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Supplementary information

New Porous Organocatalysts for Cycloaddition of CO_2 and Epoxides

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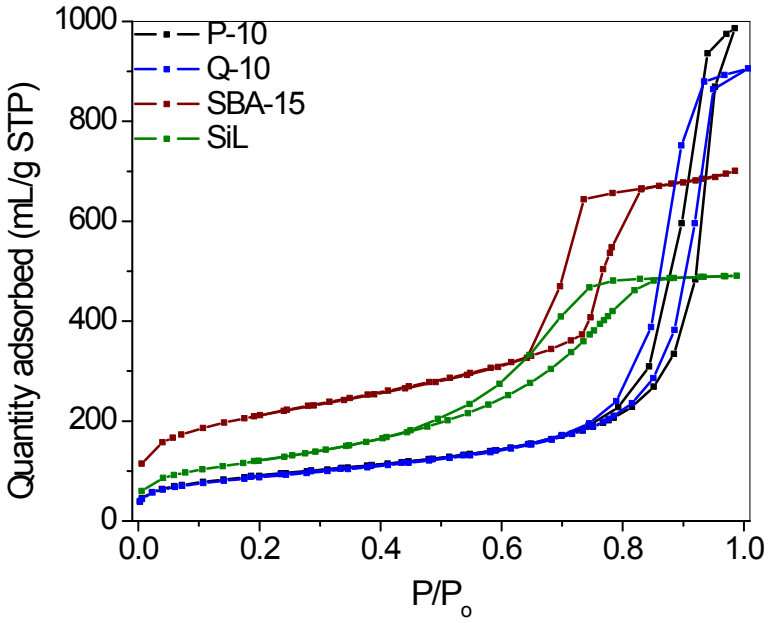


Figure S1. Nitrogen adsorption–desorption isotherms of pristine supports

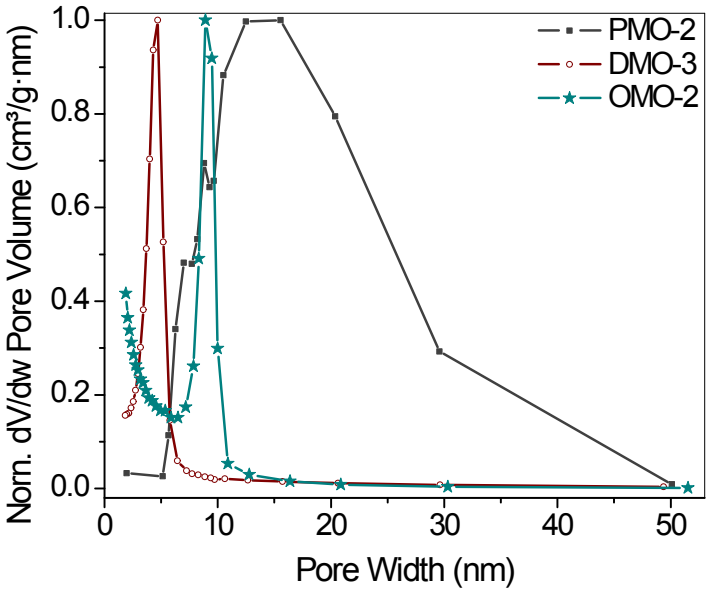


Figure S2. Pore size distribution for representative organosilicas

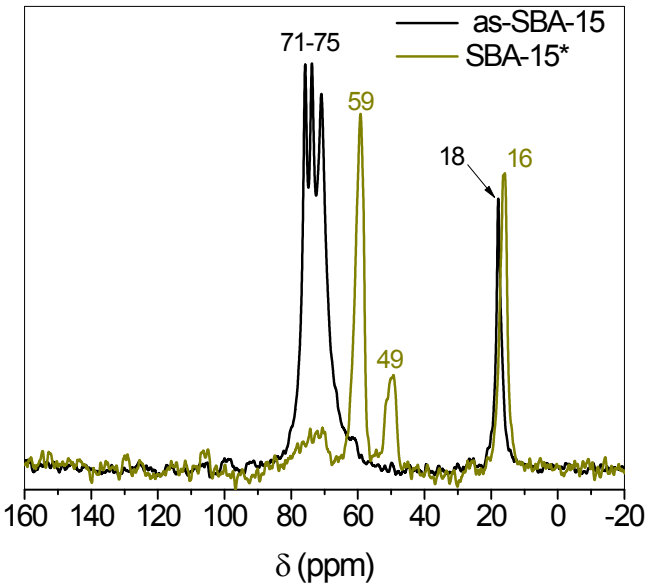


Figure S3. ^{13}C CP-MAS NMR of SBA-15; (black) as-synthesized, as-SBA-15 and (dark yellow) solvent-extracted (SBA-15*)

