

Supplemental

Tuning the electronic property of Pd nanoparticles by encapsulation within ZIF-67 shell towards excellent performance in 1,3-butadiene hydrogenation

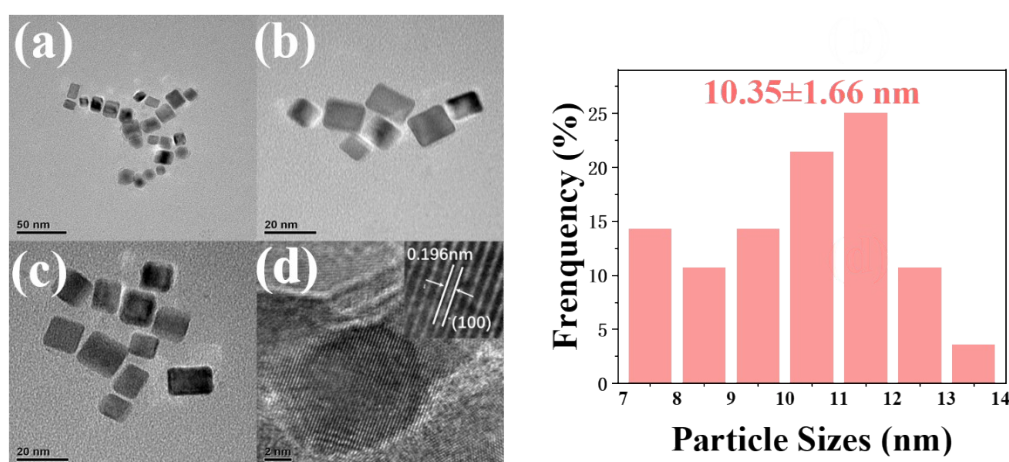


Fig. S1 TEM images of samples prepared in aqueous solutions containing 3 ml of Na_2PdCl_4 solution, 105 mg of PVP, 60 mg of ascorbic acid, and 300 mg of KBr and corresponding histograms of the Pd NCs size-distribution.

Table. S1 The content of Pd in the catalyst

Samples	Theoretical Pd loading	Actual Pd loading
1.00%-Pd@ZIF-67	1.00	0.873
1.00%-Pd/ZIF-67	1.00	0.958

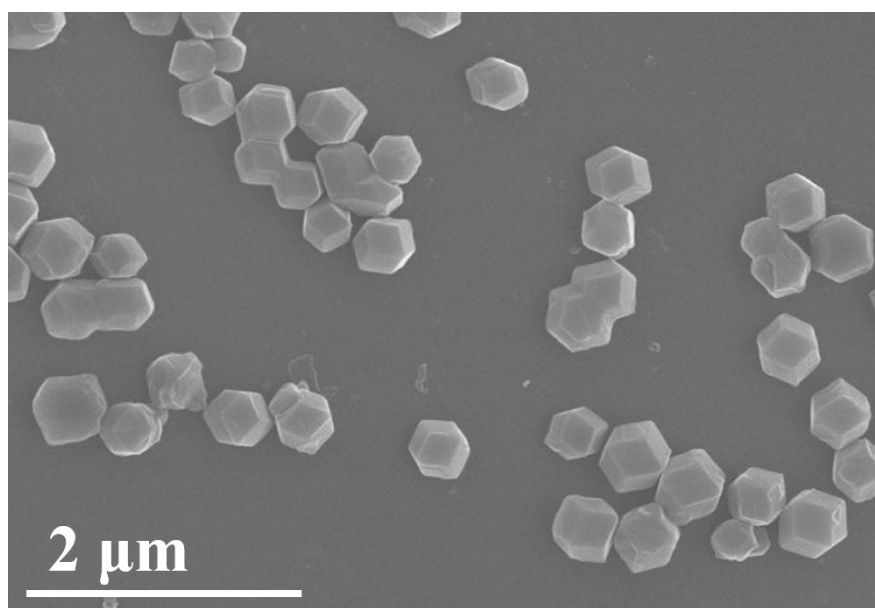


Fig. S2 SEM image of ZIF-67.

