

Multi-step chirality transfer from molecules to molecular assemblies, organic to inorganic materials, then to functional nanomaterials

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Nanometric helices with controllable pitches are attractive not only to mimic nature, but also for the wide range of applications in materials sciences, chemical and biomaterial sensing, and enantioselective catalysis. In this talk, I discuss how such structures can then be used as scaffold to obtain hybrid organic/inorganic nanohelices, which can then be used as chiral platform to 1) organize chirally achiral nanoparticles or dyes then to 2) perform in-situ synthesis of nanometric helical metals/quantumdots/crystals and induce chiroptical signals from them. Finally, such functionalized chiral nano structures show interaction with intrinsically chiral or pro-chiral molecules, possibly giving access to enantioselective sensors.