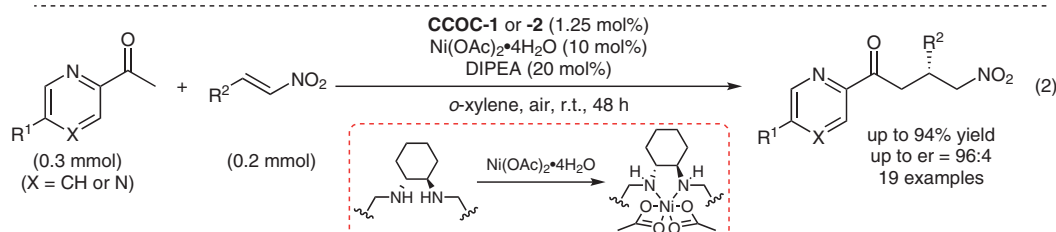
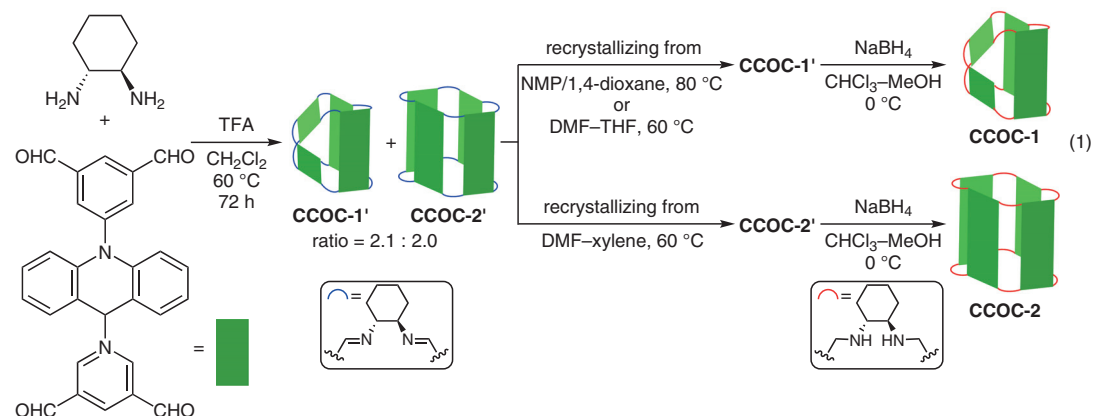


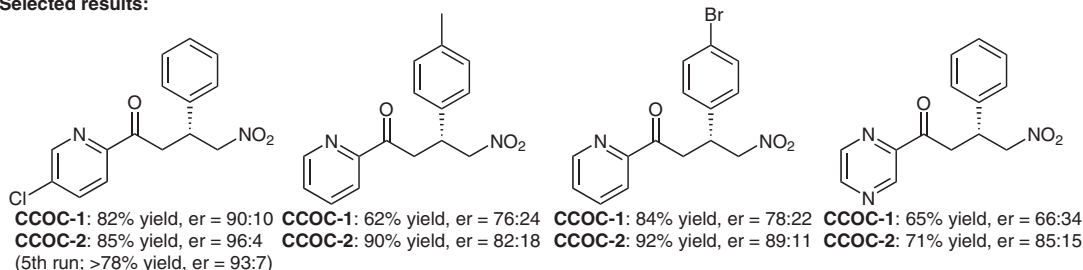
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Chiral Covalent Organic Cages: Structural Isomerism and Enantioselective Catalysis
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Enantioselective Michael Addition Using Ni(OAc)₂-Chiral Covalent Organic Cage Complexes



Selected results:



Significance: Chiral covalent organic cages (**CCOC-1** and **2**) were prepared from 5,10-di(3,5-diformylphenyl)-5,10-dihydrophenazine and (1*R*,2*R*)-cyclohexanediamine according to equation 1. A **CCOC**-Ni(OAc)₂ complex, generated in situ, promoted the enantioselective Michael addition of 2-acetylazaarenes with *E*-nitroalkenes in the presence of DIPEA to afford the corresponding Michael adducts in up to 94% yield with 96:4 er (eq 2).

Comment: **CCOCs** were characterized by means of NMR measurements, FT-IR, MALDI-TOF-MS, SEM, XRD, PXRD, XANES, EXAFS and UV/Vis. In the enantioselective Michael addition of 1-(5-chloro-2-pyridinyl)ethenone with *E*- β -nitrostyrene, the **CCOC-2**-Ni(OAc)₂ complex was recovered and reused four times without significant loss of its catalytic activity and enantioselectivity (5th run; >78% yield, 93:7 er).

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