Hydrodeoxygenation of phenol over Pd catalysts by in-situ generated hydrogen from aqueous reforming of formic acid - DTU Orbit (28/12/2018)

Hydrodeoxygenation of phenol over Pd catalysts by in-situ generated hydrogen from aqueous reforming of formic acid

Hydrodeoxygenation of phenol, as model compound of bio-oil, was investigated over Pd catalysts, using formic acid as a hydrogen donor. The order of activity for deoxygenation of phenol with Pd catalysts was found to be: Pd/SiO₂ > Pd/MCM-41 > Pd/CA > Pd/Al₂O₃ > Pd/HY approximate to Pd/ZrO₂ ≈ Pd/CW > Pd/HSAPO-34 > Pd/HZSM-5. The good performance of Pd/SiO₂ is owing to its proper pore structure and large specific surface area. The high level of Bronsted acid sites in SiO₂ also favors the deoxygenation of phenol. (C) 2016 Elsevier B.V. All rights reserved.

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