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**Preparation and characterization of bifunctional magnetic-fluorescent (metal organic framework)/(Fe3O4) nanofibers**

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An increasing trend in recent years has been the search for materials with multifunctional properties. In this communication we describe the preparation and characterization of fluorescent and magnetic bifunctional nanofibers obtained by electrospinning solutions of coordination polymers and magnetite nanoparticles [1]. The later were obtained by use of the co-precipitation method and presented an average diameter of approximately 15 nm. We prepared two different types of Metal Organic Frameworks (MOF) under microwave, one using pyridine-2,6-dicarboxylic acid - H2DPA and Eu2+ and the second using H2DPA Tb2+. Subsequently two solutions were prepared by mixing Eu or Tb MOF with the magnetite nanoparticles in a 10% (by weight) PVA aqueous solution. We used a home-built electropinning equipment to prepare nanofibers by submitting these solutions to a 15 kV voltage. The resulting nanofibers preserve the typical d-d transitions of the lanthanide used and exhibit an intense fluorescence when excited at 280 nm. We have also measured the magnetic susceptibility of these systems and they exhibit a superparamagnetic behavior, probably due to the size of Fe3O4 nanoparticles. The scanning electron microscopy micrography (SEM) revel that nanofibers prepared have long and straight nanostructures with substantial nanoparticles on the surface and interior space of the fiber. The results obtained so far indicate that following these procedures it is possible to obtain two different types of fluorescent and magnetic nanofibers, one emitting in the red region and the other in the blue part of the visible spectrum.