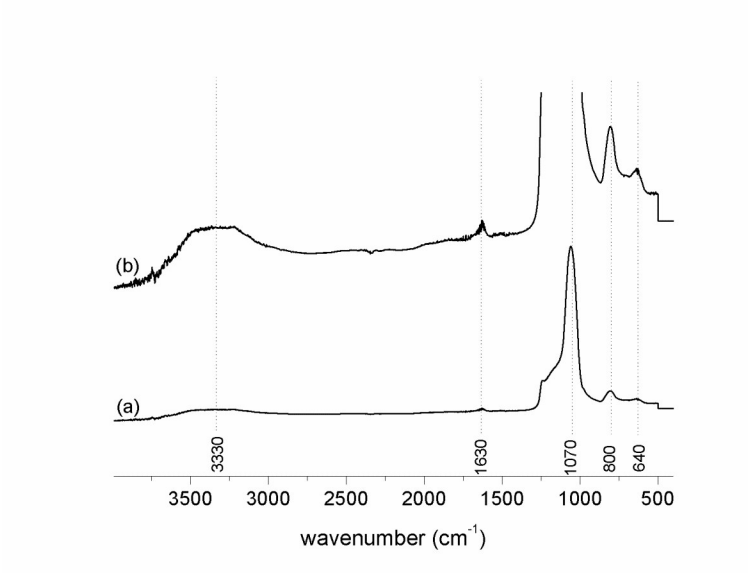
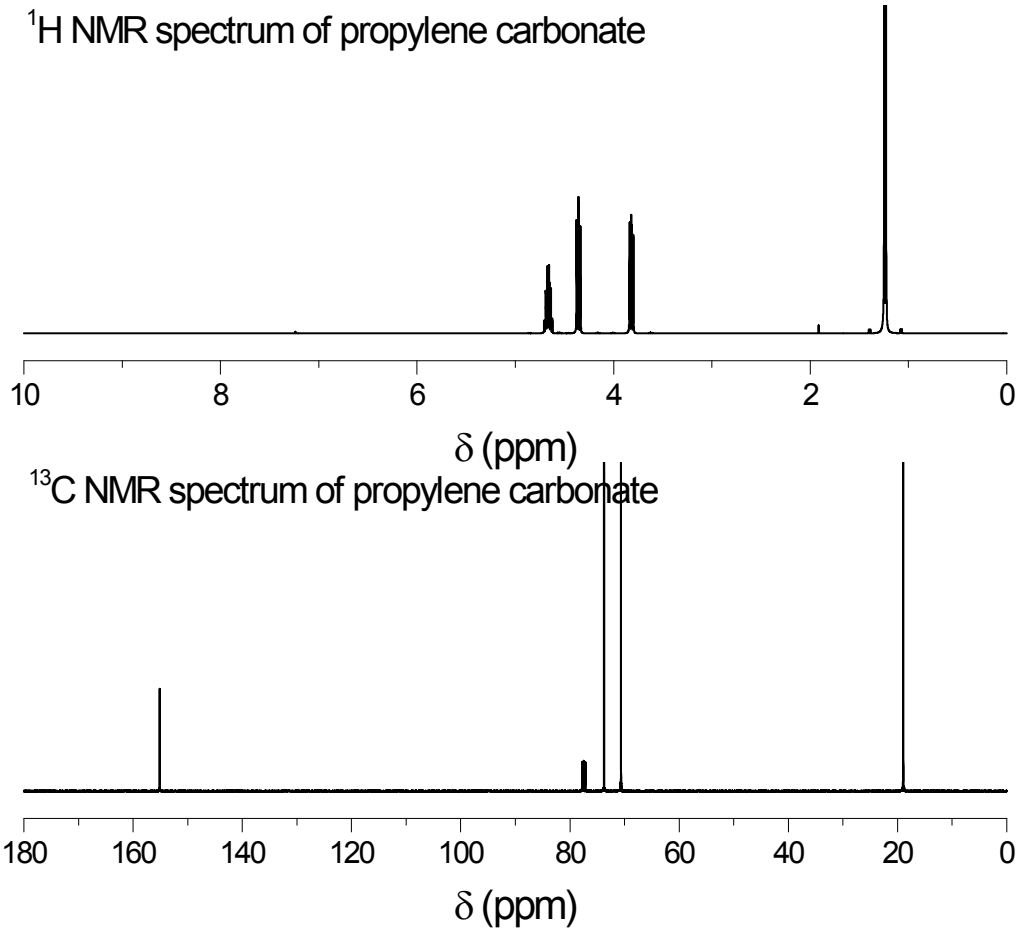


