

J. HE, M.-H. YU, Z. LIAN, Y.-Q. FAN, S.-Z. GUO, X.-N. LI, Y. WANG, W.-G. WANG, Z.-Y. CHENG, H. JIANG* (BEIJING NORMAL UNIVERSITY, P. R. OF CHINA)
 Lemniscular Carbon NanoHoops with Contiguous Conjugation from Planar Chiral [2.2]Paracyclophane: Influence of the Regioselective Synthesis on Topological Chirality
Chem. Sci. **2023**, *14*, 4426–4433, DOI: 10.1039/D2SC06825G.

Topologically Chiral NanoHoops

Category

Synthesis of Materials and Unnatural Products

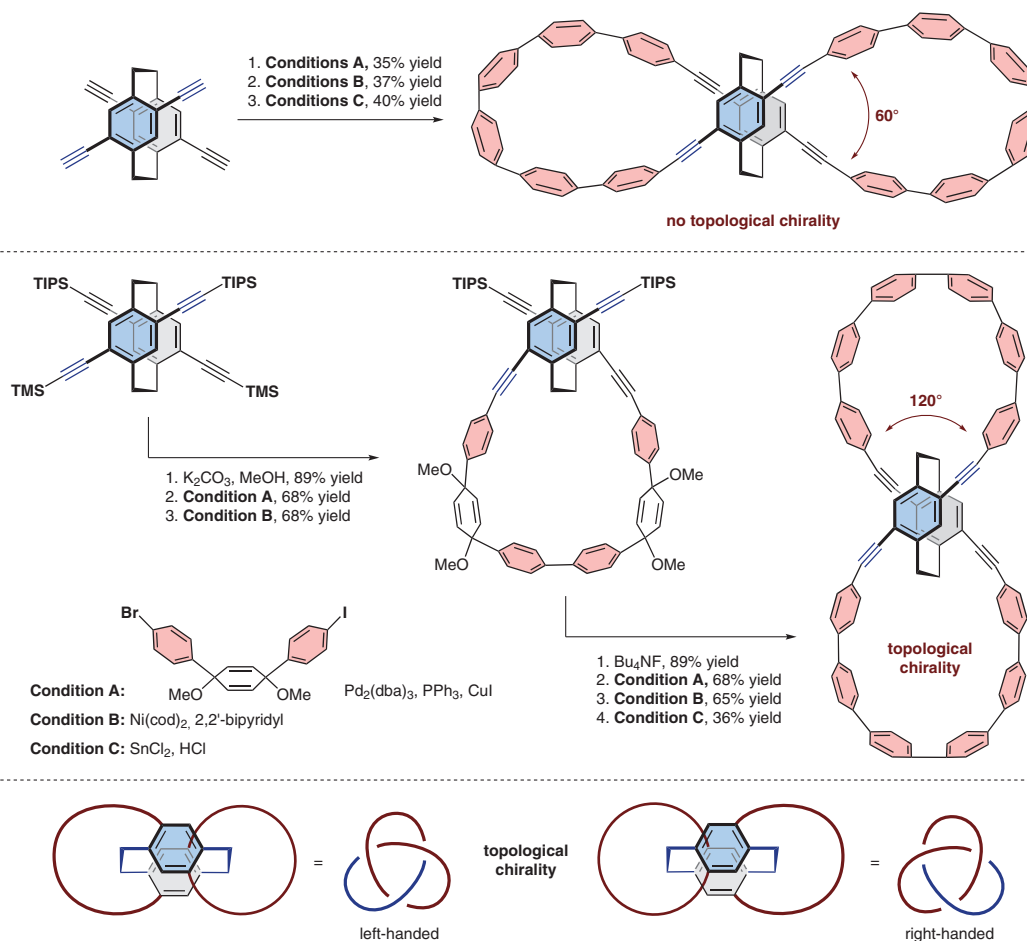
Key words

topological chirality

paracyclophane

carbon nanoHoops

Synfact
of the Month



Significance: As a novel chiral element, topological chirality has expanded the research and application horizon of related functional materials. While synthetic strategies for the non-conjugated counterparts have been widely investigated, methods for conjugated structures of topological chirality are relatively less explored. Herein, two isomeric nanoHoops of conjugated backbone are constructed by harnessing [2.2]paracyclophane as the hinge unit.

Comment: Introducing different silyl protective groups regioselectively to the central chiral paracyclophane is crucial to the subsequent site-specific ring closure and achievement of the topological chirality. The inherent difference in the structural topology exhibited by the two isomers results in their distinct chiral traits and chiroptical properties.

SYNFACTS Contributors: Dahui Zhao, Jianjun Han
 Synfacts 2023, 19(08), 0761 Published online: 14.07.2023
 DOI: 10.1055/s-0042-1751947; Reg-No.: S08523SF

© 2023, Thieme. All rights reserved.
 Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany