Electronic Supplementary Material (ESI) for RSC Advances.

Supplemental information

The turnover frequency (TOF) calculation

TOF is calculated according to the following formula:

$$TOF = \frac{n_1 \alpha}{n_2 t}$$

Where $\mathbf{n_1}$ is the mole of substrate (0.5mmol), $\boldsymbol{\alpha}$ is the conversion rate of substrate (99%), $\mathbf{n_2}$ is the mole of the metal (0.08mmol %), **t** is the reaction time (1h).

$$TOF=618.75\ h^{-1}$$

The turnover number (TON) calculation

TON is calculated according to the following formula:

$$TOF = \frac{TON}{t}$$

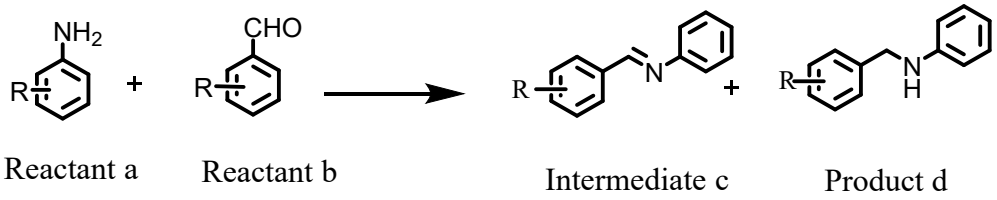
$$TON=618.75$$

Table. S 1 The Pd content of the fresh and reused Pd@UiO-66-NH_2@mSiO_2 determined by ICP-OES (5 mg catalyst (mmol % of Pd))

Sample	Pd (mmol %)
fresh	0.08
reused	0.07

Table. S 2 BET surface area and pore structure characterization parameters of catalyst

Sample	BET surface area ($m^2 g^{-1}$)	Pore volume ($cm^3 g^{-1}$)	Average pore size (nm)
UiO-66-NH_2	1107.3	0.6	2.2
Pd@UiO-66-NH_2	1002.6	0.5	2.6
Pd@UiO-66-NH_2@$mSiO_2$	920.3	0.7	3.2



Reactant a Reactant b Intermediate c Product d

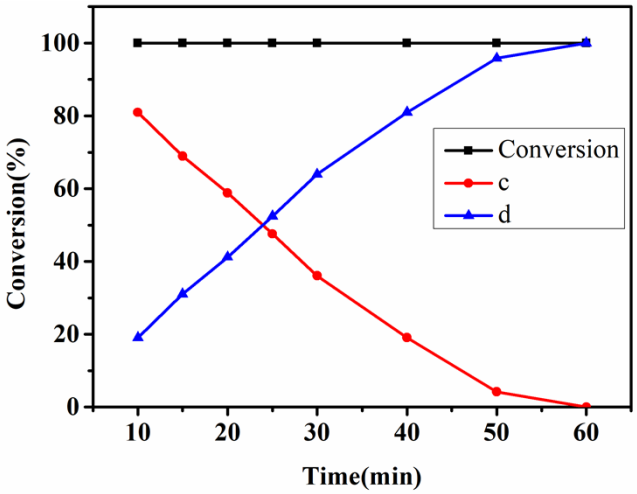


Figure. S 1 Products distribution at different reaction time.

Reaction Conditions: 25 ℃, atmospheric pressure, 5 mg catalyst,

0.5 mmol Aldehydes, 1 mmol Amines, 3 mL EtOH, H_2 balloon, reaction time: 1 h.

