Electronic Supplementary Material (ESI) for Catalysis Science & Technology.

Supporting Information

Chemoselective transfer hydrogenation of α, β-unsaturated carbonyl compounds using potassium formate over amine-grafted Ru/AlO(OH) catalysts

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Table S1. Textural properties of Ru/AlO(OH) samples

Ru (wt. %)	Surface area (m^2 g^{-1})	Pore volume (cm^3 g^{-1})
1	425	1.01
2	380	0.86
5	366	0.49
8	242	0.30
10	152	0.18

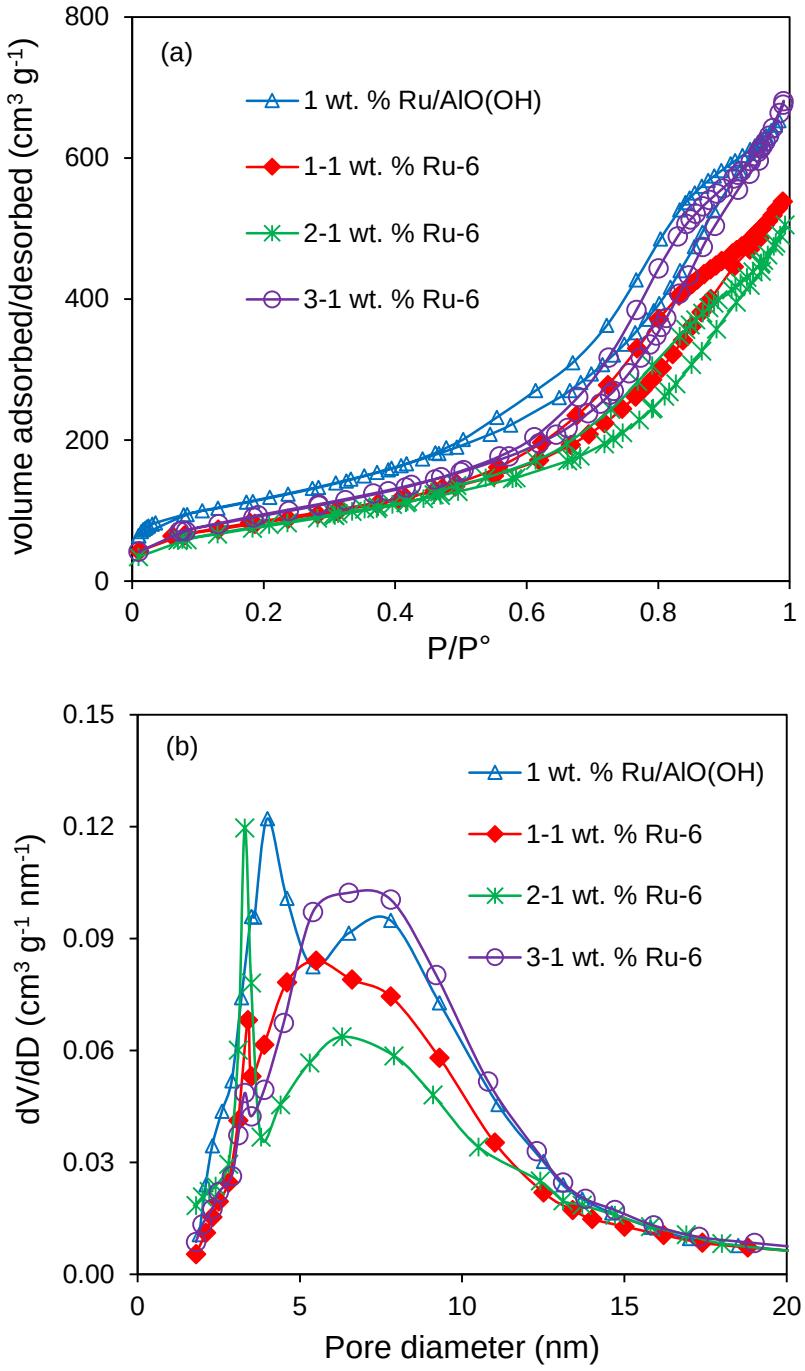

Figure S1. N_2 adsorption-desorption isotherms (a) and pore size distribution (b) for 1 wt. % Ru/AlO(OH) and amines **1**, **2** and **3**-grafted 1 wt. % Ru/AlO(OH) with an amine/Ru constant at 6.

