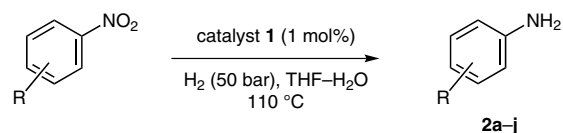
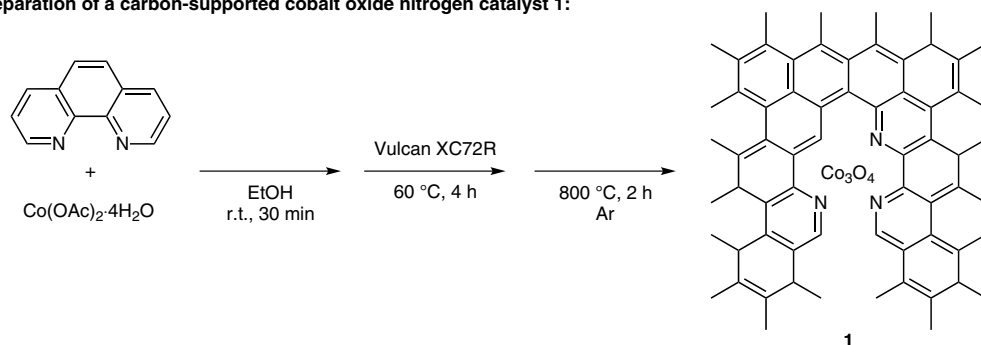


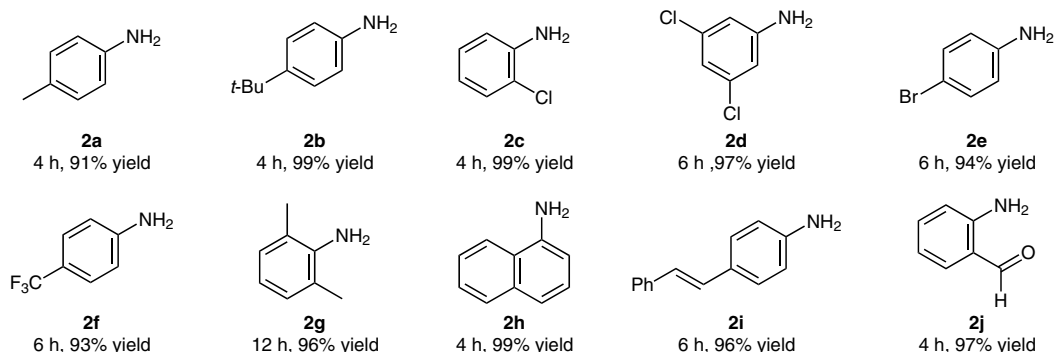
F. A. WESTERHAUS, R. V. JAGADEESH, G. WIENHÖFER, M.-M. POHL, J. RADNIK, A.-E. SURKUS, J. RABEAH, K. JUNGE, H. JUNGE, M. NIELSEN, A. BRÜCKNER, M. BELLER* (LEIBNIZ-INSTITUT FÜR KATALYSE E.V. AN DER UNIVERSITÄT ROSTOCK, GERMANY) Heterogenized Cobalt Oxide Catalysts for Nitroarene Reduction by Pyrolysis of Molecularly Defined Complexes *Nature Chem.* **2013**, *5*, 537–543.

Co₃O₄-Nitrogen Complex for Hydrogenation of Nitroarenes

Preparation of a carbon-supported cobalt oxide nitrogen catalyst **1**:



Results:



Significance: A carbon-supported cobalt oxide-nitrogen catalyst **1** was prepared by pyrolysis (800 °C) of Co(phen)₂(OAc)₂ on Vulcan XC72R (an activated carbon). The hydrogenation of nitroarenes was carried out with **1** (1 mol% copper) in THF-H₂O under 50 bar of H₂ to give the corresponding anilines **2a-j** in up to 99% yield.

Comment: The catalyst was reused nine times in the reaction of nitrobenzene where catalytic activity gradually decreased. The catalyst was characterized with TEM, energy-dispersive X-ray (EDX), XPS, and electron paramagnetic resonance (EPR).

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Category

Polymer-Supported
Synthesis

Key words

nitroarenes

cobalt oxide

phenanthroline

hydrogenation

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of the month