The GC-MS spectra of substrates

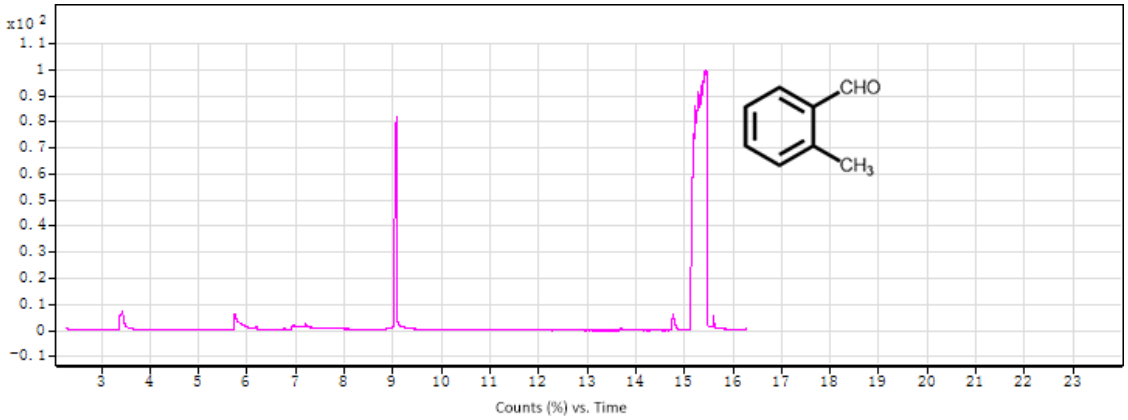


Figure. S 2 The GC-MS spectrum of 2-methylbenzaldehyde

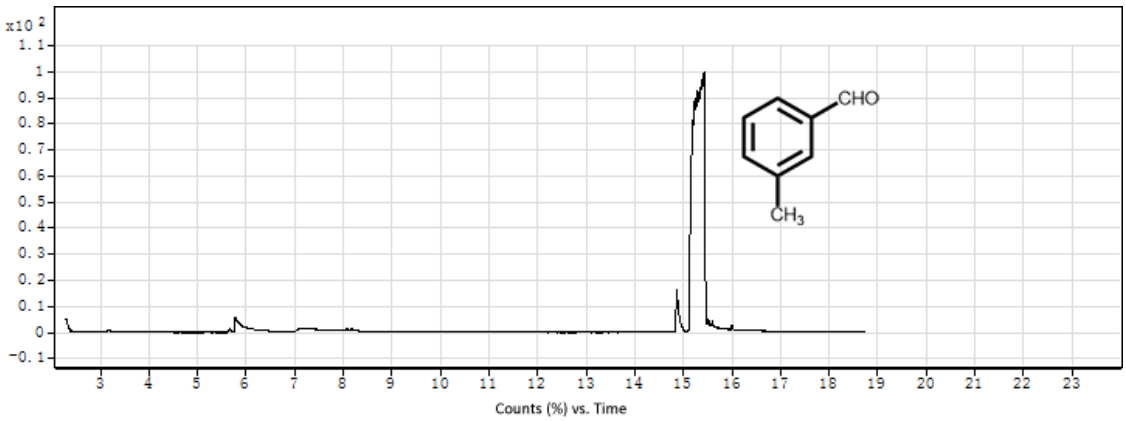


Figure. S 3 The GC-MS spectrum of 3-methylbenzaldehyde

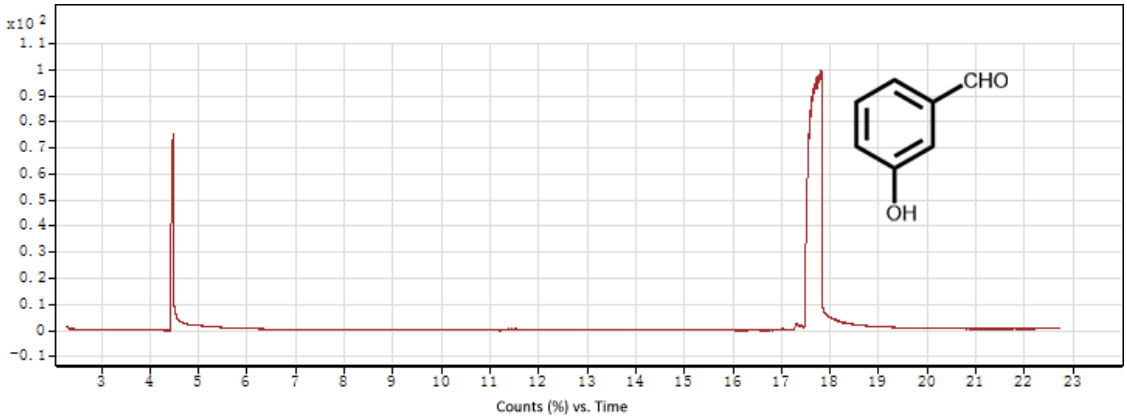


Figure. S 4 The GC-MS spectrum of 3-hydroxybenzaldehyde