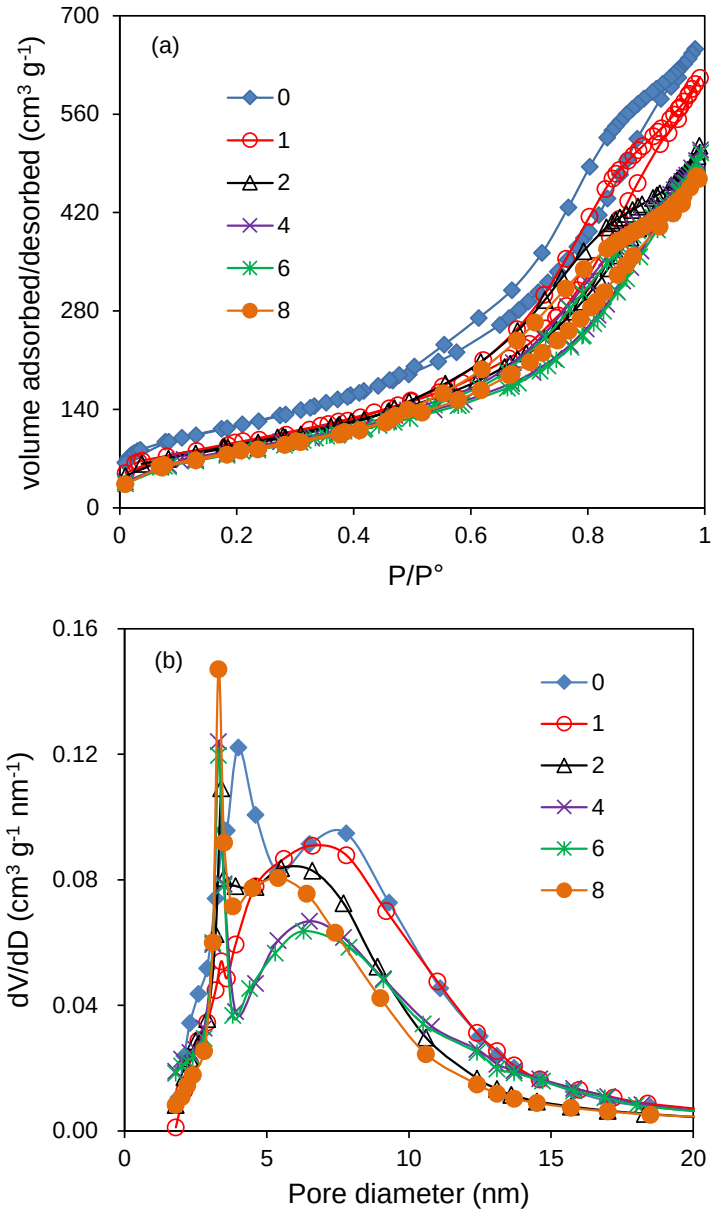

Figure S2. N_2 adsorption-desorption isotherms (a) and pore size distribution (b) for the amine **2**-grafted 1 wt. % Ru/AlO(OH) with different amine 2/Ru molar ratio.

