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Design of functional nanostructures *via* chirality induction

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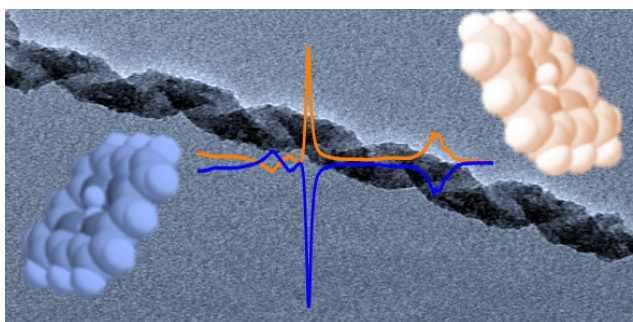
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While the combination of chiral and magnetic properties is becoming more and more attractive for magneto-chiral phenomena, the fabrication of chiral systems that are highly responsive to both



Electron microscopy image of TPPS porphyrin aggregated at the surface of a silica nanohelix and the CD spectra induced by the helices left and right.

light and magnetic fields is still a challenge.^{1,2} The induction of chirality to achiral objects is a versatile strategy worthy of exploration for the preparation of magneto-chiral objects. In this context, we investigate the use of silica nanohelices as a chiral platform for induced circular dichroism (ICD) to achiral magnetite nanoparticles, as well as achiral free base or metallized porphyrins.^{3,4} These nanocomposites are studied principally by electronic natural circular dichroism (NCD) and

magnetic circular dichroism (MCD) spectroscopies, and discussed as potential candidates for magnetochiral dichroism.

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KEYWORDS: Chirality, Magnetism, Porphyrins, Aggregation, Nanohelices