Supplementary Information (SI) for RSC Advances.

Biological Activities of Metal Oxide nanoparticles modified with Hexadeca-Substituted Cobalt (II) Phthalocyanine Bearing Fluorinated Substituents

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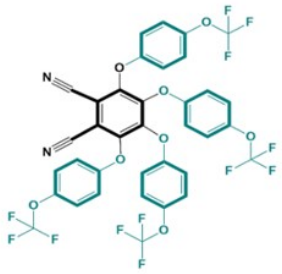
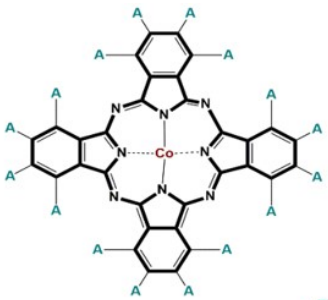
Chemicals and nanostructures



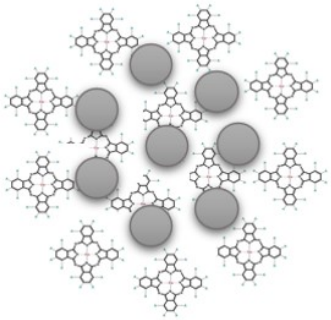
Tetra-substituted phthalonitrile derivative



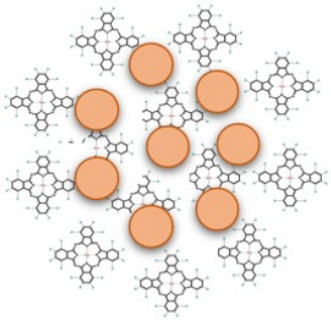
CoPc

A:

