

Photodehydrogenation of *N*-Heterocycles with Hexagonal Boron Carbon Nitride

Category

Polymer-Supported Synthesis

Key words

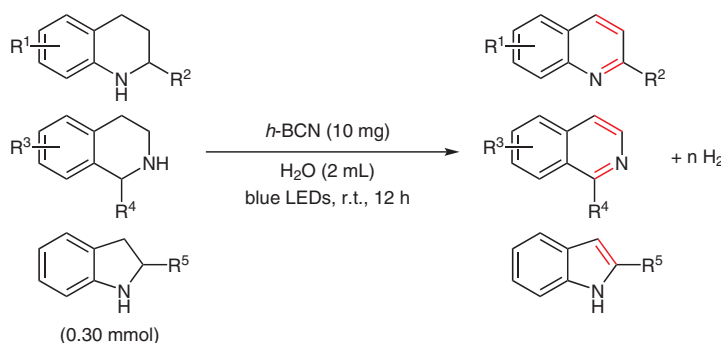
hexagonal boron carbon nitride

dehydrogenation

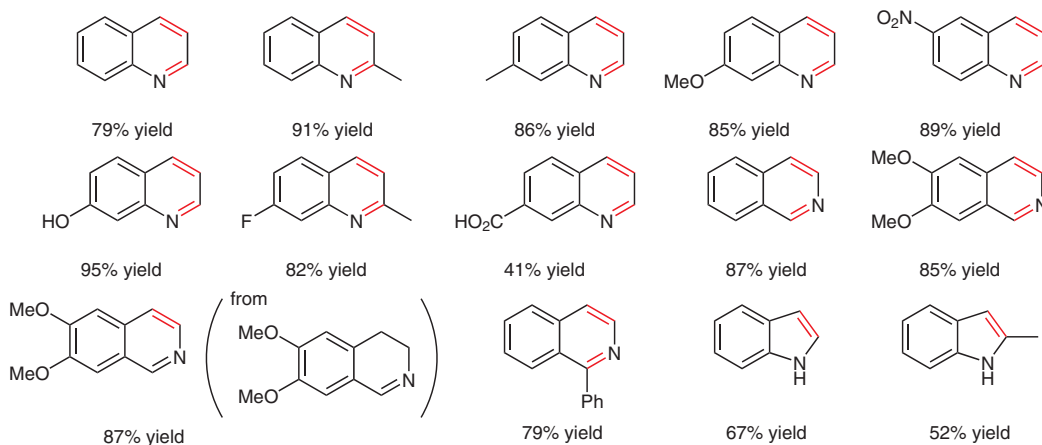
N-heterocycles

visible light

Synfact
of the month



Results:



Significance: Hexagonal boron carbon nitride (*h*-BCN) catalyzed the acceptorless dehydrogenation of hydroquinolines, hydroisoquinolines, and indolines in water at room temperature under visible-light irradiation to give the corresponding aromatic *N*-heterocycles in 41–95% yield (14 examples).

Comment: The authors previously reported the preparation of *h*-BCN and its application to the oxidative dehydrogenation of ethylbenzene (*Angew. Chem. Int. Ed.* **2017**, 56, 8231). Under dark conditions, the dehydrogenation with *h*-BCN did not proceed. In the dehydrogenation of 1,2,3,4-tetrahydroquinoline, the catalyst was recovered by simple filtration and reused four times with slight loss of its catalytic activity.