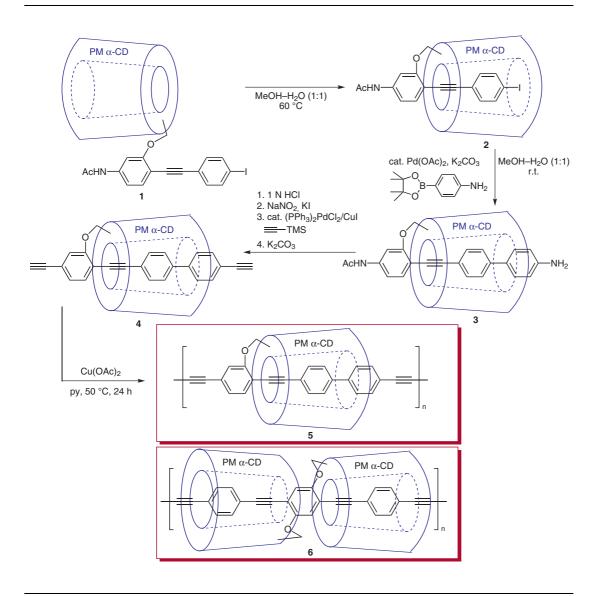
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Synthesis of Organic-Soluble Conjugated Polyrotaxanes by Polymerization of Linked Rotaxanes

Synthesis of Organic-Soluble Conjugated Polyrotaxanes by Polymerization of Linked Rotaxanes *J. Am. Chem. Soc.* **2009**, *131*, 16004-16005.

An Insulated Conjugated Polymer Wire



Significance: Insulated molecular wires are an interesting target for molecular electronics. The authors synthesize such a structure (**5**) by polymerizing **4**, in which a conjugated unit is surrounded by a permethylated α -cyclodextrin (PM α -CD). Intermediate **3** is obtained using a recently reported route (S. Tsuda, J. Terao, N. Kambe *Chem. Lett.* **2009**, *38*, 76).

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Comment: Polymer **6** containing repeat units with two PM α -CD moieties was synthesized using the same strategy. Compared to the equivalent in which PM α -CD units are attached at the same positions but not including the conjugated system through a host–guest pair, it shows a significantly higher solid-state quantum yield (23% vs. 6%). This suggests shielding of the molecular wire in **6**.

Category

Synthesis of Materials and Unnatural Products

Key words

polyrotaxanes

host-guest systems

conjugated polymers



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