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Synthesis and properties of chiral nanoparticles based on (pS)- and (pR)-decasubstituted pillar[5]arenes containing secondary amide fragments

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Abstract

© The Royal Society of Chemistry 2016. Employing induced asymmetric synthesis, new deca-substituted pillar[5]arenes containing (R)-(+)- or (S)-(-)-1-phenylethane-1-acetamide fragments have been obtained and characterized. Using NTA and TEM, and circular dichroism spectroscopy, it was shown that the amidopillar[5]arenes synthesized form spherical chiral nanoscale aggregates in CHCl₃. During heating, both positive and negative Cotton effects corresponding to nanoparticles in CHCl₃ reversibly decrease. Keeping the nanoparticles at room temperature results in a decrease in their size and intensification of the Cotton effect.

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