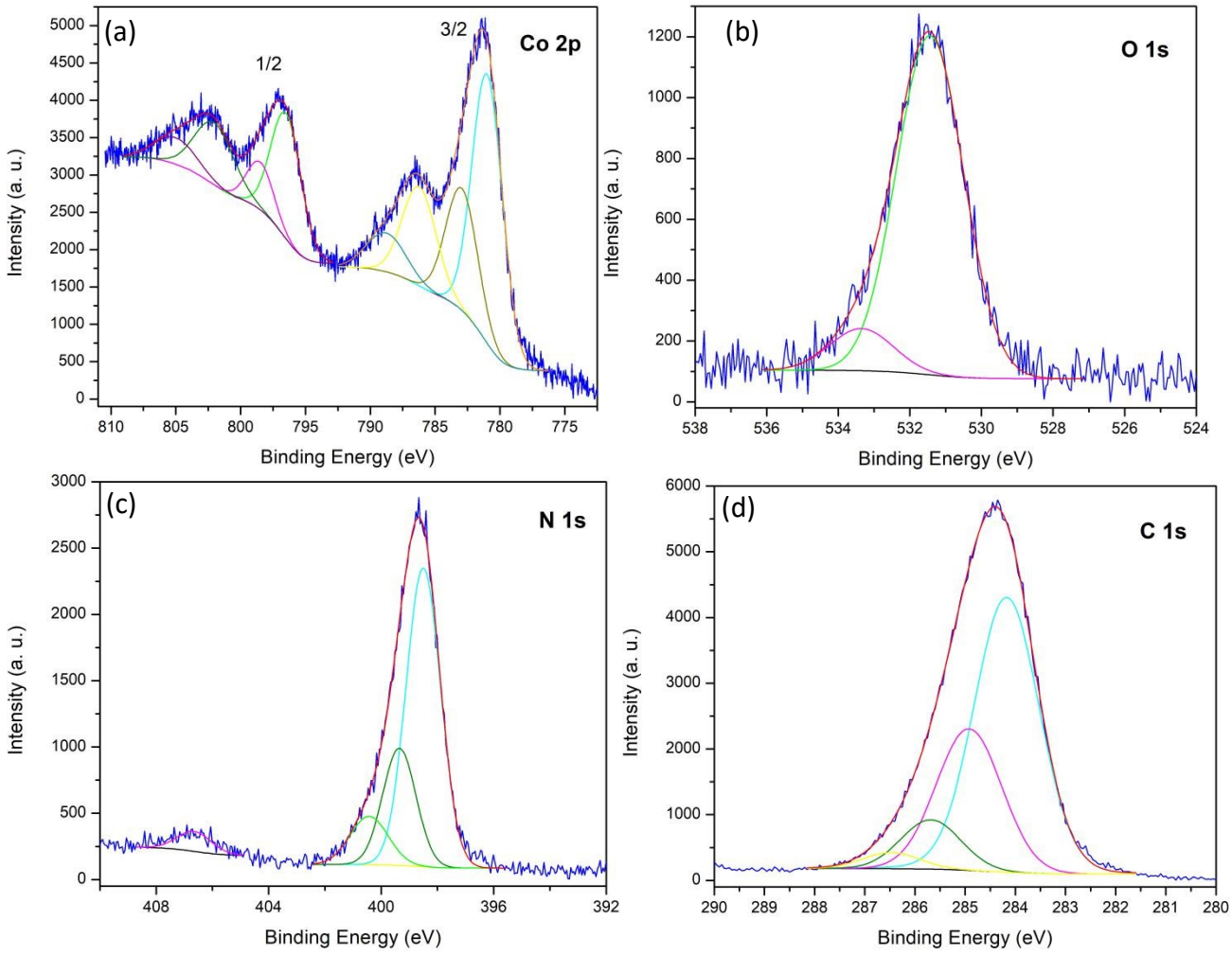


Fig. S3 XPS deconvolutions for the synthesized TSC: Co 2p (a), N 1s (b) and C 1s (c).

