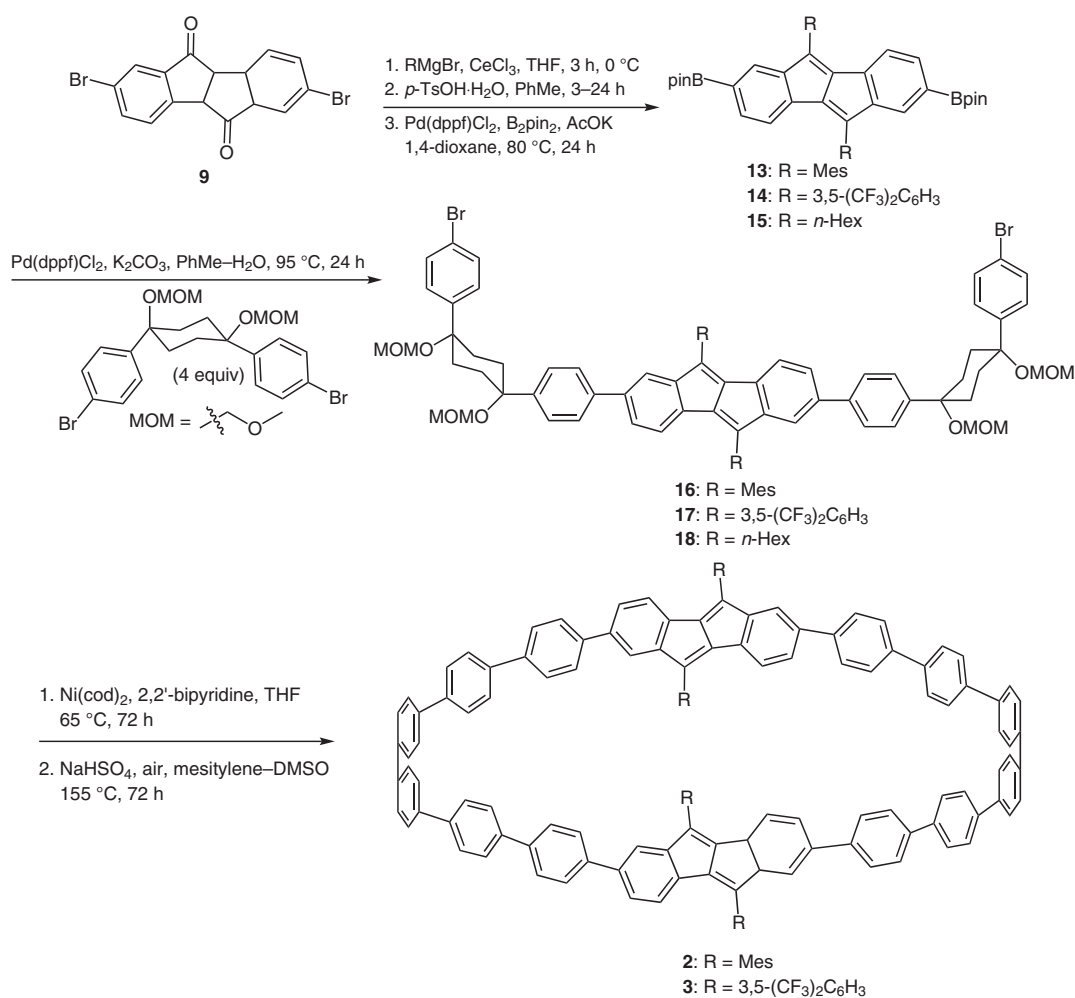


Synthesis of Conjugated Nano hoops Containing Antiaromatic Units



Significance: Conjugated nano hoops have attracted attention mainly because of the extensive investigation of cycloparaphenylenes in recently years. In their paper, Esser and co-workers synthesized conjugated nano hoops containing dibenzo[*a,e*]pentalene (DBP), which is a nonalternant hydrocarbon with antiaromatic character. With the incorporation of DBPs, the nano hoops exhibited ambipolar electrochemical behavior.

Comment: The conjugated nano hoops containing DBPs were synthesized in six steps including a nickel-mediated macrocyclization reaction. It is worth noting that since the DBP units were attached to electron-withdrawing substituents in the nano hoops, the antiaromatic character of the DBP was reduced. Furthermore, analysis showed that the frontier molecular orbitals were separated between the CPP and DBP units in the nano hoop.