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Functional Coordination Nanoparticles, (photo)magnetic and electron transfer properties

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Abstract

Coordination networks with magnetic, photomagnetic or spin crossover properties have been investigated for their potential application in the area of information storage, albeit for most of them at low temperature. Because of their three-dimensional structure, it is difficult to process the 3D networks to integrate them into devices for useful applications.
One approach to circumvent this issue consists in preparing nanoparticles that could be manipulated like molecules and where the physical behavior of the 3D network is kept as much as possible or altered in a way that can controlled by the chemist.
In this talk, I will discuss the synthetic approach that allow preparing nanocrystals of cyanide-bridged networks and discuss their physical properties. I will show that they can be manipulated in solution to design well-defined heterostructures, assembled on surfaces and eventually integrated in nano-devices revealing their unique electronic properties.[1-6]

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