SUPPORTING INFORMATION

A) Catalyst preparation

Preparation of MIL-101: Cr^{3+}-MIL-101 was prepared according to the reported procedure.[i] Briefly, 500 mg of terephtalic acid and 800 mg $Cr(NO_3)_3 \cdot 9H_2O$ were dissolved in 15 mL H_2O and 40 µL HF (40%). The solution was placed inside an autoclave and kept at 200ºC for 8h in an oven. The resulting material was recovered by filtration, washed with DMF and hot ethanol, and dry at RT in air.

Preparation of Pd@MIL-101: The preparation procedure for this material was adapted from that reported by Pan et al.[ii] Briefly, 500 mg of Cr^{3+}-MIL-101 were dried under a vacuum at 120ºC, and impregnated with 0.5 mL of an aqueous solution containing 10 mg mL^{-1} of $Pd(NO_3)_2 \cdot 2H_2O$. The solid was then dried in air and heat treated up to 200ºC under a N_2 atmosphere and kept at this temperature under a H_2 atmosphere for additional 2 h to reduce the palladium precursor. According to ICP, the Pd content of this samples was 0.28 wt% Pd.

B) Catalytic tests

The citronellal isomerization reaction was performed at 80ºC under a N_2 atmosphere. 60 µl of racemic citronellal and 30 mg of MOF was placed inside a round bottom flask with 0.5 ml of cyclohexane. The reaction was followed by GC-MS, using dodecane as external standard.

For the tandem isomerization/hydrogenation reaction, the N_2 atmosphere was replaced by a H_2 atmosphere ($p(H_2)$ = 0.8 MPa). upon completion of the isomerization reaction.

C) Textural properties of the catalysts

Table S1

Sample	S_{BET} ($m^2\ g^{-1}$)	V_p ($cm^3\ g^{-1}$)
Cr^{3+}-MIL-101	2336	1.40
Pd@MIL-101	2182	0.97
Pd@MIL-101 used[a]	1619	0.72

[a] Material recovered after one catalytic cycle (tandem one-pot two steps isomerization/hydrogenation of citronellal to menthol at 80ºC and $p(H_2)$=0.8 MPa).

D) XRD analysis

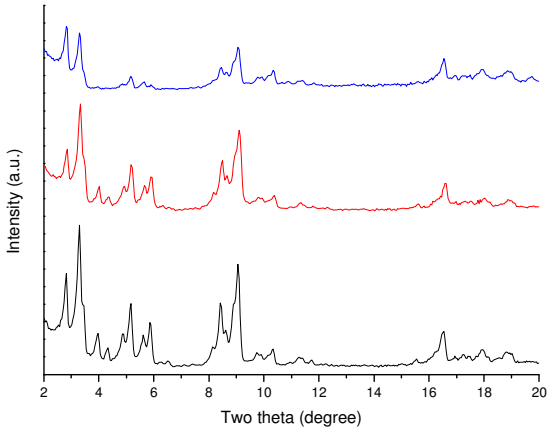

Fig. S1. XRD patterns (Cu Kα radiation) of MIL-101 (black), Pd/MIL-101 before the reaction (red) and Pd/MIL-101 after the reaction (blue).

E) TEM analysis

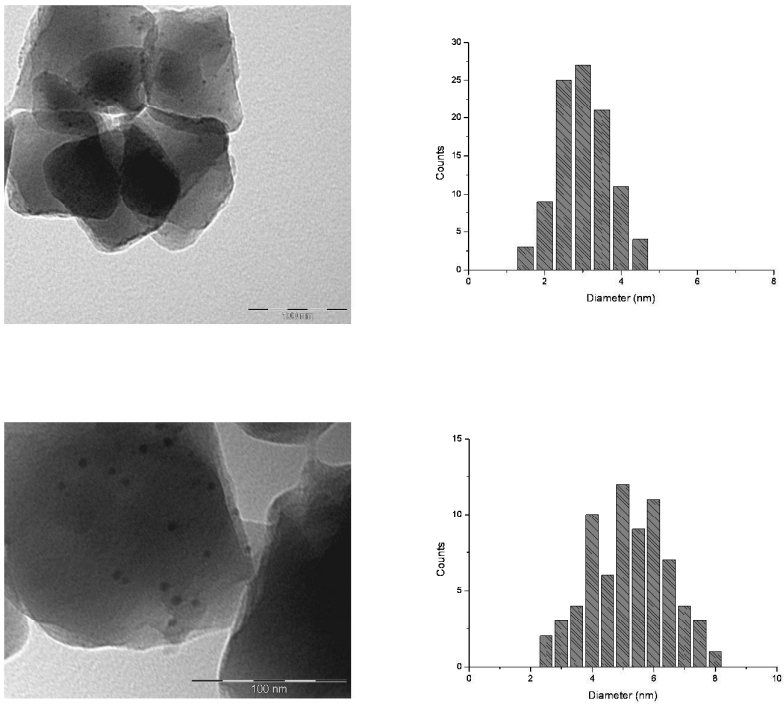

Fig. S2. TEM images and particle size distributions of (top) fresh and (bottom) used Pd@MIL-101.

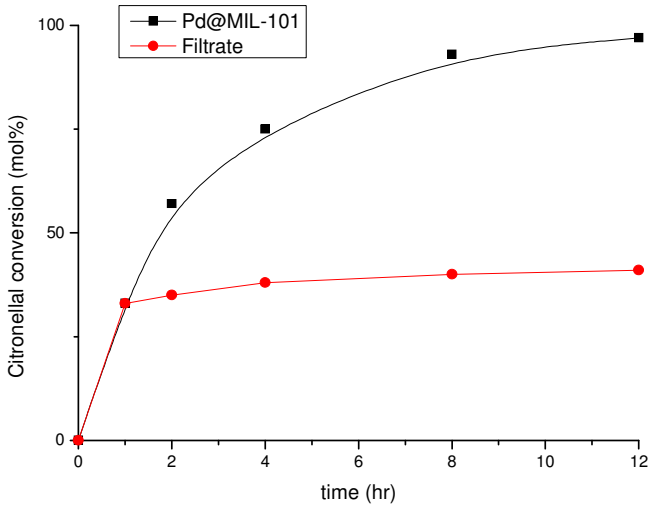

Fig. S3. Hot filtration test. Black curve: Conversion of citronella over Pd@MIL-101. Red curve: The reaction was carried out in the presence of Pd@MIL-101 for 1 hr. Then the catalysts was removed by filtration at the reaction temperature and the reaction was followed in the filtrate at the same temperature.

[i] G. Ferey, C. Mellot-Draznieks, C. Serre, F. Millange, J. Dutour, S. Surble and I. Margiolaki, *Science*, 2005, **309**, 2040-2042.
[ii] Y. Pan, B. Yuan, Y. Li and D. He, *Chem. Commun.*, 2010, **46**, 2280-2282.