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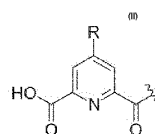
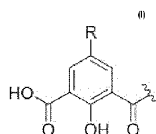
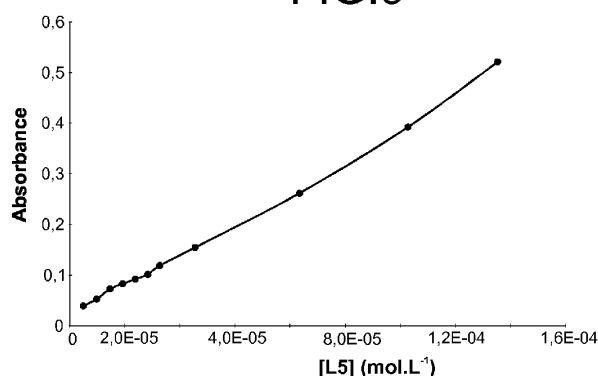
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(54) Title: ULTRABRIGHT LUMINESCENT LANTHANIDE NANOPARTICLES COMPRISING TERBIUM, WITH LONGER EXCITED-STATE LIFETIME

FIG.9



(57) Abstract: The invention provides luminescent lanthanide nanoparticles having simultaneously an improved brightness and an increased lifetime of the excited-state. These nanoparticles comprise terbium ions and ions of a second lanthanide, preferentially europium, and are coated with molecules of chromophore ligand bonded to the surface of the nanoparticle. The ligand is an organic molecule comprising at least one chromophore radical of formula (I) or of formula (II); wherein R is selected from H, CN group or COOH group. The phosphorescence excited-state lifetime is improved by energy transfer from surface terbium ions to core ions of the second lanthanide. The nanoparticle may further comprise a carrier molecule of analytical interest covalently attached to at least one ligand molecule.

[Continued on next page]

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