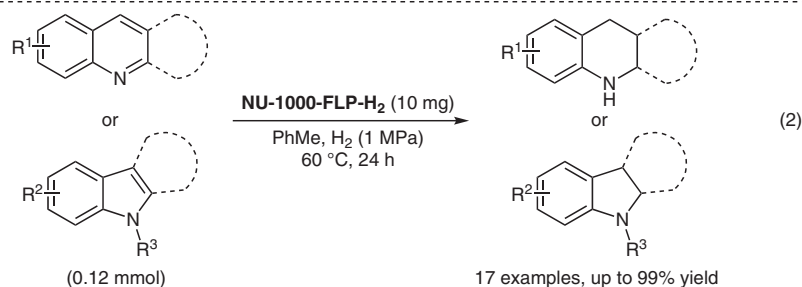
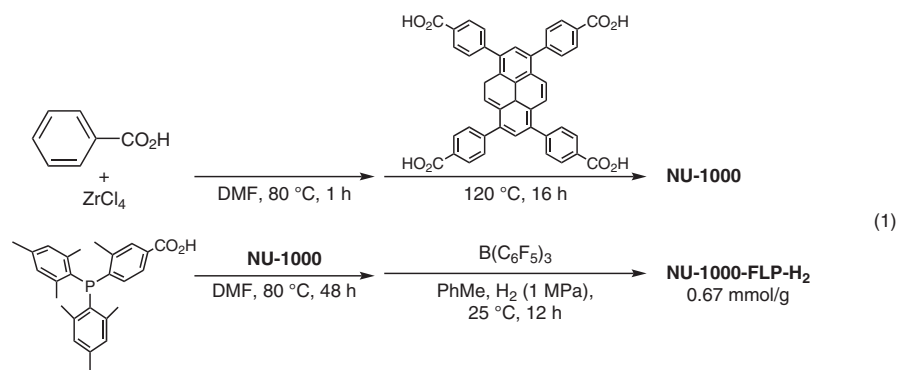
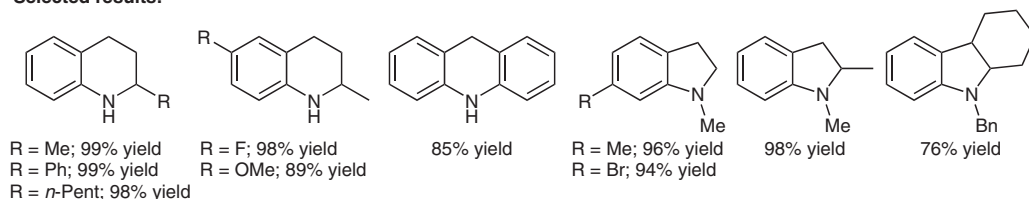


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Hydrogenation of *N*-Heterocycles Using Frustrated Lewis Pairs Incorporated in NU-1000 MOF



Selected results:



Significance: Phosphine-borane frustrated Lewis pairs incorporated in MOF (**NU-1000-FLP-H₂**) were prepared by treatment 4-(dimesitylphosphanyl)-3-methylbenzoic acid with Zr-based MOF (**NU-1000**) followed by addition of B(C₆F₅)₃ and reduction with H₂ (eq. 1). **NU-1000-FLP-H₂** catalyzed the hydrogenation of quinolines and indoles with H₂ to give the corresponding tetrahydroquinolines and indolines in up to 99% yield (eq. 2).

Comment: **NU-1000-FLP-H₂** was characterized by means of ¹H NMR, ³¹P MAS NMR, FT-IR, SEM, TEM, HAADF-STEM, EDS, PXRD, XPS, TGA, N₂ isotherms, and elemental analyses. In the hydrogenation of 2-methylquinoline, the catalyst was recovered and reused four times without significant loss of its catalytic activity.