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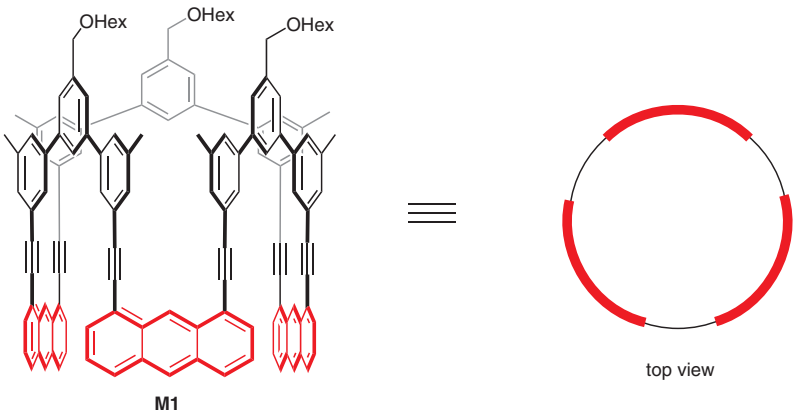
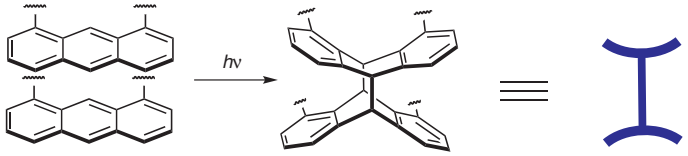
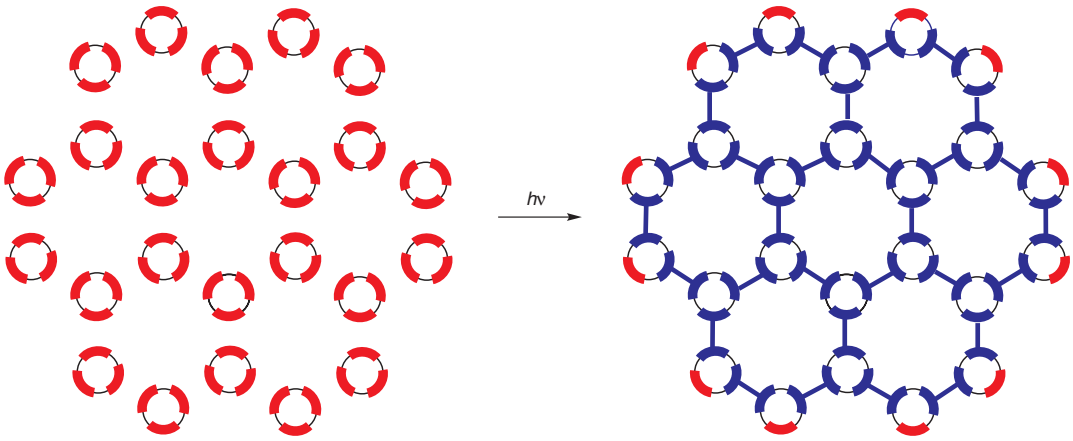
Rational Monomer Design towards 2D Polymers: Synthesis of a Macrocycle with Three 1,8-Anthrylene Units
Chem. Eur. J. **2009**, *15*, 8955-8960.

Molecular Chain Mail



M1





periodic 2D assembly of **M1**

photocrosslinked 2D network of **M1**

Significance: Macrocycle **M1**, which contains three 1,8-anthrylene units tethered together in C_{3v} symmetry, was synthesized by iterative palladium-catalyzed cross-couplings and one copper-free Sonogashira cross-coupling.

Comment: Macrocycle **M1** was designed as a potential monomer to yield a 2D polymer network that is a single layer thick. The bottom-up synthesis of such networks has yet to be achieved. Herein, the authors lay the foundations to achieve this goal.

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Synfacts 2009, 12, 1335-1335 Published online: 20.11.2009
DOI: 10.1055/s-0029-1218179; **Reg-No.:** S12409SF

Category

Synthesis of Materials and Unnatural Products

Key words

anthracenes

photodimerization

Sonogashira–Hagihara cross-coupling

copper-free Sonogashira cross-coupling