www.thieme.com

SYNFACTS Highlights in Current Synthetic Organic Chemistry

Publishing House and Copyright:
© 2016 by
Georg Thieme Verlag KG
Rüdigerstraße 14
70469 Stuttgart
ISSN 1861-1958

Thieme

Category

Polymer-Supported Synthesis

Key words

cobalt catalysis

metal–organic framework

ammonia borane

hydrogenation

nitro compounds

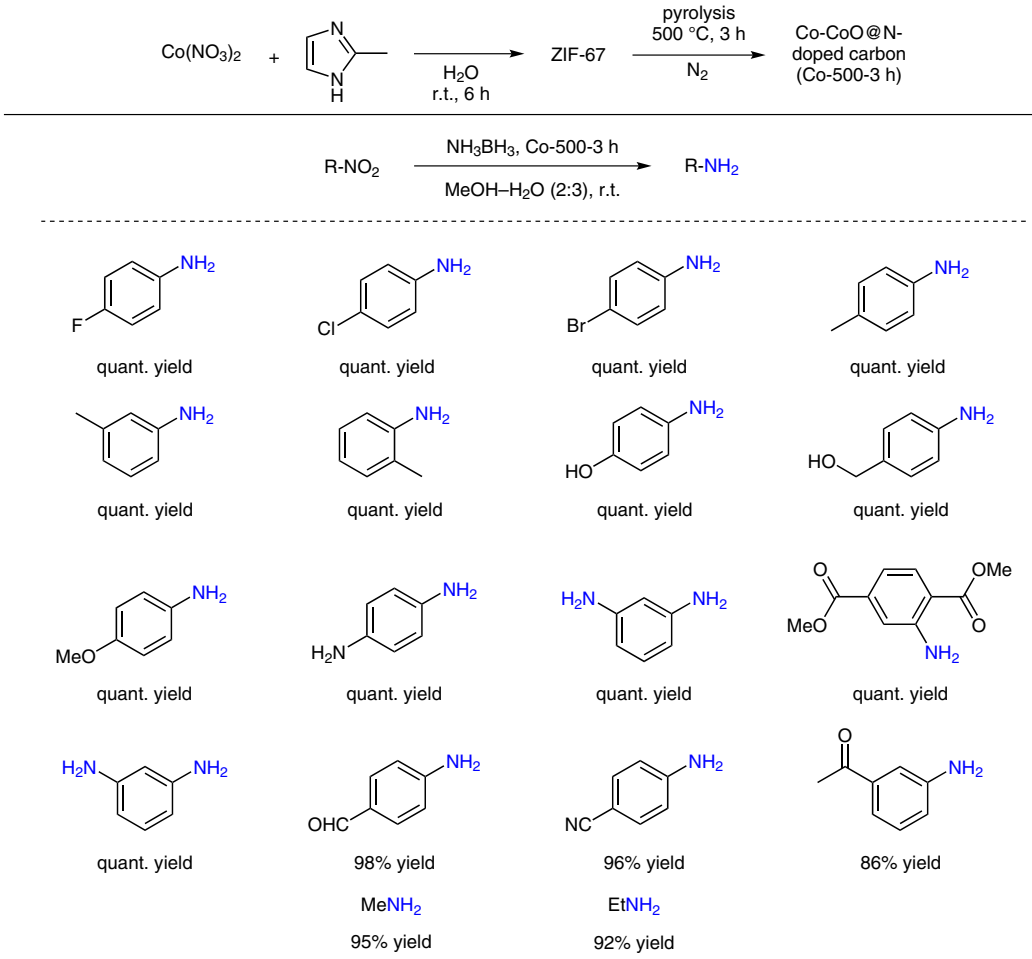
amines

X. MA, Y-X. ZHOU, H. LIU, Y. LI, H.-L. JIANG* (UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA, HEFEI, P. R. OF CHINA)

A MOF-Derived Co–CoO@N-Doped Porous Carbon for Efficient Tandem Catalysis: Dehydrogenation of Ammonia Borane and Hydrogenation of Nitro Compounds

Chem. Commun **2016**, *52*, 7719–7722.

Hydrogenation of Nitro Compounds by Using a Porous Carbon–Cobalt Catalyst



Significance: An N-doped porous carbon-encapsulated Co–CoO nanocomposite (Co-500-3 h), prepared by pyrolysis of a zeolite-type cobalt metal–organic framework (ZIF-67) at 500 °C under N_2, promoted the hydrogenation of nitro compounds with hydrogen generated from NH_3BH_3, to give the corresponding amines in 86% to quantitative yield.

Comment: The Co-500-3 h catalyst was characterized by powder XRD, Raman spectroscopy, N_2 adsorption, ICP-AES, SEM, TEM, SAED, and XPS analyses. ICP-AES analysis indicated that the Co content of Co-500-3 h was 21.6%, and TEM images showed that the diameter of the Co nanoparticles in Co-500-3 h was generally in the range 6–20 nm.

SYNFACTS Contributors: Yasuhiro Uozumi, Yoichi M. A. Yamada, Kenta Shinohara
Synfacts 2016, 12(09), 0980 Published online: 18.08.2016
DOI: 10.1055/s-0035-1562752; **Reg-No.:** Y11116SF