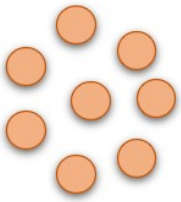
Al_2O_3



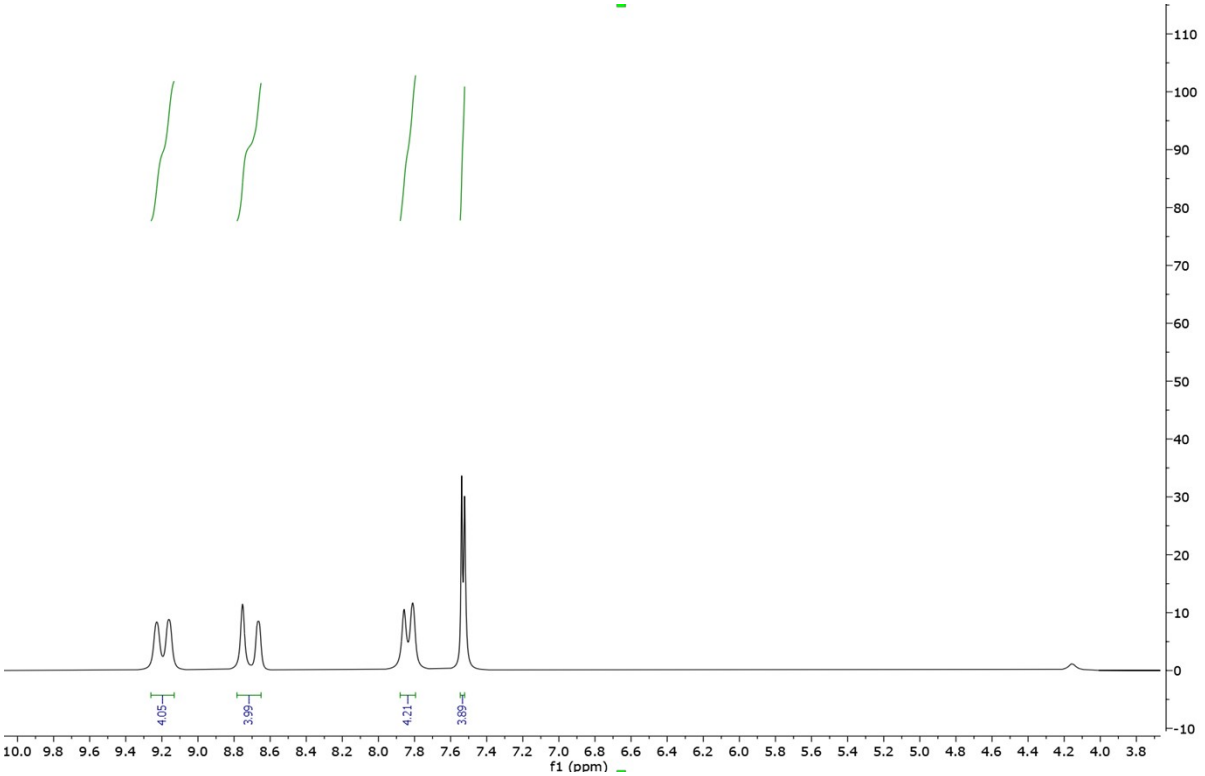
Al_2O_3/CoPc



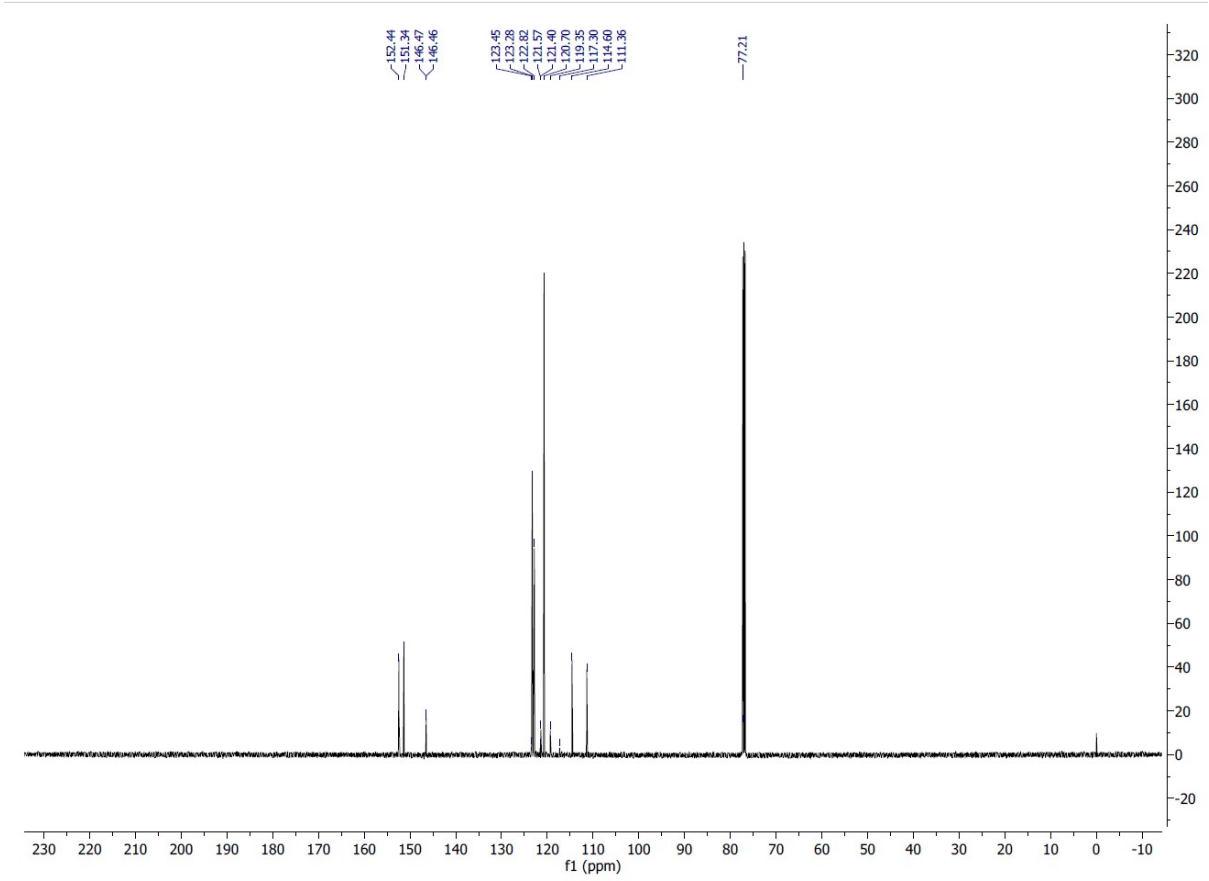
TiO_2/CoPc



