

Supporting Information

Solid state synthesis of Ru-MC with highly dispersed semi-embedded ruthenium nanoparticles in porous carbon framework for benzoic acid hydrogenation

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Table S1 Hydrogenation of BA over Ru-MC-g catalyst at various reaction conditions

Entry	Solvents	Temperature (°C)	Pressure (MPa)	BA/Ru (mol ratio)	Conv. (%)	CCA Sel. (%)
1	Water	120	1.0	833	5.00	86.5
2	Water	120	2.0	833	32.2	89.9
3	Water	120	4.0	833	93.7	99.1
4	Water	70	0.1	416	6.15	97.6
5	Water	70	2.0	416	37.1	97.0
6	Water	70	4.0	416	78.4	99.4
7	Water	70	6.0	416	92.9	99.8
8	Water	120	4.0	833	93.7	99.1
9	Ethanol	120	4.0	833	17.3	67.5
10	Acetic acid	120	4.0	833	8.4	70.7
11	Tetrahydrofuran	120	4.0	833	0	0

a: entry 1-3, 8-11: BA 3.3 mmol, catalyst 20 mg, solvent water 25 mL, 120 °C, 1000

RPM. entry 4-7: BA 6.6 mmol, catalyst 20 mg.

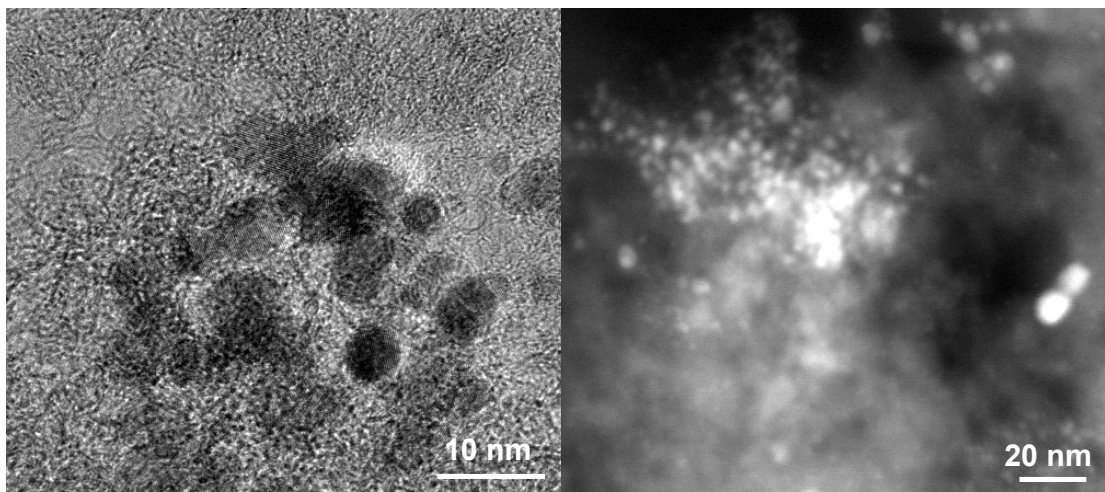


Fig. S1 HRTEM and STEM images for Ru-MC-g* catalyst.

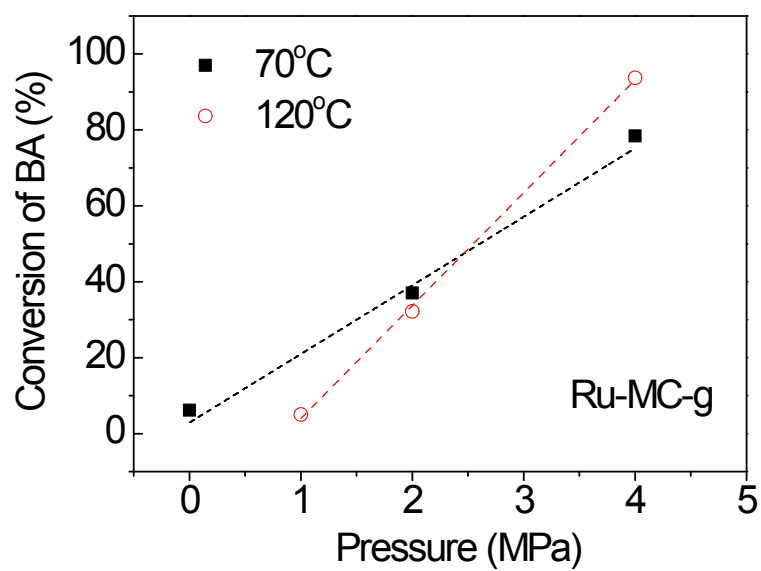


Fig. S2 The effect of H₂ pressure on the catalytic performance for Ru-MC-g catalyst.

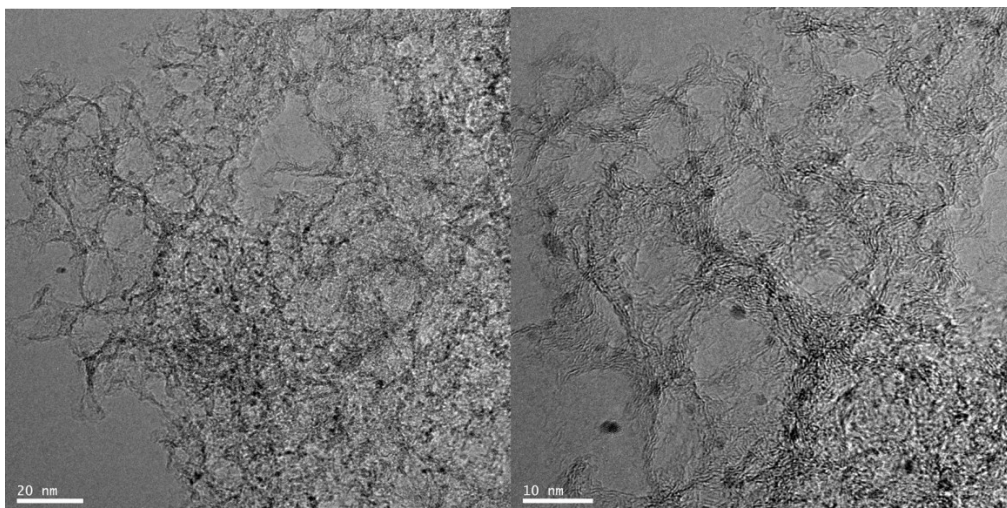


Fig. S3 HRTEM images for Ru-MC-g catalyst after 4 cycles reaction.