

Electronic Supplementary Information

Design of nitrogen-doped, graphitized 2D hierarchical porous carbons as efficient solid base catalysts towards transesterification to biodiesel

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Table S1 A comparison in the transesterification of tripalmitin with methanol catalyzed by N-HPC-800 and other reported solid catalysts.

Catalysts	Reaction conditions	Yield of methyl palmitate (%)	Refs.
N-HPC-800	1.04 mmol of tripalmitin, 3.76 mL of methanol, 50 mg of catalyst, 65 °C, 14 h	86.3	This work
Ta ₂ O ₅ /SiO ₂ -[H ₃ PW ₁₂ O ₄₀ /Me]	2 wt% catalyst, tripalmitin: MeOH =1:90, 65 °C, 24 h	65.9	<i>Green Chem.</i> , 2009, 11 , 314–317
PDVB-SO ₃ H-24	1.04 mmol of tripalmitin, 2.47 mL of methanol, 0.1 g of catalyst, 65 °C, 12 h	78.0	<i>Catal. Comm.</i> , 2012, 26 , 140–143
Nafion NR50	1.04 mmol of tripalmitin, 3.76 mL of methanol, 50 mg of catalyst, 65 °C, 16 h	61.1	<i>Appl. Catal. B: Environ.</i> , 2013, 136–137 , 193–201
SO ₄ /ZrO ₂		53.1	
PS-SO ₃ H/SiO ₂	0.52 mmol of tripalmitin, 2 mL of methanol, 0.04 mmol of H ⁺ , 80 °C, 21 h	80.9	<i>Appl. Catal. A: Gen.</i> , 2016, 516 , 1–8
H ₃ PW ₁₂ O ₄₀ /Ta ₂ O ₅ -10.8	2 wt% catalyst, tripalmitin: MeO =1:90, 65 °C, 6 h	51.4	<i>Green Chem.</i> , 2008, 10 , 746–755
PrSO ₃ H/SBA-BTSP100%	10 mmol of tripalmitin, 12.5 mL of methanol, 50 mg of catalyst, 80 °C, 24 h	74.0	<i>Catal. Lett.</i> , 2015, 145 , 1483–1490
NPC-[C ₃ N][SO ₃ CF ₃]	2.08 mmol of tripalmitin, 0.2 g of catalyst, 7.41 mL of methanol, 65 °C, 14 h	82.9	<i>Catal. Sci. Technol.</i> , 2016, 6 , 2995–3007
SO ₄ ²⁻ -1.2/ZrO ₂ -SiO ₂ (Et-1.00)	0.442 g of tripalmitin, 2.0 mL of methanol, 0.1 g of catalyst, 65 °C, 10 h	51.8	<i>ChemSusChem</i> , 2011, 4 , 744–756
NaOH	0.84 g of tripalmitin, 3.76 mL of methanol, 0.05g of catalyst, 65 °C, 3 h	85.2	<i>ChemSusChem</i> , 2011, 4 , 1059–1062
MOP-ethylbenzene-SO ₃ H	1.04 mmol of tripalmitin, 2.47 mL of methanol, 0.1 g of catalyst, 65 °C, 14 h	86.7	<i>Green Chem.</i> , 2016, 18 , 6536–6544

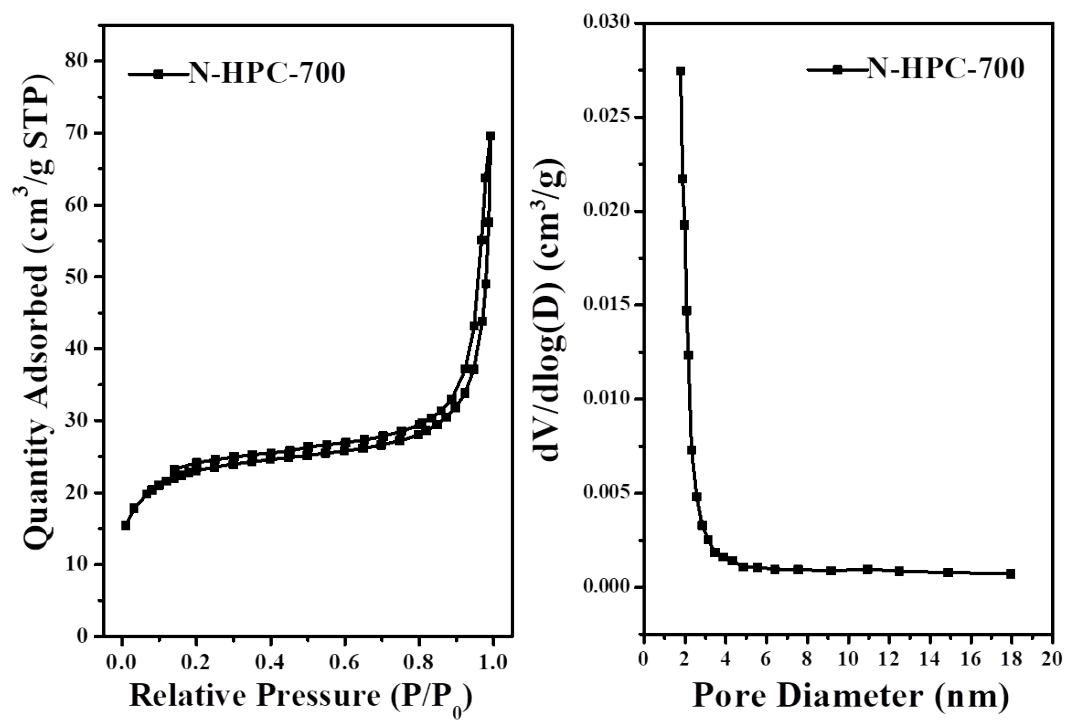


Figure S1 (left) N₂ adsorption–desorption isotherm and (right) pore size distribution of N-HPC-700.