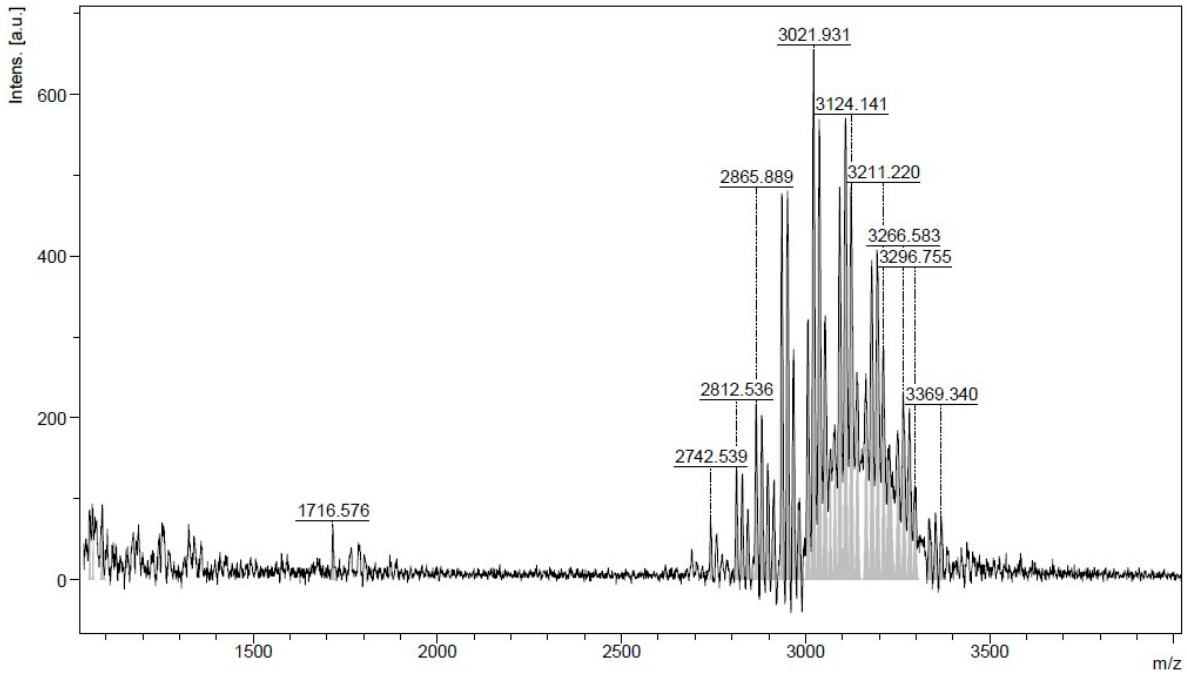
TiO_2



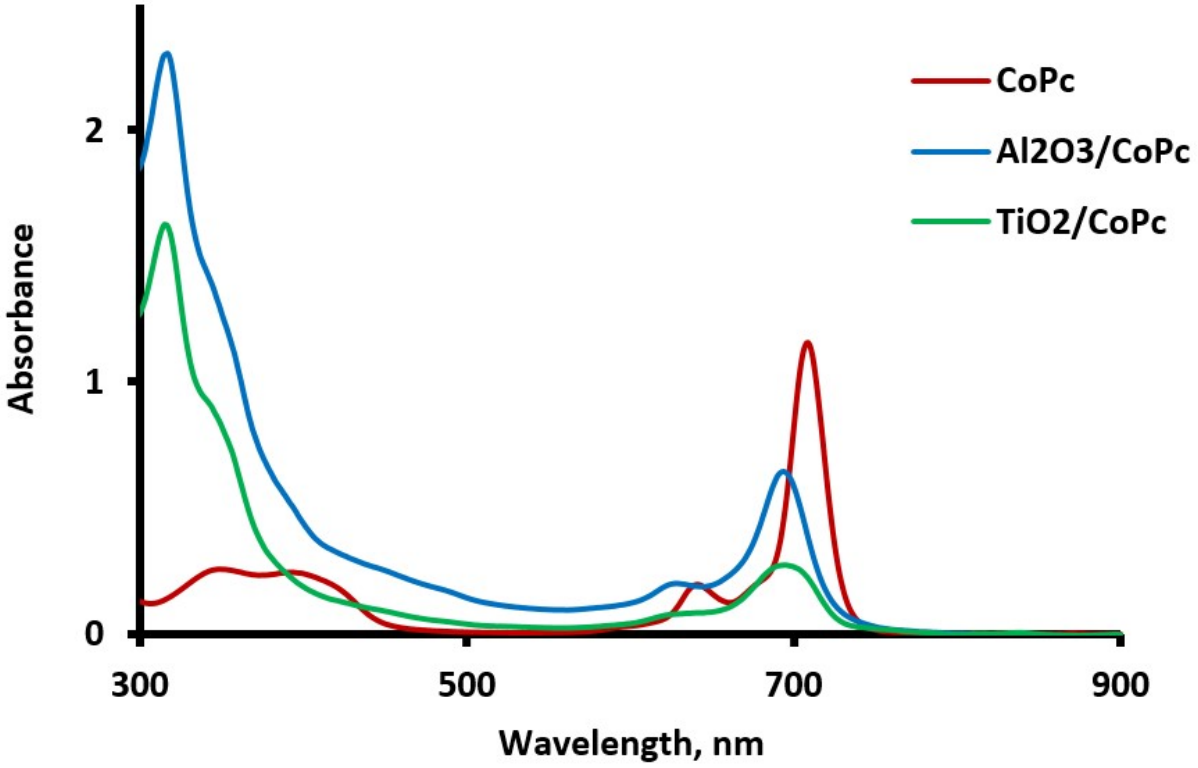
S1. ^{1}H NMR spectrum of the tetra-substituted phthalonitrile derivative.