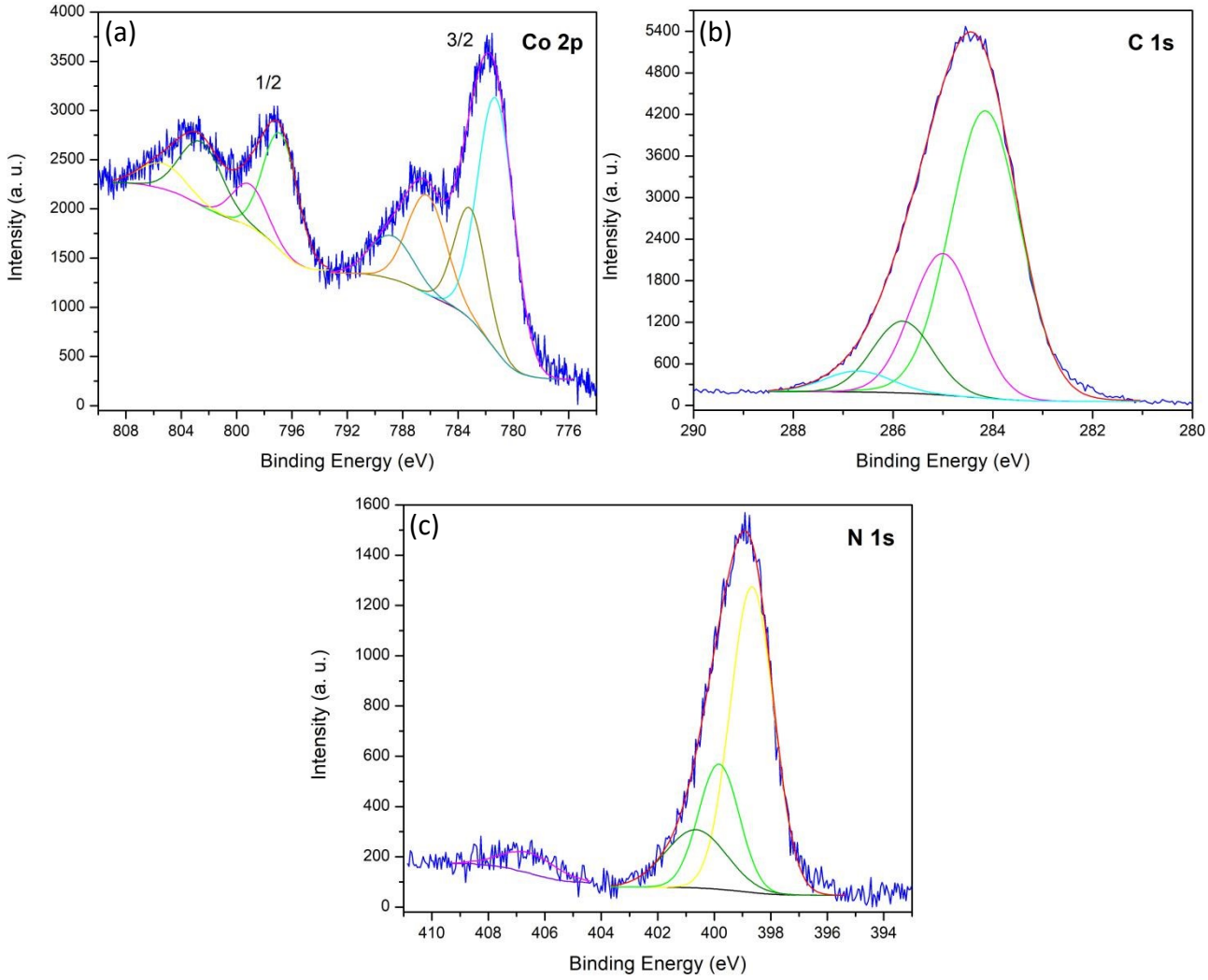
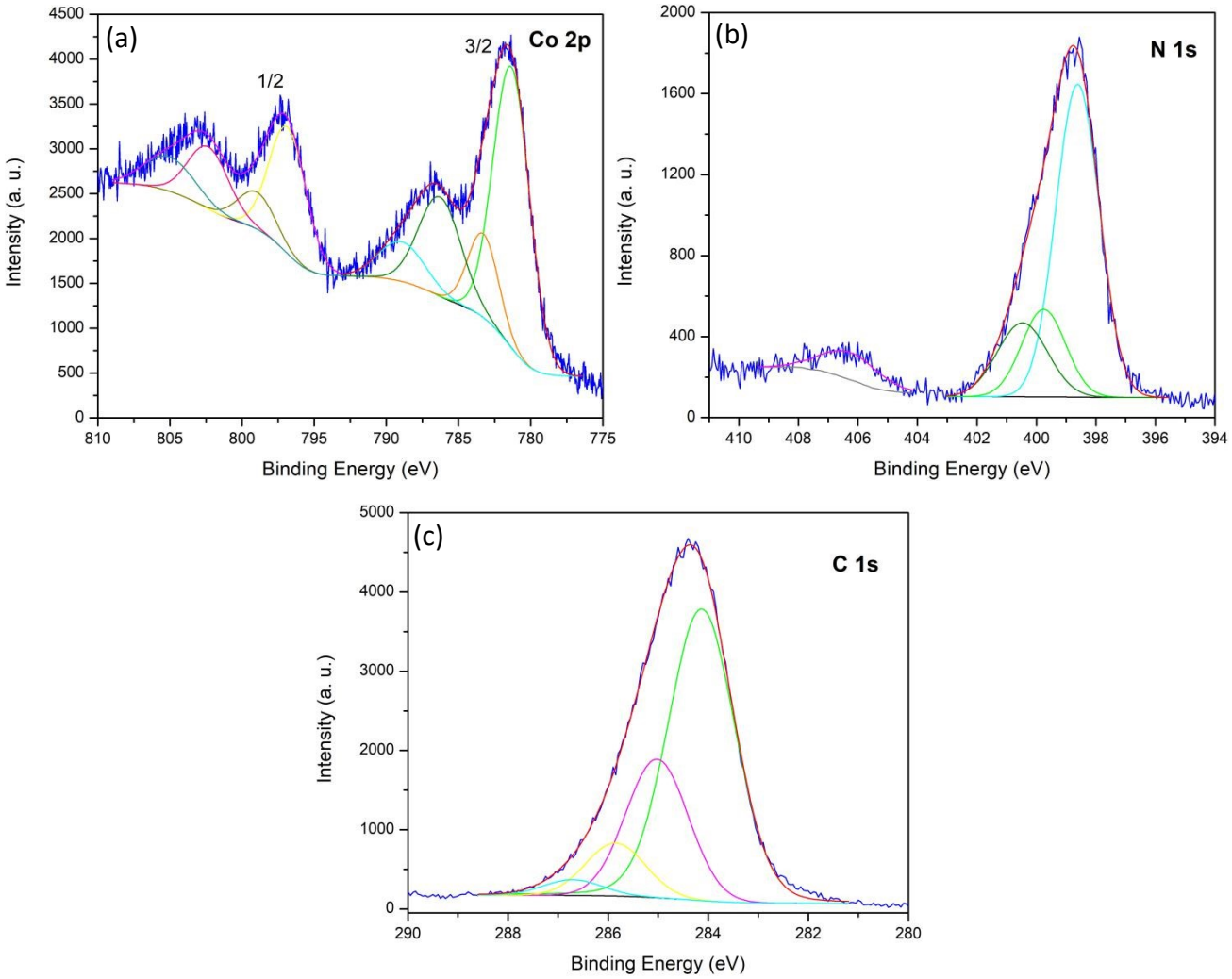