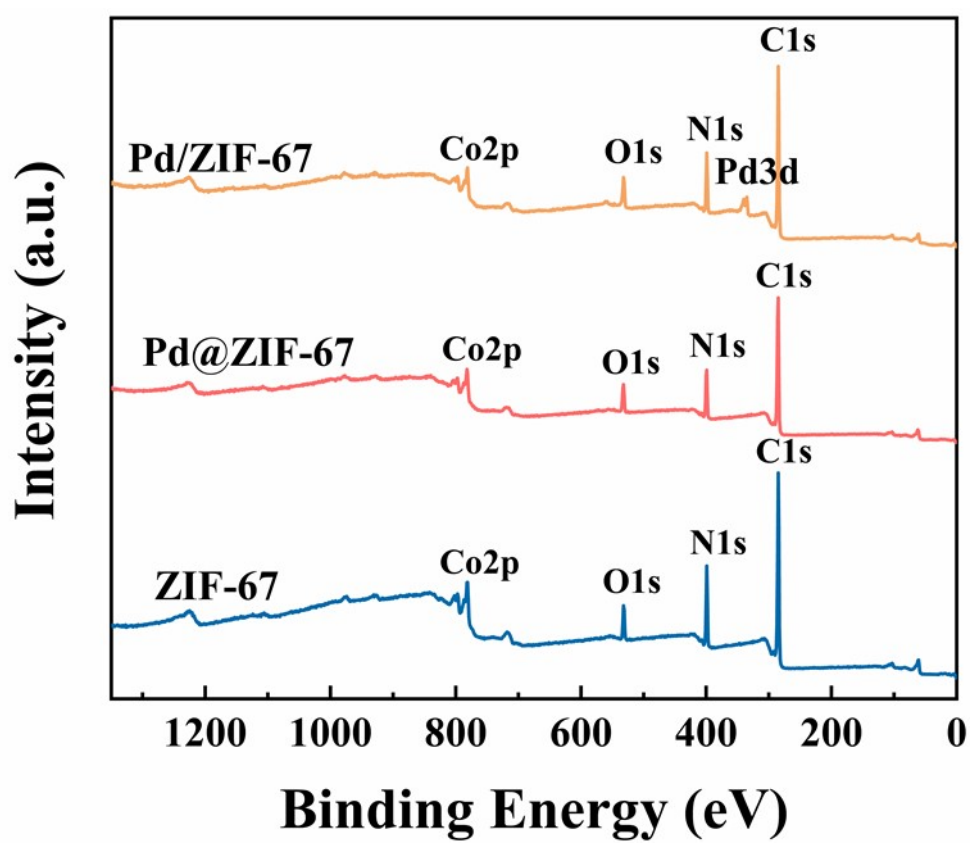


Fig. S3 XPS spectra of Pd@ZIF-67, Pd /ZIF-67 and ZIF-67.

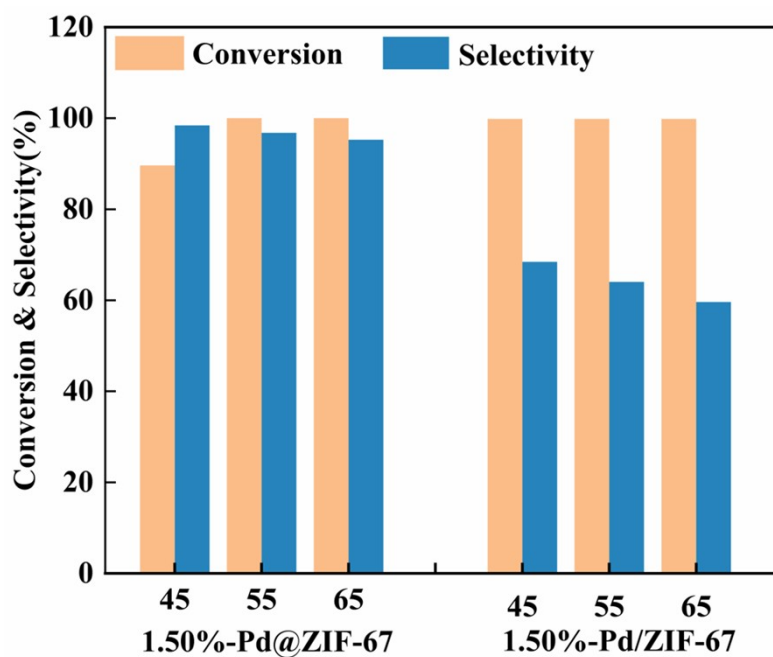


Fig. S4 1,3-Butadiene hydrogenation over 1.50%Pd@ZIF-67 and 1.50%Pd/ZIF-67 catalysts with different temperature conditions.