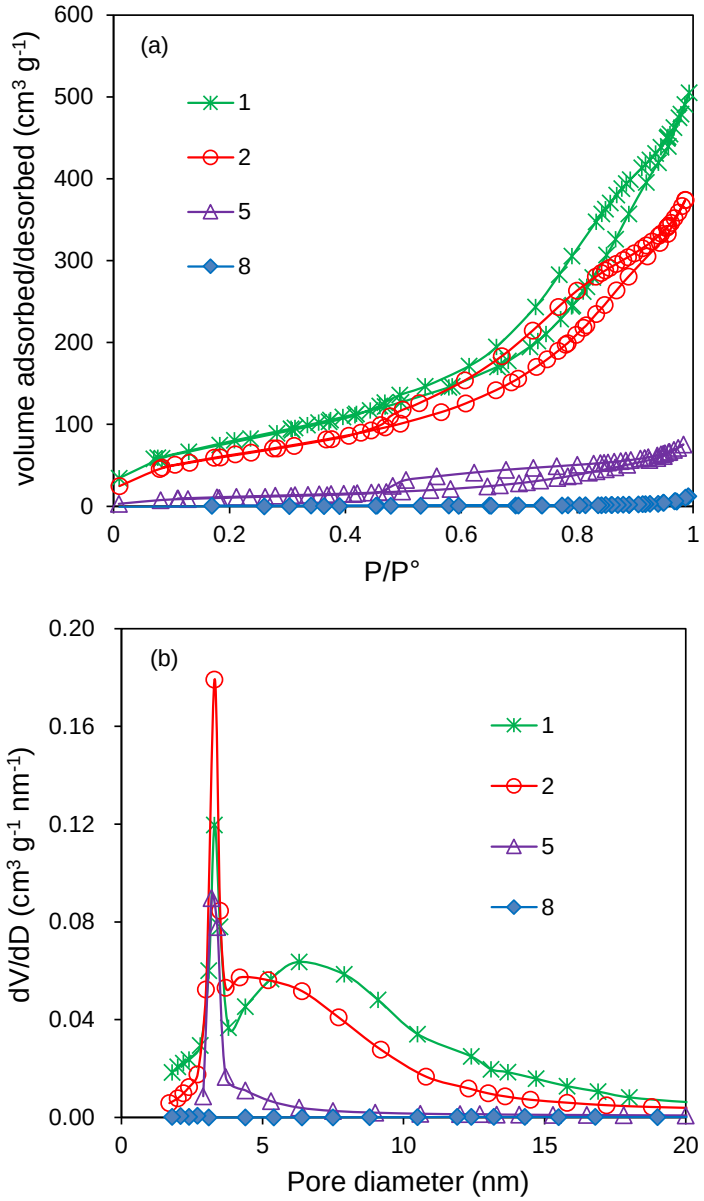

Figure S3. N_2 adsorption-desorption isotherms (a) and pore size distribution (b) for the amine **2**-grafted Ru/AlO(OH) with different Ru loading at an amine/Ru of 6.

