

## Highly selective hydrogenation of aromatic ketones to alcohols in water: effect of PdO and ZrO<sub>2</sub>

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### Streszczenie

Pd/ZrO<sub>2</sub> and PdO/ZrO<sub>2</sub> composites, containing Pd or PdO nanoparticles, were prepared using an original one-step methodology. These nanocomposites catalyze the hydrogenation of acetophenone (AP) at 1 bar and 10 bar of H<sub>2</sub> in an aqueous solution. Compared to unsupported Pd or PdO nanoparticles, a remarkable increase in their activity was achieved as a result of interaction with zirconia. An unsupported PdO hydrogenated AP mainly to ethylbenzene (EB), while excellent regioselectivity towards 1-phenylethanol (PE) was obtained with PdO/ZrO<sub>2</sub> and it was preserved during recycling. Similarly, regioselectivity to PE was higher with Pd/ZrO<sub>2</sub> compared to unsupported Pd NPs. PdO and zirconia resulted in high selectivity to alcohols in the hydrogenation of substituted acetophenones.

### Adres publiczny

<http://dx.doi.org/10.1039/d1dt01842f>

### Strona internetowa wydawcy

<https://www.rsc.org/>