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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 decasubstituted 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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