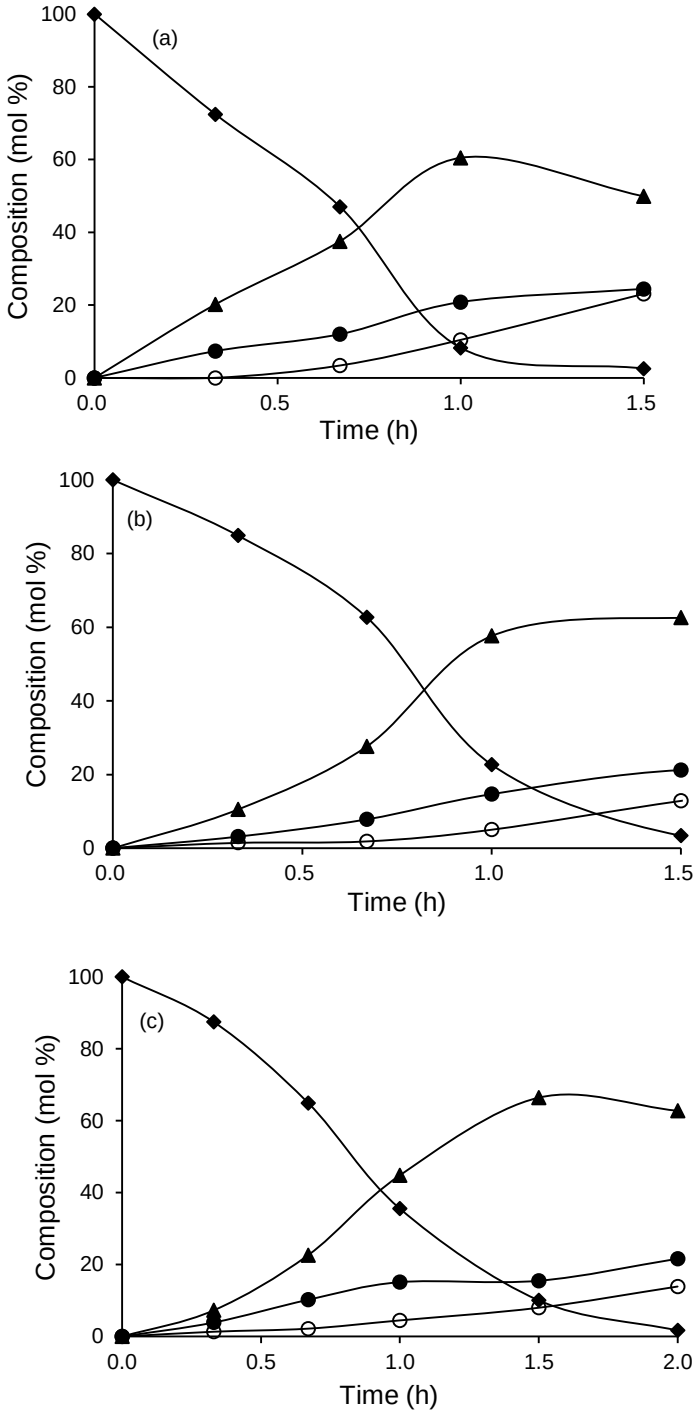

Figure S4. Kinetic profile for the transfer hydrogenation of cinnamaldehyde using Ru/AlO(OH) with Ru loading of (a) 5, (b) 8 and (c) 10 wt. %. (♦) cinnamaldehyde (●) cinnamyl alcohol (▲) 3-phenylpropanal (○) 3-phenylpropanol.

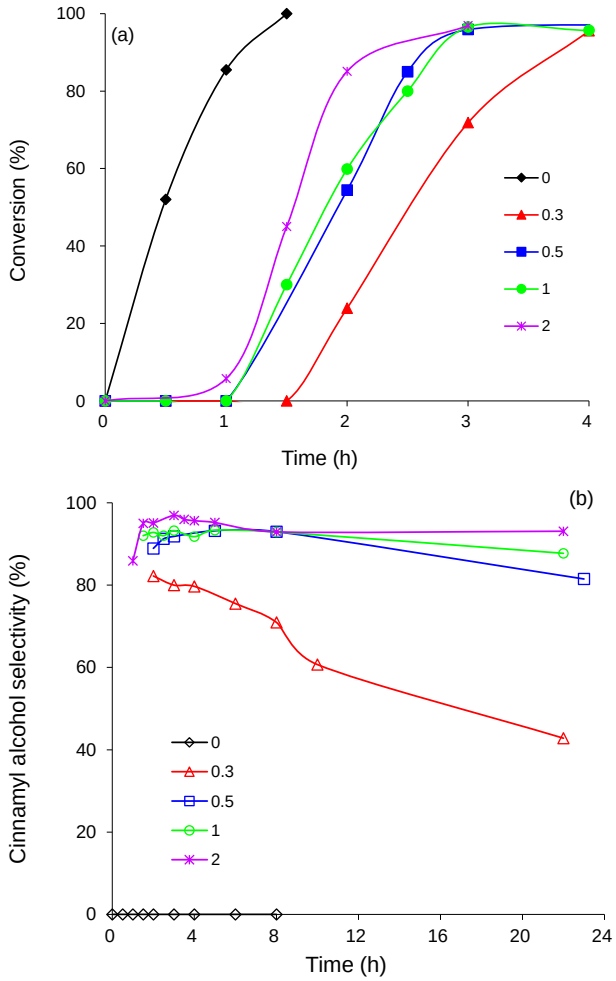

Figure S5. Effect of ethylenediamine/Ru molar ratio on the (a) conversion and (b) cinnamyl alcohol selectivity in the transfer hydrogenation of cinnamaldehyde over 1 wt. % Ru/AlO(OH).

