

Synthesis of silver and lithium sub-micro-and nanoparticles coated with derivatives of p-tert-butyl thiactalix[4]arenes

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Abstract

The effect of solvent nature and temperature on the formation of 3D-dimensional SAM (selfassembled monolayers on nanoparticles) based on synthetically available stereoisomers of p-tert-butyl thiactalix[4]arenes tetrasubstituted at the lower rim by pyrrolidide and octylamide groups (cone, partial cone, and 1,3-alternate) with lithium and silver nanoparticles were determined by dynamic light-scattering and transmission electron microscopy. It was found that the variation of the temperature of the system and the nature of the solvent leads to the formation discrete or extended particles (CH₂Cl₂) (98-110 nm), nanostructures (CH₃CN) (120-295 nm) or three-dimensional SAM (DMF) (1-13 nm; 46-622 nm). © 2011 Springer Science+Business Media B.V.

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Keywords

Dynamic light-scattering, p-tert-Butyl thiactalix[4]arenes, SAM, Self-assembly, Supramolecular assemblies, Transmission electron microscopy