Figure S4: ATR-IR spectra of silica support (similar spectra were obtained for all support materials)

^{1}H and ^{13}C NMR spectra of cyclic carbonates

^{1}H NMR (400 MHz, $CDCl_3$): δ= 1.50 (d, 3H, CH_3), 3.81 (dd, 1H, CH_2), 4.38 (dd, 1H, CH_2), 4.67 (m, 1H, CH) ppm

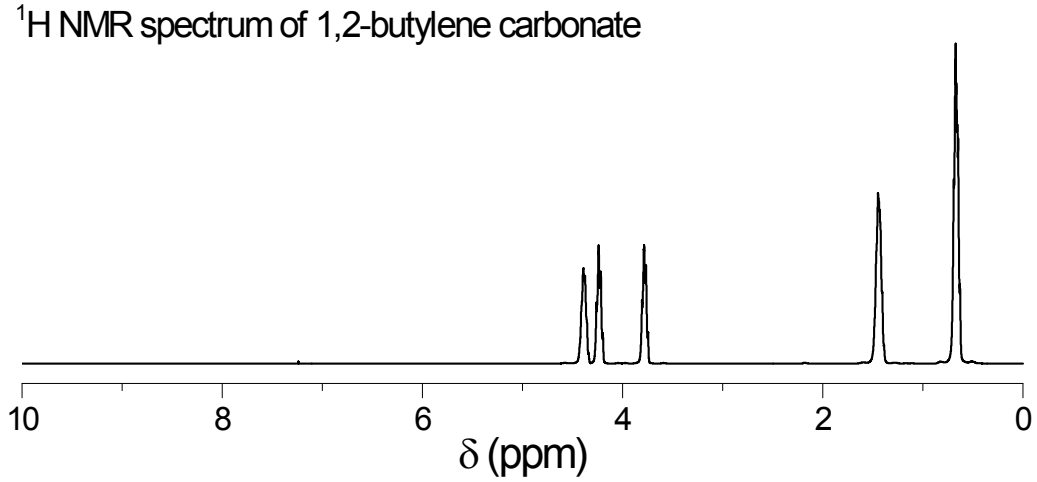
^{13}C NMR (400 MHz, $CDCl_3$) δ= 18.83 (CH_3), 70.41 (CH_2), 73.80 (CH), 155.21 (C=O) ppm

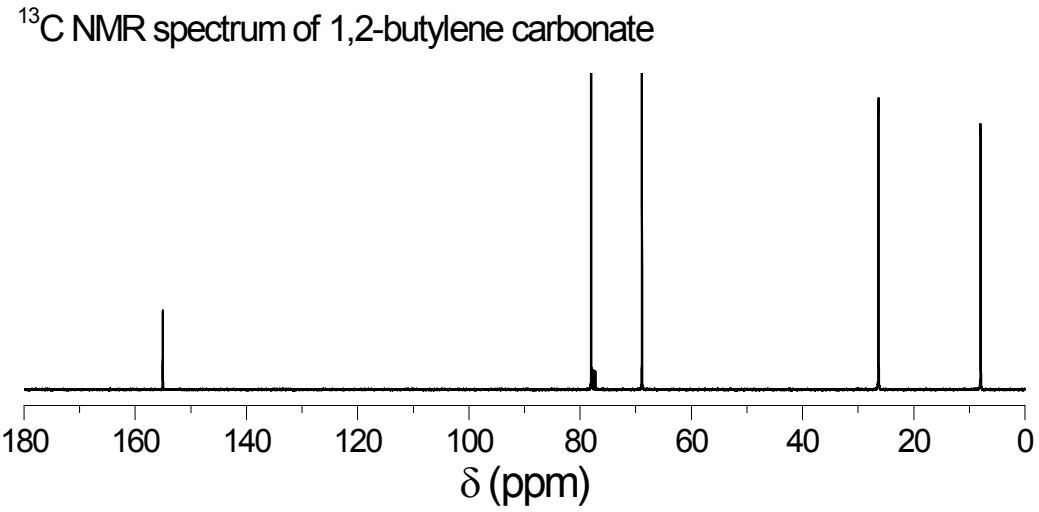


1,2-butylene carbonate (or 4-Ethyl-1,3-dioxolan-2-one)

^{1}H NMR (400 MHz, $CDCl_3$): δ = 0.68 (t, 3H, CH_3), 1.45 (m, 2H, CH_2), 3.80 (dd, 1H, CH_2), 4.25 (dd, 1H, CH_2), 4.40 (p, 1H, CH), ppm.