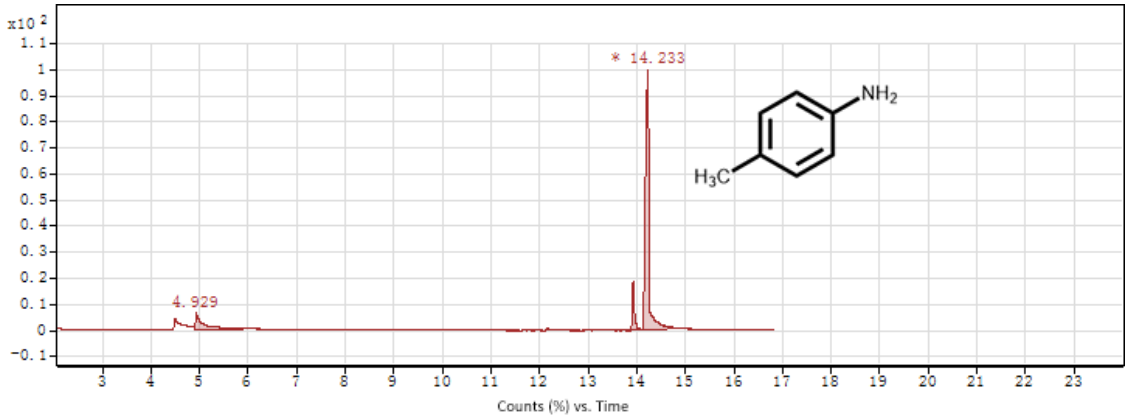


Figure. S 5 The GC-MS spectrum of p-Toluidine

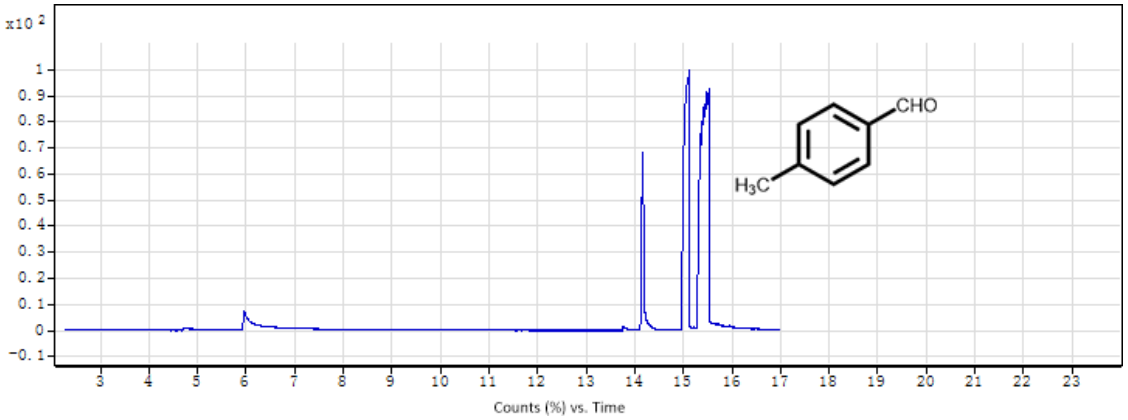


Figure. S 6 The GC-MS spectrum of 3-methylbenzaldehyde

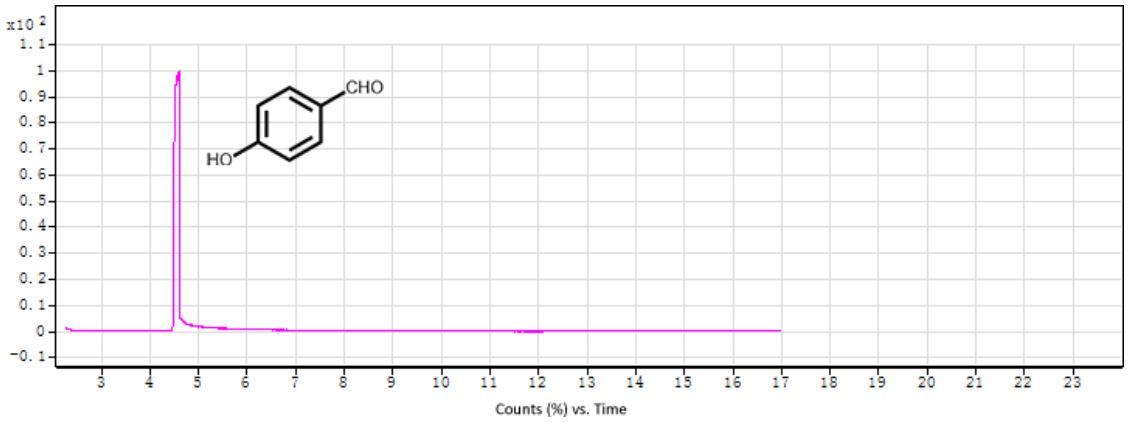


Figure. S 7 The GC-MS spectrum of p-hydroxybenzaldehyde