Nanocomposites and nanomaterials

New nanosized systems of polymer metal complexes based β-diketones and lanthanides for electroluminescent devices

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On the basis of the unique photophysical properties of lanthanide cations (long luminescence lifetime and very sharp emission band), rare earth metal complexes, as luminescent materials have received increasing attention for application in different areas, varying from white lighting, such as light bulbs replacement, to multicolor displays for televisions and cell phones [1-2]. Lanthanide β-diketonates are the most popular and the most intensively investigated luminescent lanthanide coordination compounds. Their popularity is partially because many different β-diketones are commercially available and the synthesis of the corresponding lanthanide complexes is relatively easy but also because of their excellent luminescence properties [3-4].

Polymers of Pr, Eu complexes with 2,6-dimethyl-heptene-1-dione-3,5 were synthesized at the first time. Polymers were synthesized by free-radical polymerization in DMF.

It was shown that all synthesised compounds are nano systems. Using electron microscopy confirmed the homogeneity of metal distribution in the polymer matrix of synthesized metallopolymer.

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