Cyano-bridged coordination polymers nanoparticles as contrast agents for biomedical imaging

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From 1704, year of the discovery of the oldest coordination polymer, Prussian blue, to now, many cyano-bridged coordination polymers were synthesised and extensively studied. This research field remains very active with the development of materials featuring magnetic, photomagnetic, sorption or catalytic properties.

Significant parts of the current research activity on these materials is devoted to the synthesis and study of size and shape controlled cyano-bridged coordination polymer materials at the nanoscale.¹ These nanomaterials have the same advantages as the corresponding bulk materials. Among them may be mentioned the versatility of precursors that can be assembled, the adjustable porosity and the possibility to combine several properties within a single nano-object.²

In addition, the ease of synthesis of these nanoparticles under mild conditions allows control of their size, shape and sometimes their organization and thus control over their properties. We will illustrate the latest developments made in



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our research group on synthetic methodologies that we developed for the preparation of nano-objects or nano-composites of these materials and magnetic, magneto-optic or sorption properties associated therewith.

We will also address the potential application of cyano-bridged coordination polymers nanoparticles in the field of medical imaging.

Keywords : Prussian blue, nanoparticles, medical imaging.

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