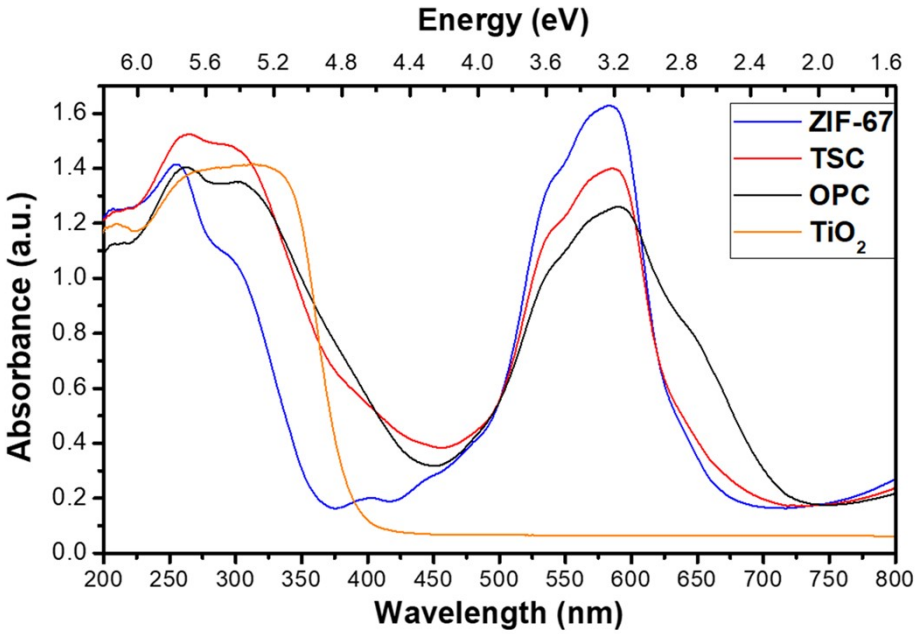