^{13}C NMR (400 MHz, $CDCl_3$) δ= 7.98 (CH_3), 26.35 (CH_2), 68.90 (CH_2), 78.02 (CH), 155.06 (C=O) ppm.

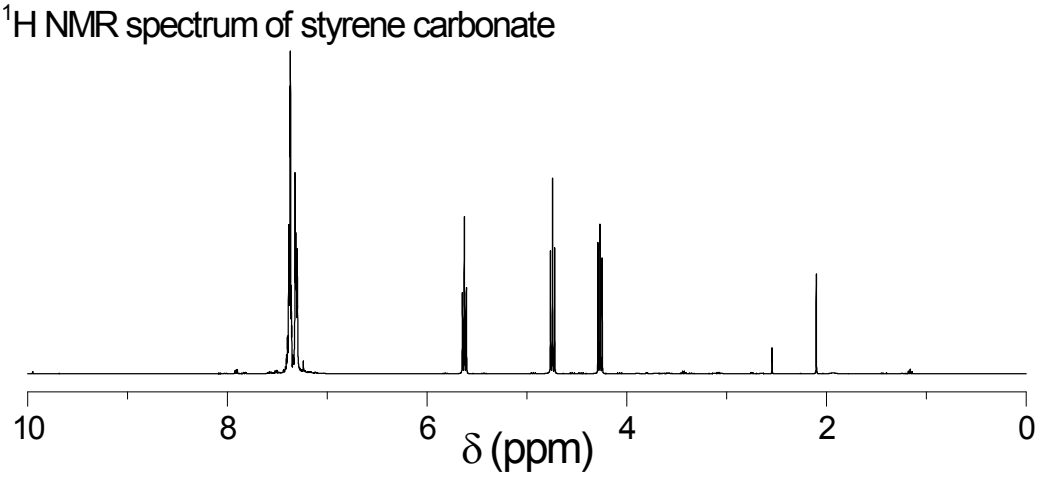


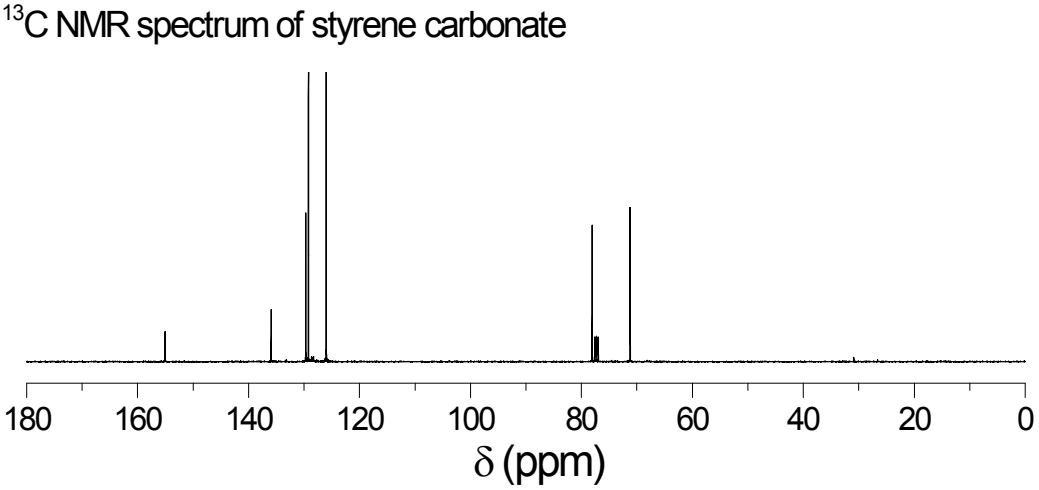


Styrene carbonate (or 4-Phenyl-1,3-dioxolan-2-one)

^{1}H NMR (400 MHz, $CDCl_3$) = 4.30 (dd, 1H), 4.77 (m, 1H), 5.65 (t, 1H), 7.33–7.40 (m, 5H) ppm.