S2. ^{13}C NMR spectrum of the tetra-substituted phthalonitrile derivative.



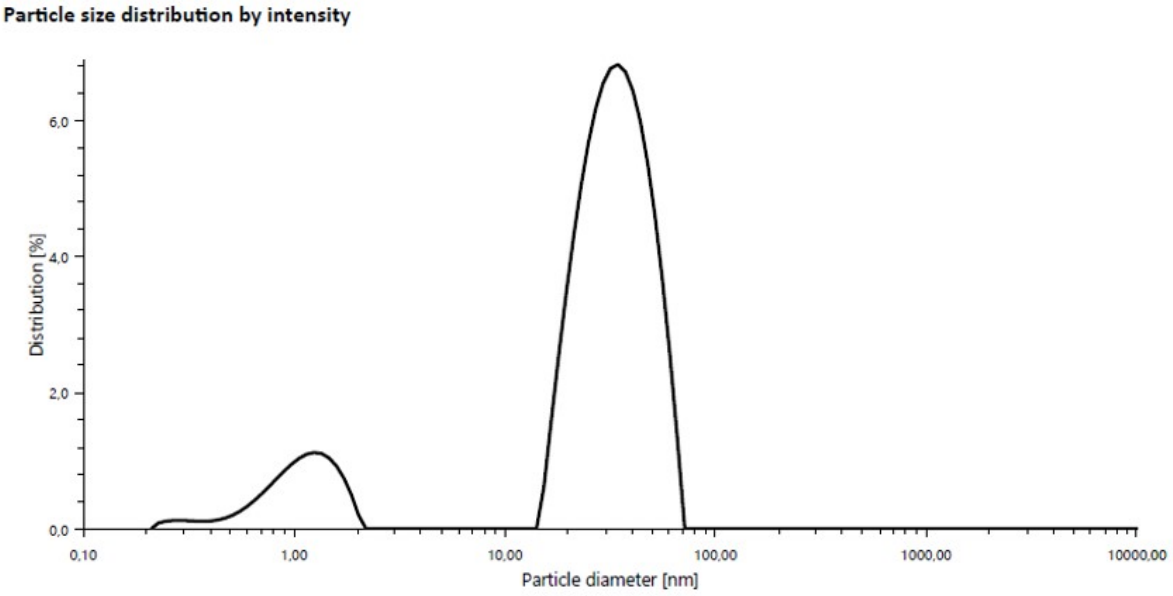
S3. MALDI-TOF spectrum of Compound CoPc.



S4. UV-vis spectra of compound CoPc and nanoconjugates (Al_2O_3/CoPc and TiO_2/CoPc).

Data output

Hydrodynamic diameter	24,31 nm	**Polydispersity index**	28,1 %
Intercept $g1^2$	0,6878	**Mean intensity**	289,6 kcounts/s
Filter optical density	1,7322	**Baseline**	1,000
Focus position	-0,3 mm	**Angle used**	Side scatter
Processed runs	25	**Transmittance**	65,2 %
Diffusion Coefficient	20,2 $\mu m^2/s$		