Fig. S4 XPS deconvolutions for the synthesized OPC: Co 2p (a), N 1s (b) and C 1s (c).



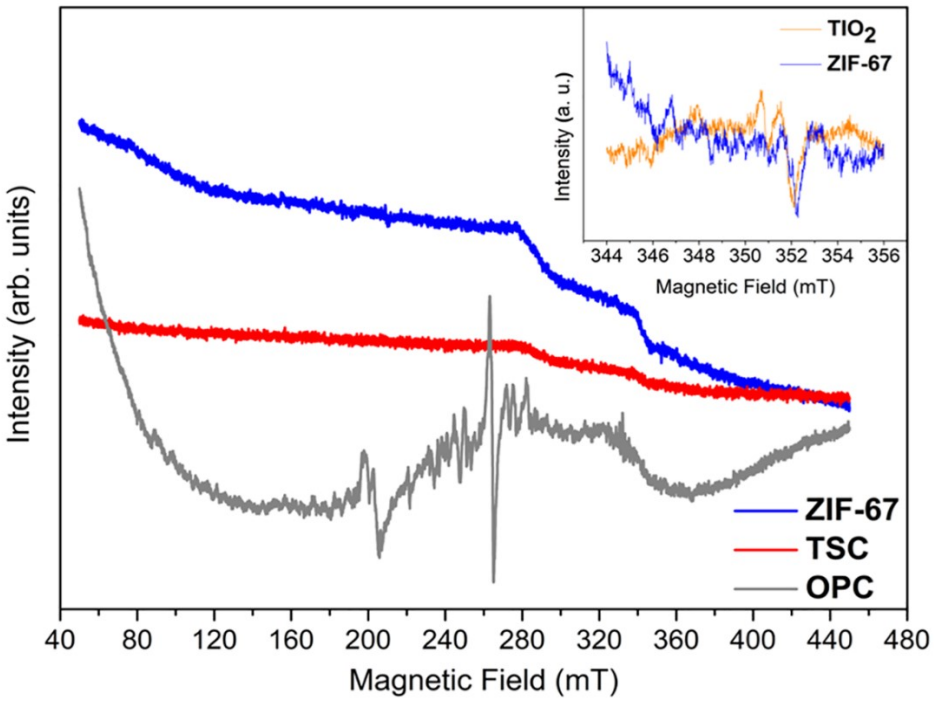
UV-vis analysis

Fig. S5 UV-vis spectra of the composites and pristine compounds



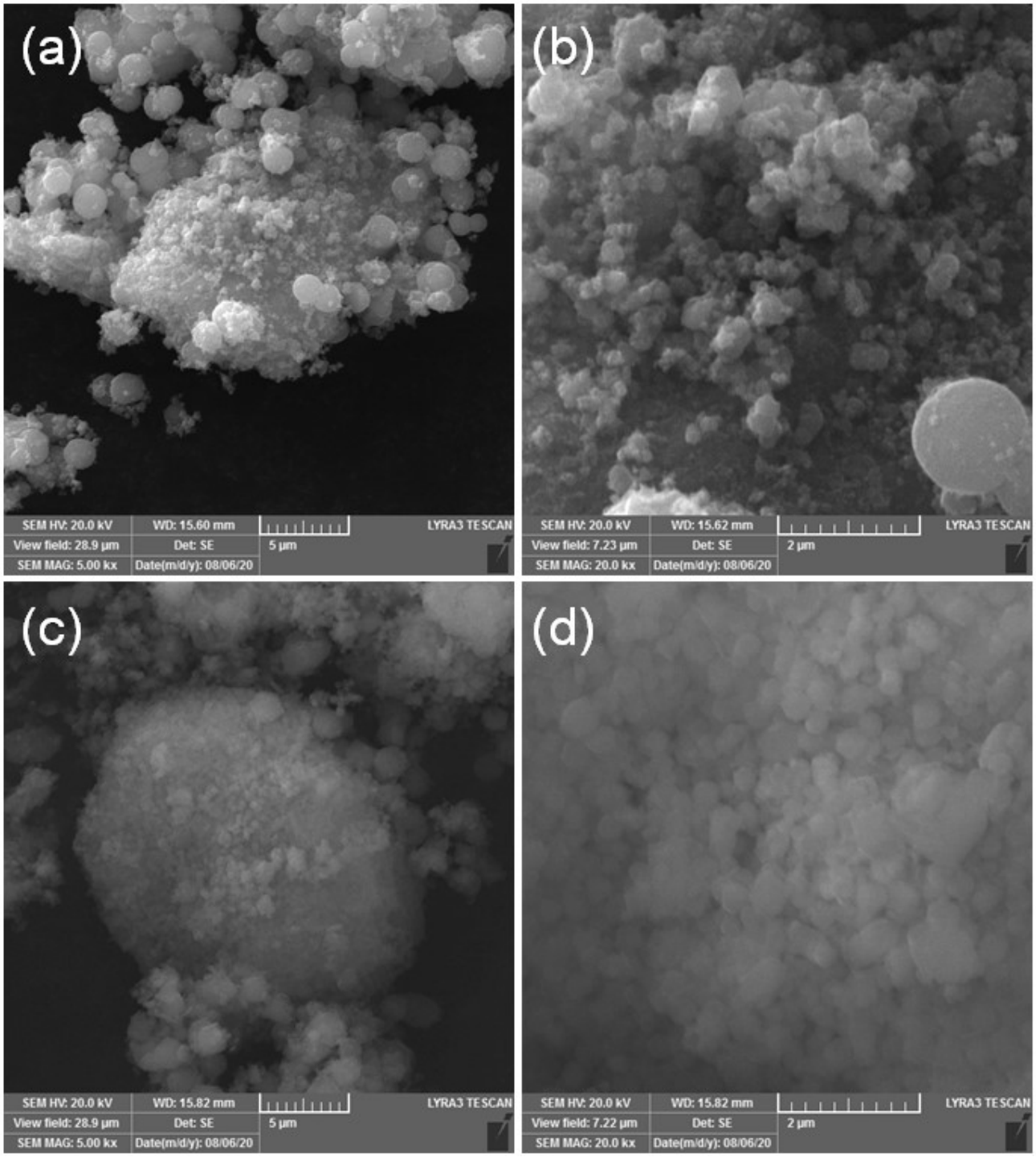
EPR Measurements

Fig. S6 EPR spectra of the pure TiO2 and ZIF-67 compounds and their corresponding OPC and TSC composites. The inset indicates the low EPR signal observed for the pristine compounds.



