Cascade Cycloadditions for the Synthesis of Perylenes

Significance: Perylene derivatives were prepared by cascade [4+2] cycloadditions between 1,8-difurynaphthalene and arynes. The double Diels–Alder reaction proceeds in a highly stereoselective fashion and only the exo,exo-diastereomer (3a–c) is formed as confirmed by X-ray crystallographic studies.

Comment: The synthetic method allows facile preparation of extended perylenes, which are potential molecular electronic materials. Further study on substituted derivatives with better solubility and stability is desirable.