^{13}C NMR (400 MHz, $CDCl_3$) = 71.20 (CH_2), 77.95 (CH), 125.86 (CH), 129.15 (2xCH), 129.66 (2xCH), 135.80 (C), 154.86 (C=O) ppm.

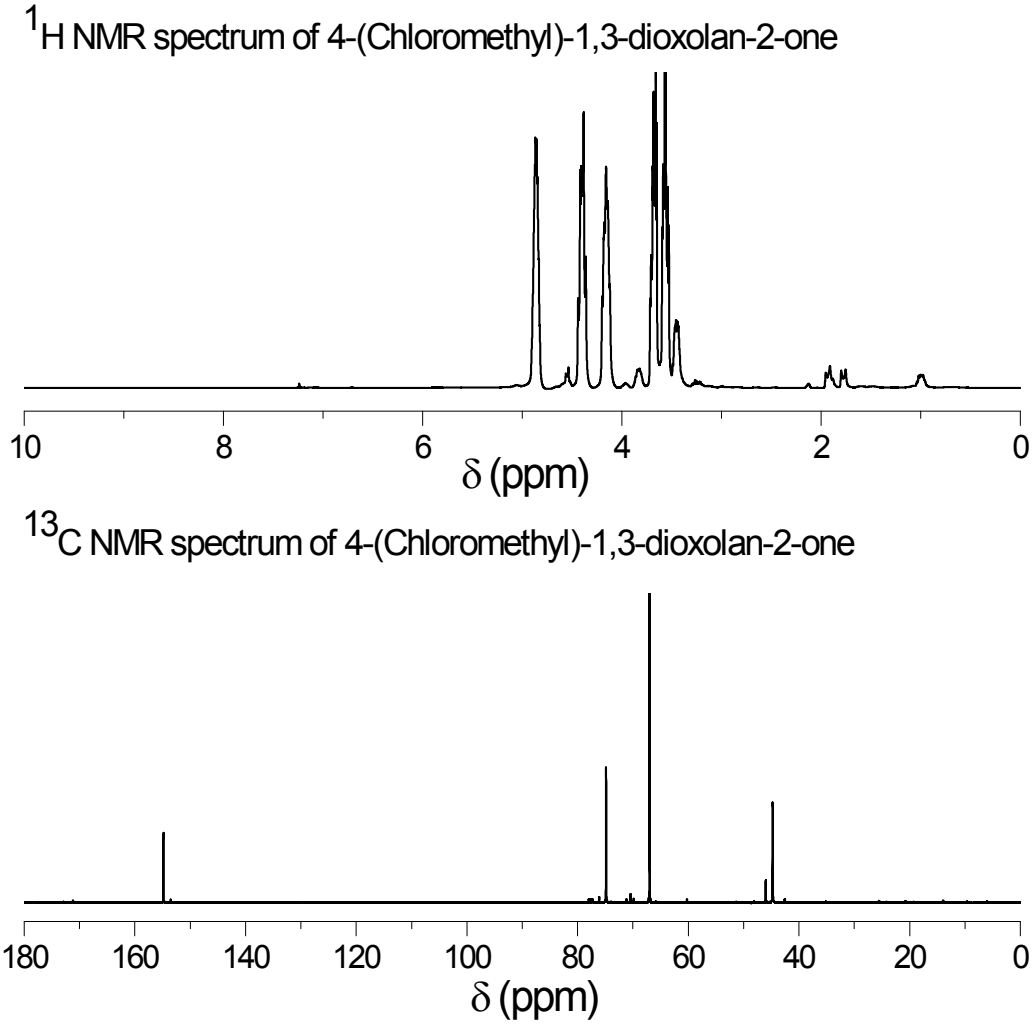




4-(Chloromethyl)-1,3-dioxolan-2-one

^{1}H NMR (400 MHz, $CDCl_3$) = 3.54–3.68 (m, 2H), 4.16 (dd, 1H), 4.40 (dd, 1H), 4.87 (m, 1H) ppm.

^{13}C NMR (400 MHz, $CDCl_3$) = 44.77 (CH_2), 67.10 (CH_2), 74.70 (CH), 155.20 (C=O) ppm.



hexahydrobenzo[*d*][1,3]dioxol-2-one

1H NMR (400 MHz, $CDCl_3$) = 4.71–4.66 (m, 2H), 1.94–1.82 (m, 4H), 1.66–1.55 (m, 2H), 1.46–1.37 (m, 2H).

13C NMR (101 MHz, CDCl3) = 155.5 (C=O), 75.5 (CH), 26.4 (CH_2), 24.1 (CH_2)