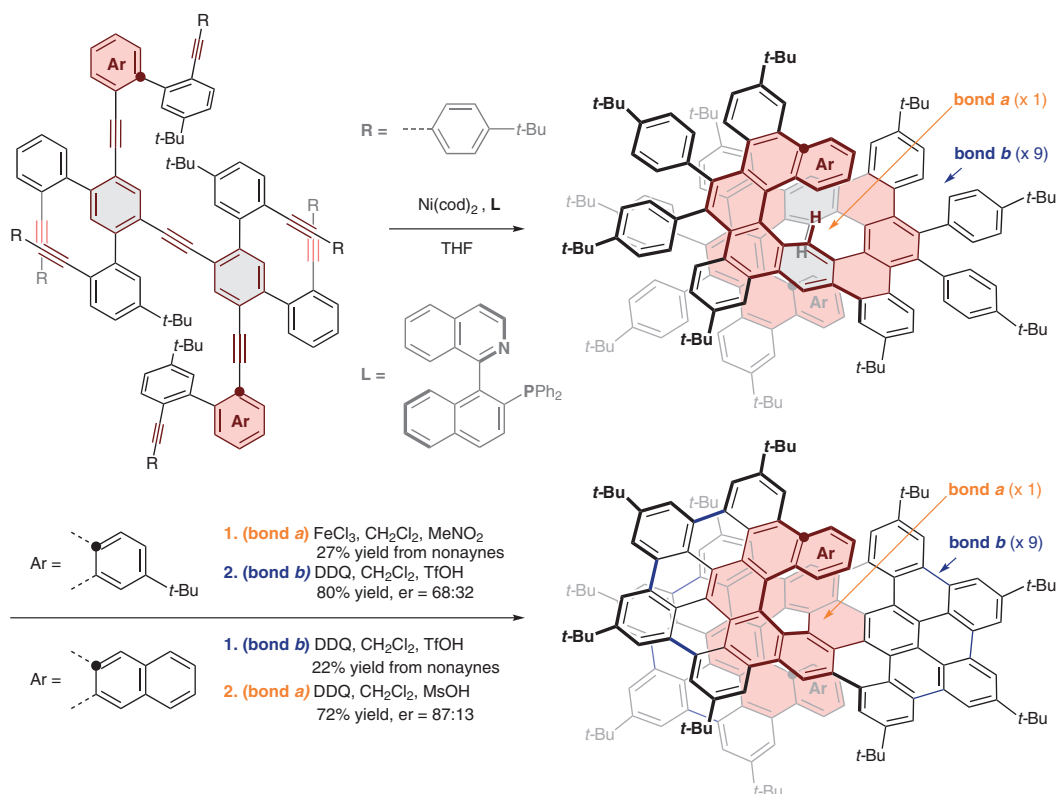


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Design and Enantioselective Synthesis of 3D π -Extended Carbohelicenes for Circularly Polarized Luminescence
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Enantioselective Syntheses of π -Extended Carbohelicenes



Significance: π -Extended helicenes of intrinsic chirality are promising circularly polarized luminescence (CPL) emitters, but their preparations and resolution are challenging. Here, enantioselective syntheses of 3D π -extended carbo[11] and carbo[13] helicenes with bright CPL emissions and large asymmetry coefficients are achieved.

Comment: The synthesis features enantioselective triple [2+2+2] cycloaddition, followed by multiple annulation through Scholl reaction, which further reduces the helicene diameter. Crystallization of the enantioenriched helicene products readily yields nearly pure enantiomers.

Category

Synthesis of
Materials and
Unnatural Products

Key words

circularly polarized
luminescence

carbohelicenes

[2+2+2]
cycloaddition

Scholl reaction

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