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Liquid-Phase Hydrogenation of 1-phenyl-1-propyne on the Pd_1Ag_3/Al_2O_3 Single-Atom Alloy Catalyst: Kinetic Modeling and the Reaction Mechanism

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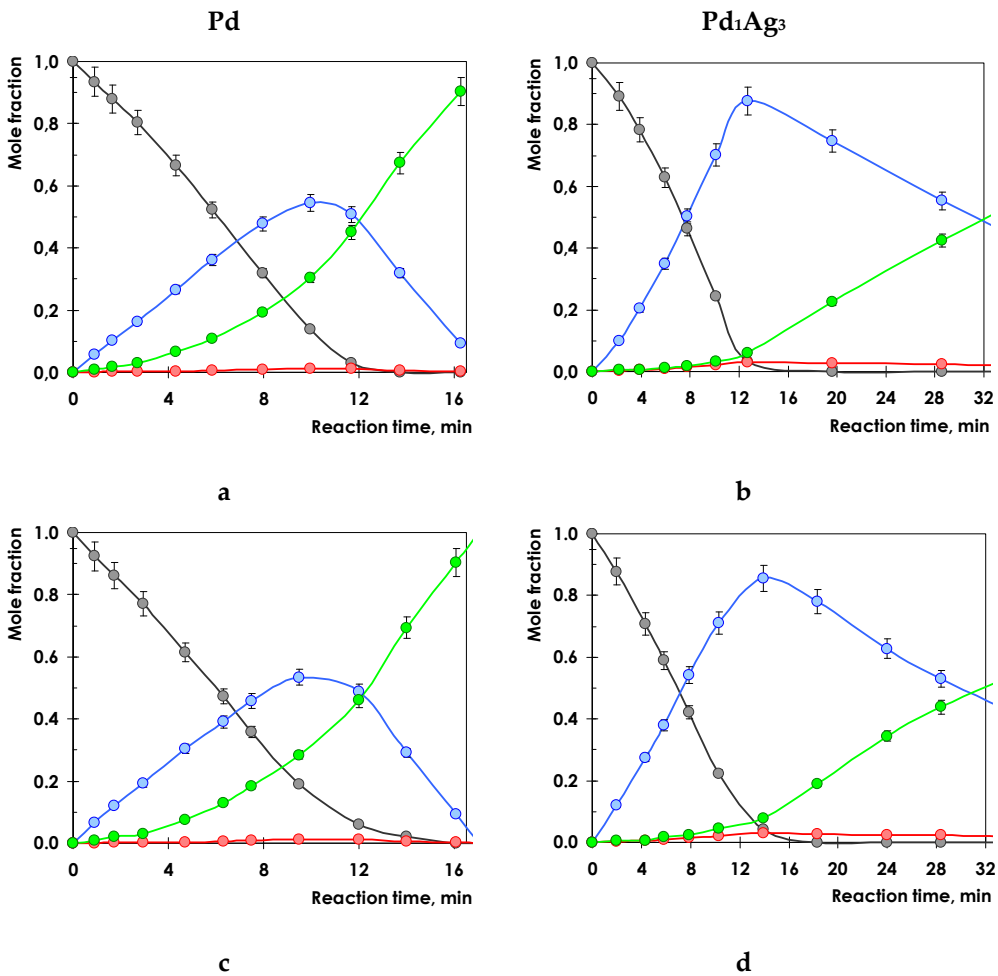

Figure S1. Product distribution for Pd and Pd_1Ag_3 catalysts – after the first (**a**,**b**) and after the firth (**c**,**d**) catalytic cycles. Conditions: T = 25°C, P(H_2) = 5 bar, m(Pd) = 1.5 mg, m(Pd_1Ag_3)= 7.5 mg, V_{C6H14} = 6 mL. The error bars are ±1 standard deviation. Black circles – 1-phenyl-1-propyne, blue circles – *cis*-propenylbenzene, red circles – *trans*–propenylbenzene; green circles – propylbenzene.