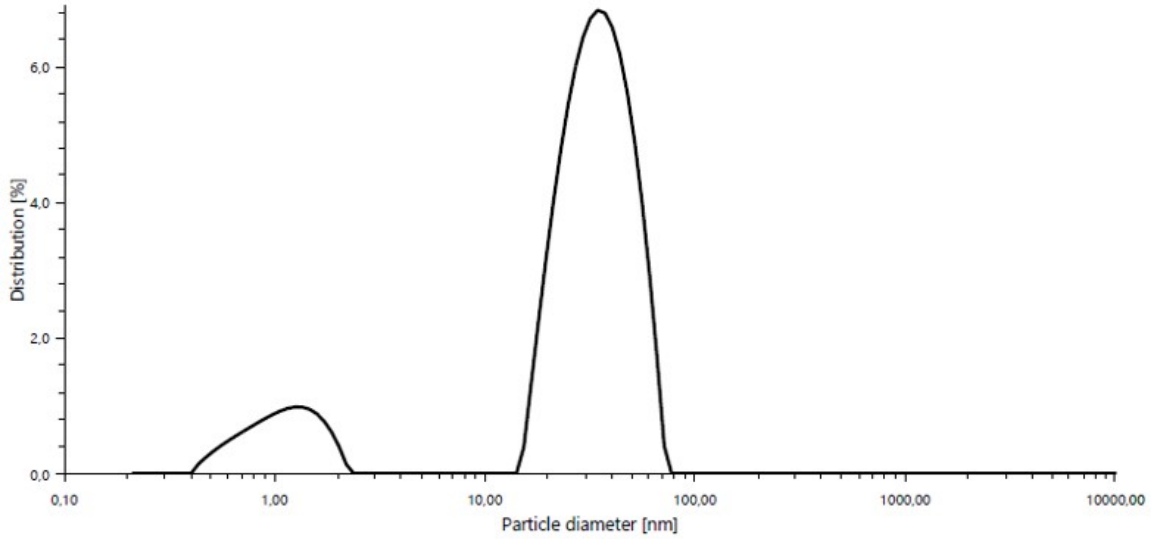


S5. Particle size distribution curve of unmodified alumina nanoparticles (Al_2O_3).

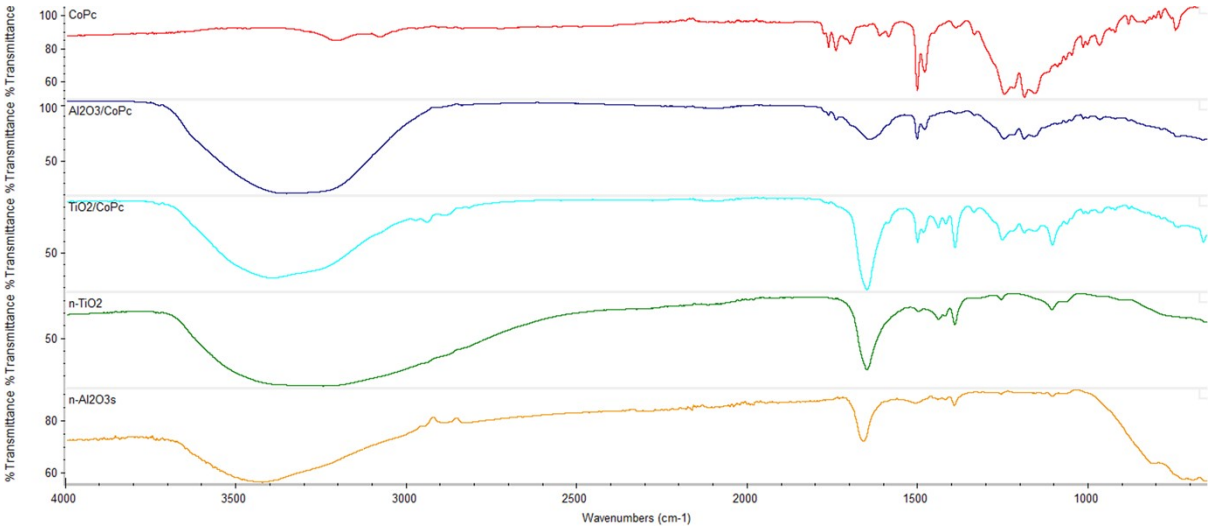
Data output

Hydrodynamic diameter	25,24 nm	**Polydispersity index**	29,2 %
Intercept $g1^2$	0,6912	**Mean intensity**	291,1 kcounts/s
Filter optical density	1,7394	**Baseline**	1,001
Focus position	-0,2 mm	**Angle used**	Side scatter
Processed runs	25	**Transmittance**	65,9 %
Diffusion Coefficient	19,4 $\mu m^2/s$		