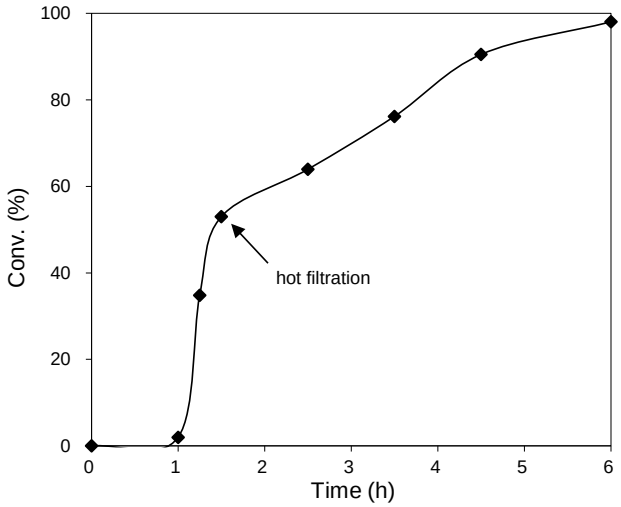

Figure S6. Leaching test for the transfer hydrogenation of cinnamaldehyde over 1 wt. % Ru/AlO(OH) at an EDA/Ru of 2.

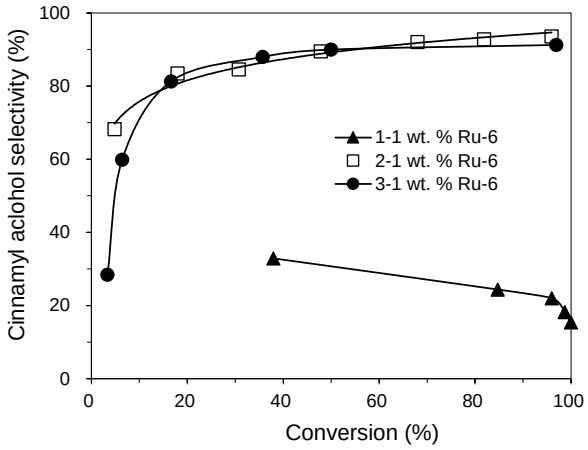

Figure S7. Cinnamyl alcohol selectivity as a function of conversion over (▲) **1-** (□) **2**- and (◆) •**3-**grafted-1 wt. % Ru/AlO(OH) at amine/Ru molar ratio of 6.