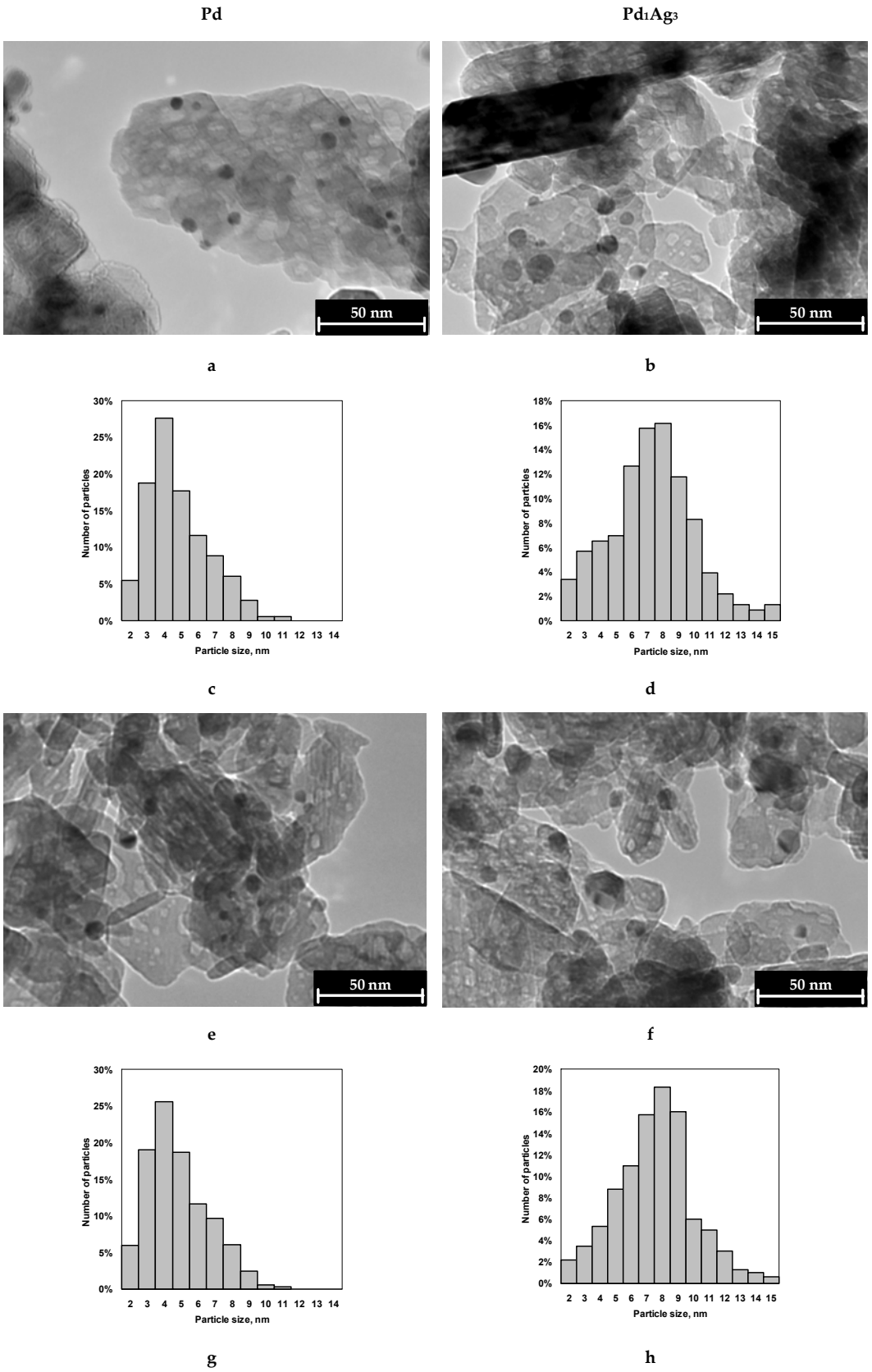

Figure S2. Representative TEM micrographs of Pd and Pd_1Ag_3 catalysts after the first (**a**,**b**) and after the fifth (**e**,**f**) catalytic cycles. Inlets (**c**) and (**d**) illustrates particle size distribution of Pd and Pd_1Ag_3 catalysts after the first catalytic cycle and (**g**) and (**h**) - after the fifth one. The average size of particles is ca. 4 nm for Pd and ca. 8 nm for Pd_1Ag_3.