SEM analysis

Fig. S7 SEM images of the synthesized pristine TiO_2 (a,b) and ZIF-67 (c,d) compounds



TEM/HR-TEM analysis

Fig. S8 TEM (images of the synthesized pristine ZIF-67 sample.

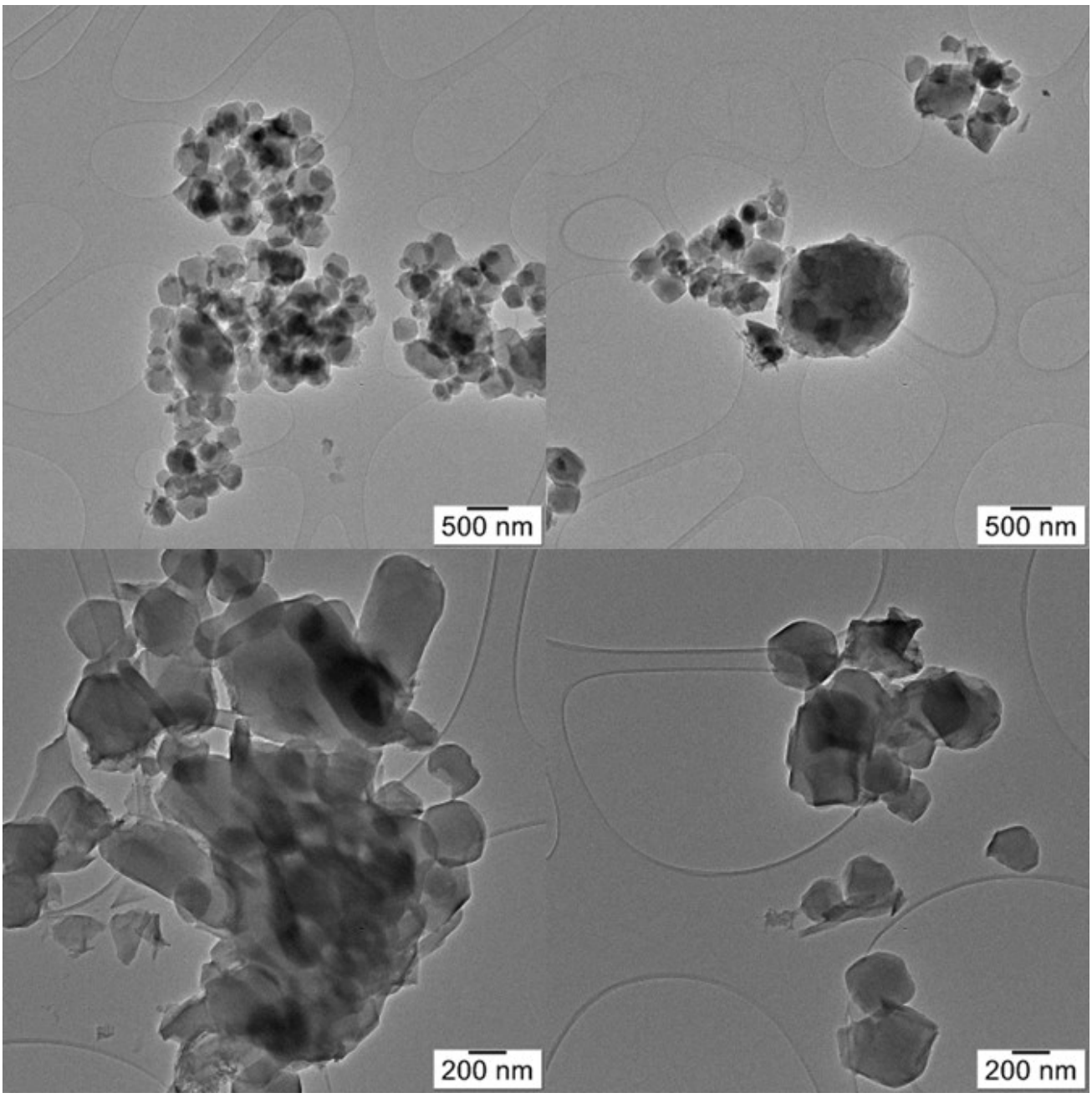
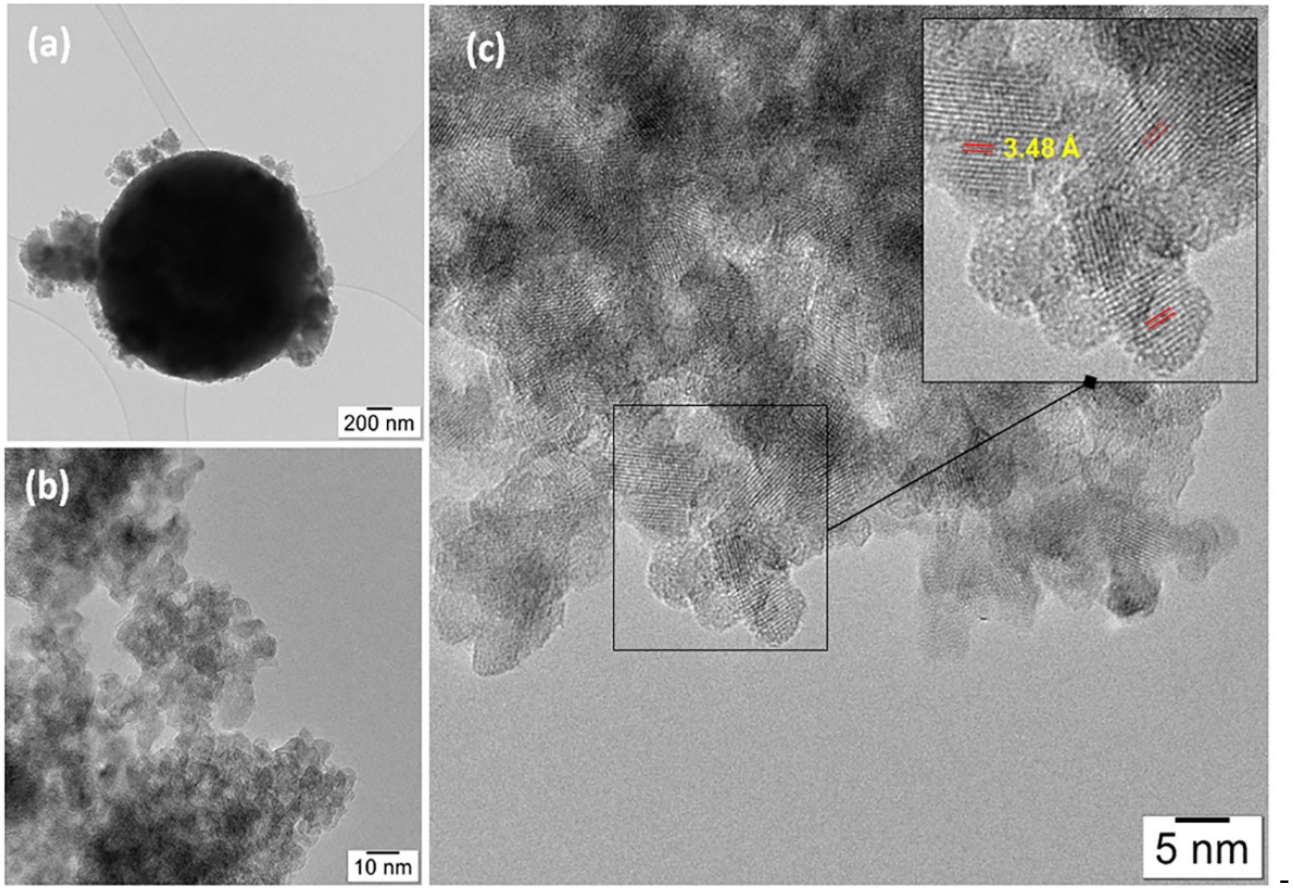
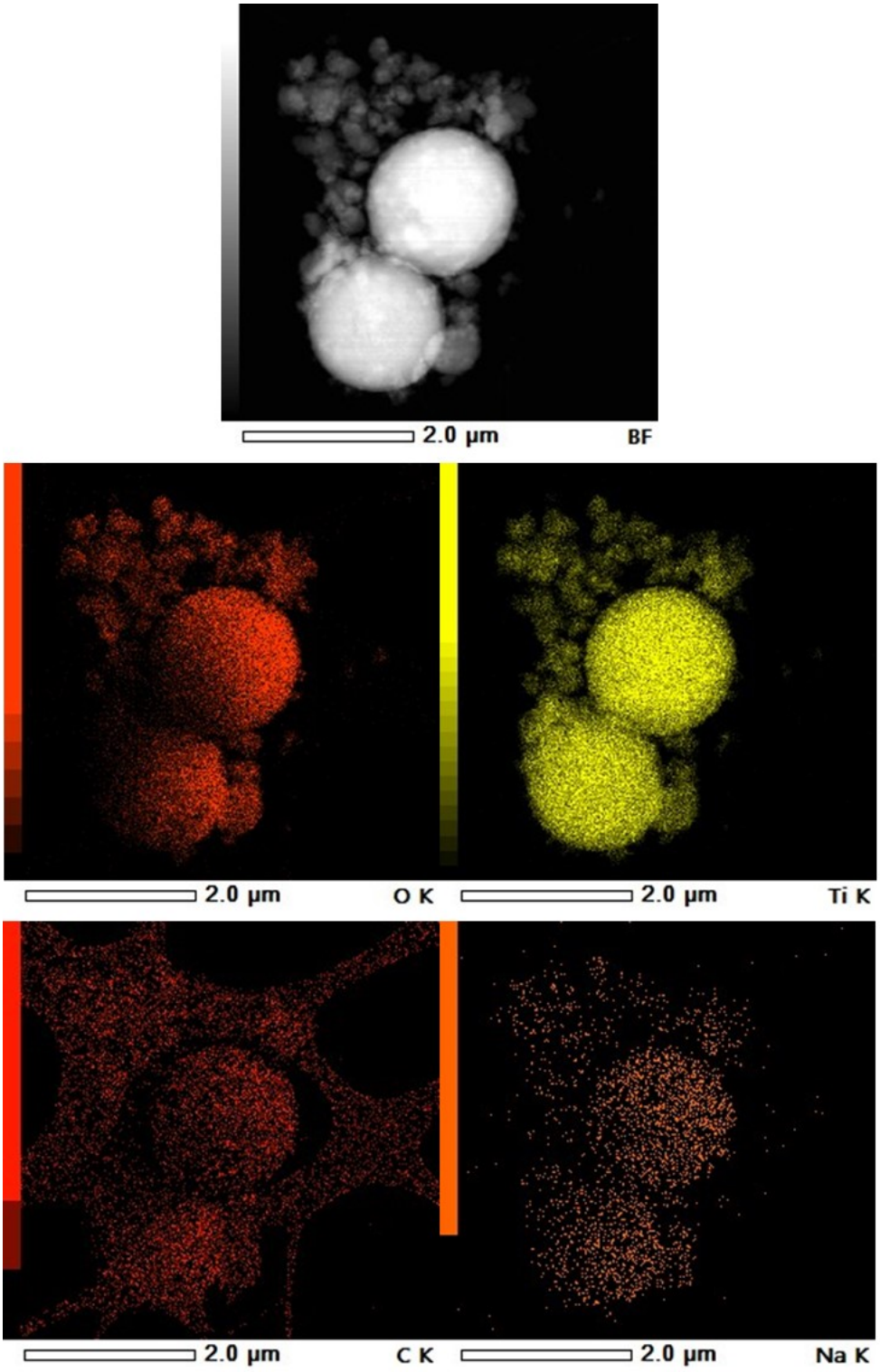