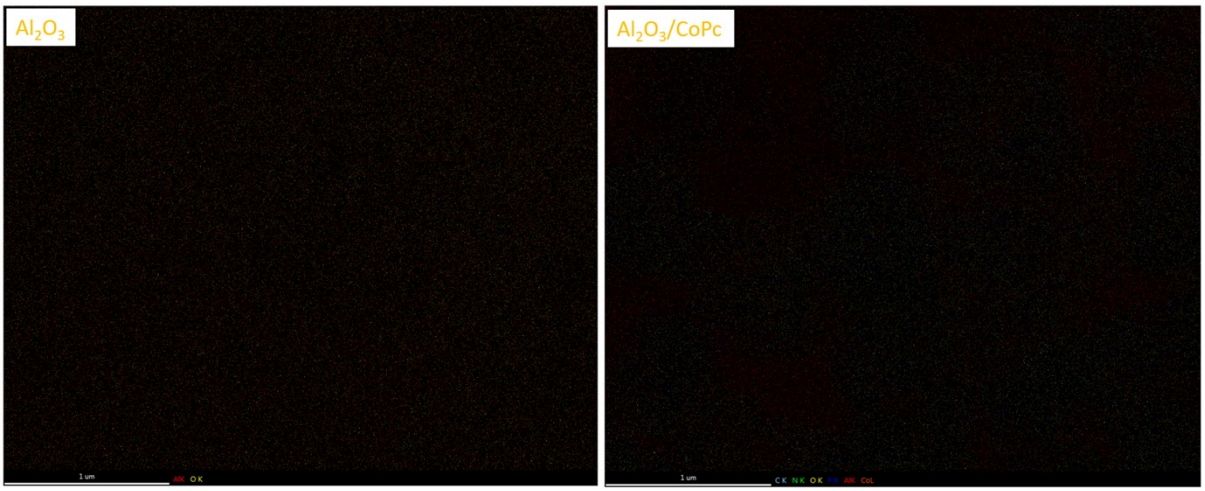
Particle size distribution by intensity



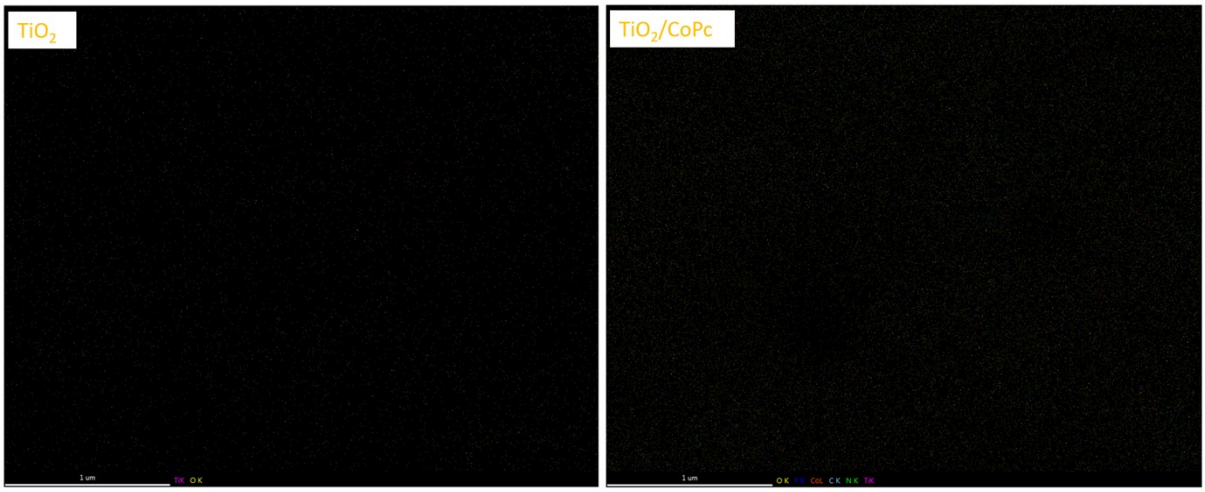
S6. Particle size distribution curve of unmodified titania nanoparticles (TiO_2).



S7. FT-IR spectra of compound CoPc, unmodified nanostructures (Al_2O_3 and TiO_2), and nanoconjugates (Al_2O_3/CoPc and TiO_2/CoPc).



S8. Elemental mapping analysis of unmodified nanostructures (Al_2O_3) and nanoconjugate (Al_2O_3/CoPc).



S9. Elemental mapping analysis of unmodified nanostructures (TiO_2), and nanoconjugates (TiO_2/CoPc).