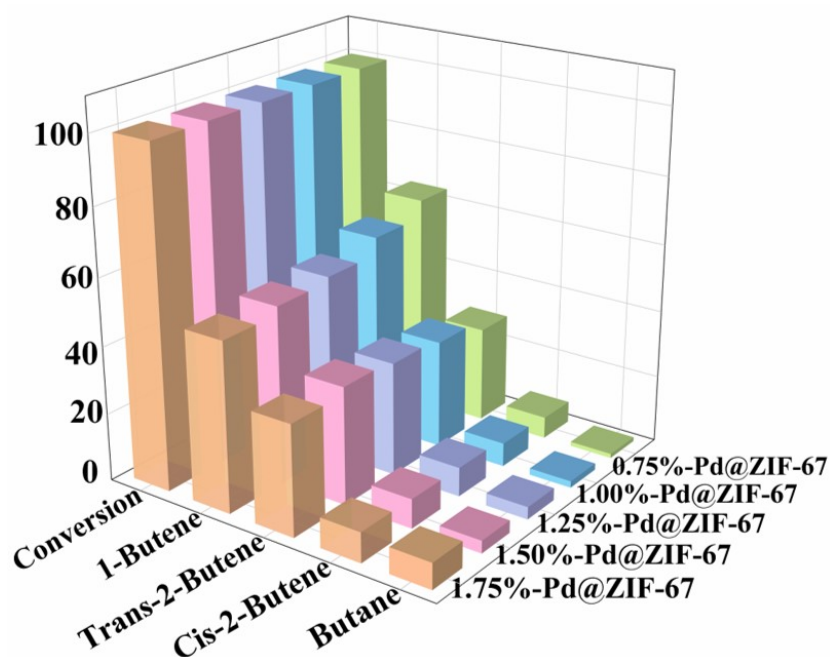


Fig. S5 1,3-Butadiene hydrogenation over Pd@ZIF-67(10.35 nm) with different Pd loading amounts.

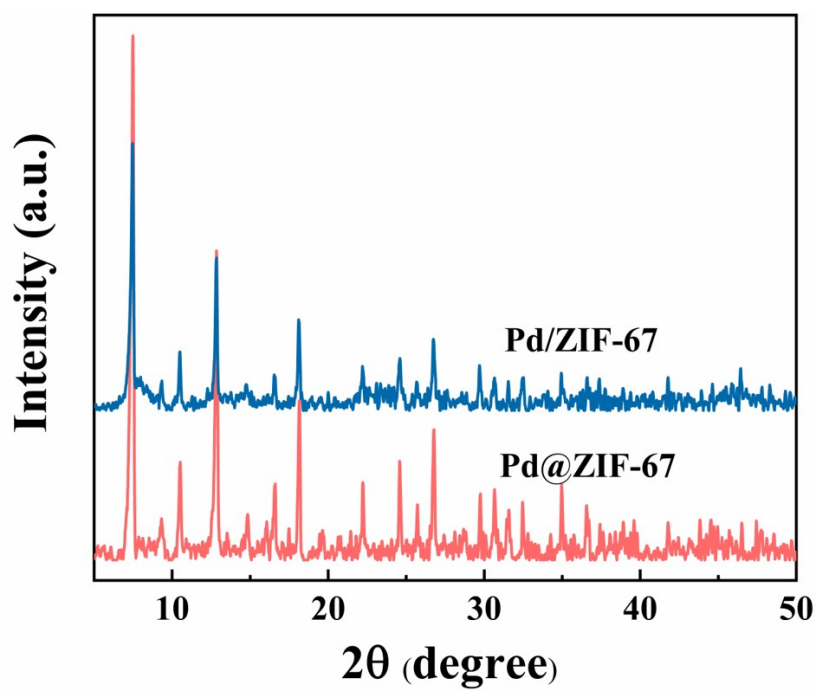


Fig. S6 XRD patterns of 1.00%-Pd /ZIF-67 and 1.00%-Pd@ZIF-67 after reaction of 40 h.

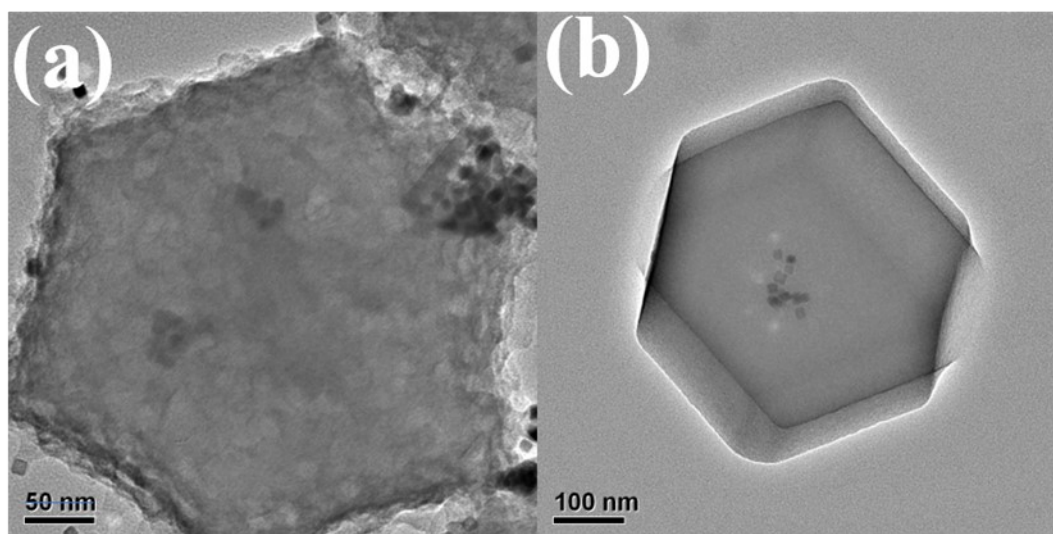


Fig. S7 TEM images of (a) Pd /ZIF-67 and (b) Pd@ZIF-67 after reaction of 40 h.