Fig. S9 TEM (a) and HR-TEM (b,c) images of the synthesized TiO_2 nanoparticles



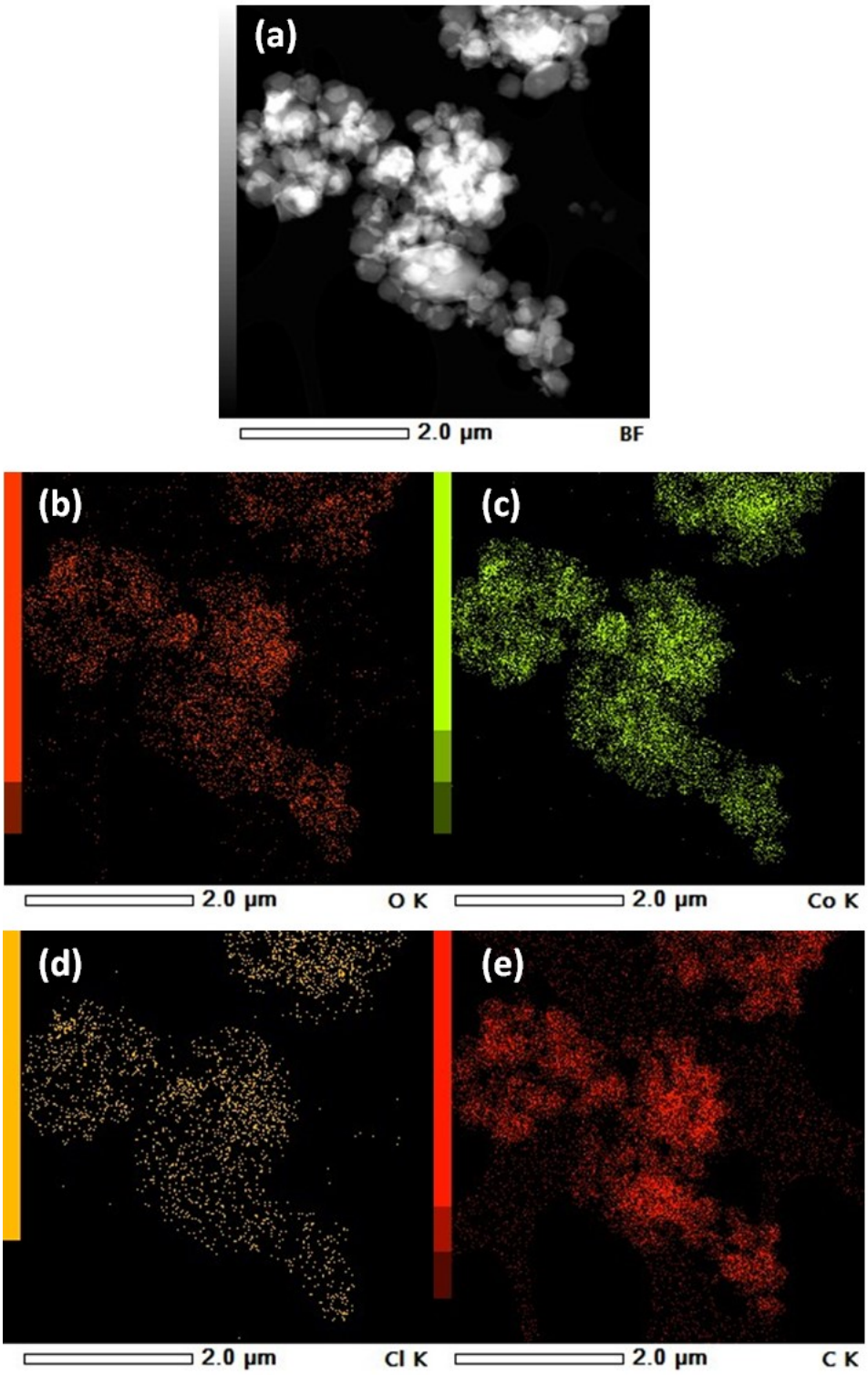
TEM/EDS elemental mapping

Fig. S10 Typical TEM and EDS elemental mapping images of O, Ti, C and Na for the TiO_2 nanoparticles.



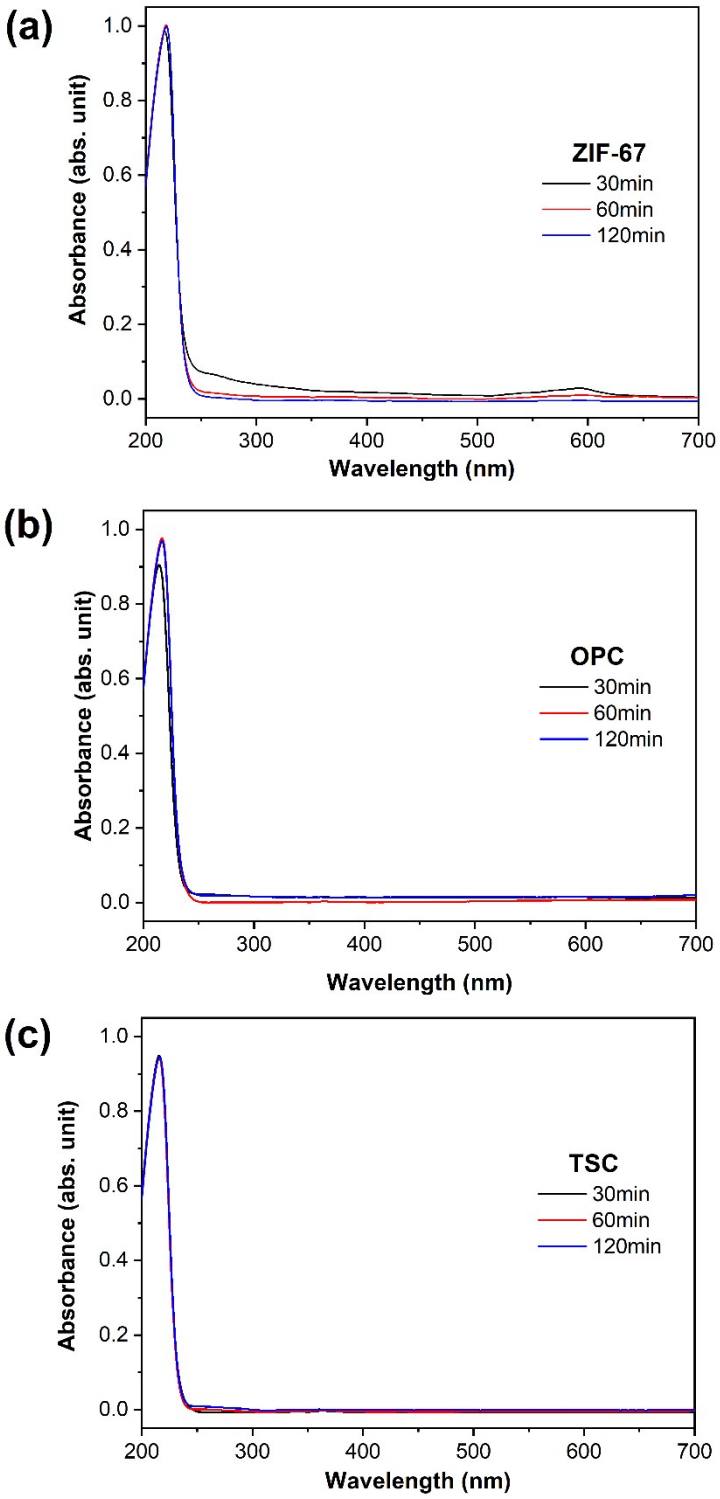
TEM/EDS mapping

Fig. S11 Typical TEM (a) and EDS elemental mapping of O (b), Co (c), Cl (d) and C (e) images for ZIF-67 nanoparticles (a-d).



Cobalt/ligand release test by UV-vis spectroscopy

Fig. S12 UV-vis absorption spectra for the Co ions and ligand release by ZIF-67 (a), OPC (b) and TSC (c) composites.



Zeta Potential of TiO_2 nanoparticles

Fig. S13 Zeta potential variation of the TiO_2 nanoparticles as a function of pH.