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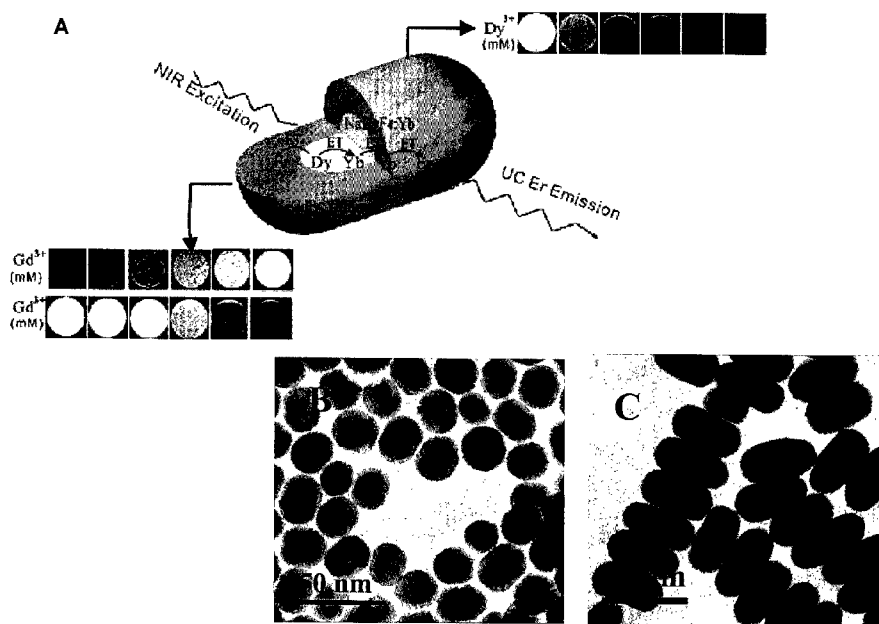
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(54) Title: NANOPARTICULATE CONTRAST AGENT



(57) Abstract: Provided is a nanoparticulate composite with two layers. One of the layers comprises one or more metals, which are a paramagnetic metal, a ferromagnetic metal, or a superparamagnetic metal. This layer also contains one or more suitable dopants. The other layer comprises one or more metals of gadolinium, manganese (II), and iron (III), in the form of an oxide or a fluoride. This layer may contain one or more lanthanide dopants. The nanoparticulate composite may be used as a T1-T2 dual mode contrast agent, in particular in magnetic resonance imaging. Lanthanide-doped nanoparticulate composites show enhanced up-conversion fluorescence and higher quality of magnetic resonance signal.