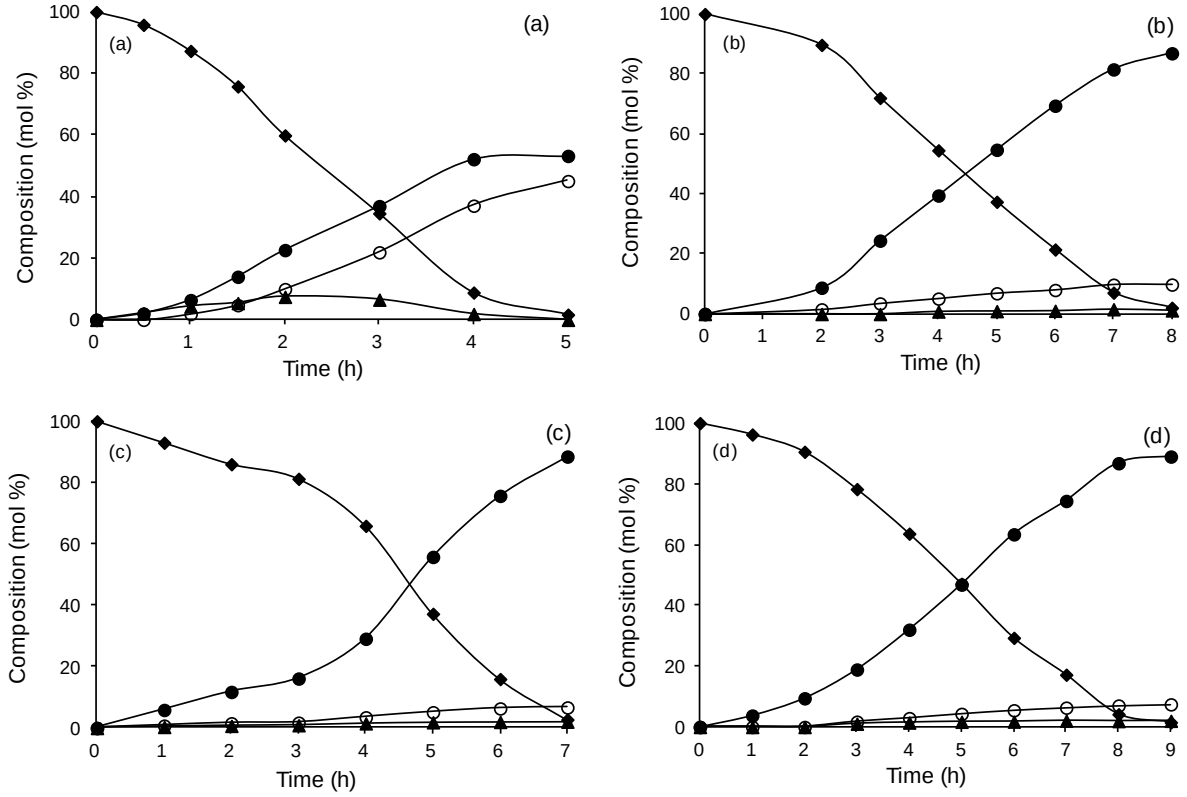

Figure S8. Transfer hydrogenation of cinnamaldehyde over the amine **2** grafted-1 wt. % Ru/AlO(OH) at amine/Ru molar ratio of (a) 1 (b) 2 (c) and (d) 8. (♦) cinnamaldehyde (●) cinnamyl alcohol (▲) 3-phenylpropanal (○) 3-phenylpropanol.

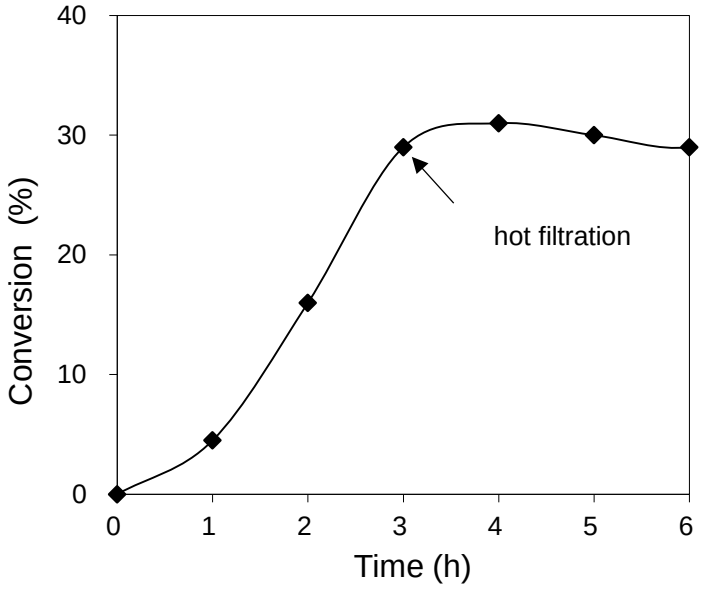

Figure S9. Hot filtration test for the transfer hydrogenation of cinnamaldehyde over **2**-1 wt. % Ru-6.