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Supramolecular Chemistry of Naphthalenediimides

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Abstract

Amino acid derivatives of naphthalenediimides (NDI) are versatile building blocks in supramolecular chemistry both in organic and aqueous media. Two areas that highlight this are the supramolecular nanotubes and the interlocked molecular systems. The NDI-nanotubes are helical with their chirality being determined by the constituent amino acid. These supramolecular scaffolds are shown to form inclusion complexes in organic solvents with fullerenes and other polyaromatic molecules. In aqueous systems the NDIs have been successfully employed in the synthesis of new types of macrocyclic receptors and [2]-catenanes using the methods of Dynamic Combinatorial Chemistry.

1. *Phys. Chem. Chem. Phys.* **2009**, ASAP (<http://dx.doi.org/10.1039/b905187b>)
2. *Proc. Natl. Acad. Sci.* **2009**, ASAP (<http://dx.doi.org/10.1073/pnas.0809934106>)
3. *Chem. Commun.* **2009**, 419 – 421 (<http://dx.doi.org/10.1039/b816979a>)
4. *Angew. Chem., Int. Ed.* **2008**, 47, 2689 – 2692 (<http://dx.doi.org/10.1002/anie.200704983>)
5. *Angew. Chem., Int. Ed.* **2007**, 46, 2238 – 2240 (<http://dx.doi.org/10.1002/anie.200604891>)
6. *Angew. Chem., Int. Ed.* **2007**, 46, 194 – 197 (<http://dx.doi.org/10.1002/anie.200603348>)

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