

Cover Picture

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The cover picture shows the synthesis of novel conjugated macrocycles assembled from oligothiophenes bearing terminal acetylene groups. Under pseudo-high-dilution conditions the oxidative cyclooligomerization first gives the oligothiophenediynes, the precursors to the new class of α -cyclo[n]thiophenes. The detailed structure of macrocycles with up to 76 ring members and cavities of up to 3 nm could be investigated by means of X-ray structure analysis, scanning tunneling microscopy, and quantum chemical calculations (see the molecular model top right). The novel rings combine the excellent electronic properties of the corresponding linearly conjugated oligomers with the possibility of complexing large organic guest molecules or other objects (the tower of the Cathedral at Ulm represents a nanometer-sized, rodlike entity), which should have new fundamental properties and applications. The background shows the image obtained by scanning electron microscopy of a self-assembled and perfectly ordered monolayer of macrocycles on a graphite surface. More on these fascinating nanometer-sized rings can be found in the communication by P. Bäuerle et al. on p. 3481 ff.

