Supplementary Material

Highly Porous Boron Nitride as a Metal-Free Heterogeneous Catalyst for Cycloaddition of CO_2 to Epoxides

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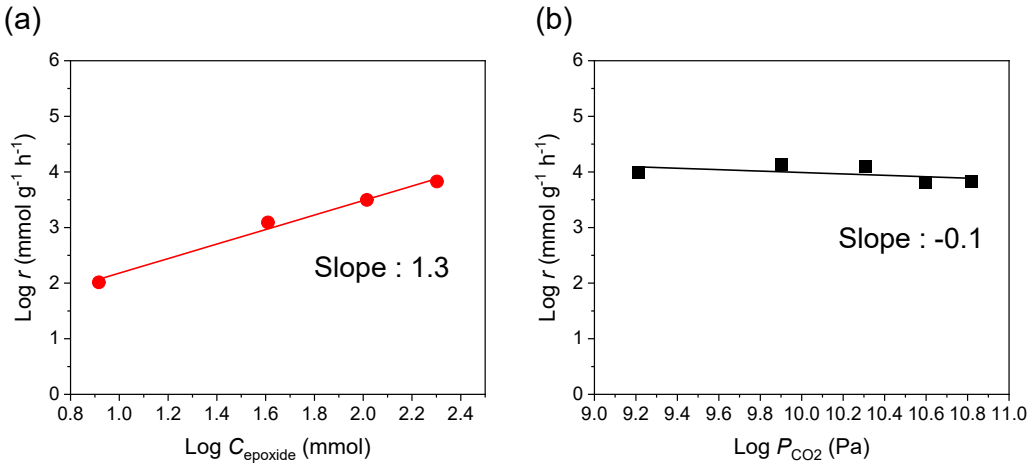

Figure S1. Dependence of formation rate of chloroethylene carbonate on (a) concentration of epichlorohydrin and CO_2 pressure. Reaction conditions: (a) epichlorohydrin (2.5-10 mmol), TBAB (39 μmol), CO_2 (0.5 MPa), catalyst (50 mg), toluene (1 mL), 403 K, 1 h. (b) epichlorohydrin (10 mmol), TBAB (39 μmol), CO_2 (0.1-0.5 MPa), catalyst (50 mg), toluene (1 mL), 403 K, 1 h.

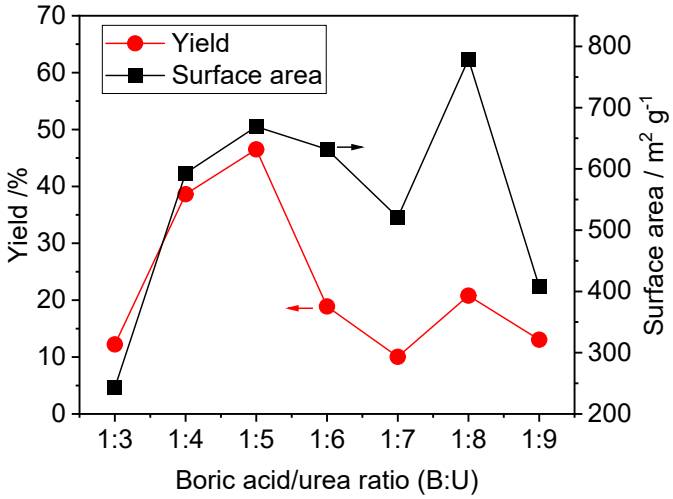

Figure S2. Correlation of styrene carbonate yield for cycloaddition of CO_2 to styrene oxide and surface areas of boron nitride synthesized from boric acid and urea at various molar ratios, B: U = 1:y (y = 3~9). Reaction conditions: styrene oxide (20 mmol), TBAB (16 μmol), CO_2 (0.5 MPa), catalyst (100 mg), 403 K, 18 h.

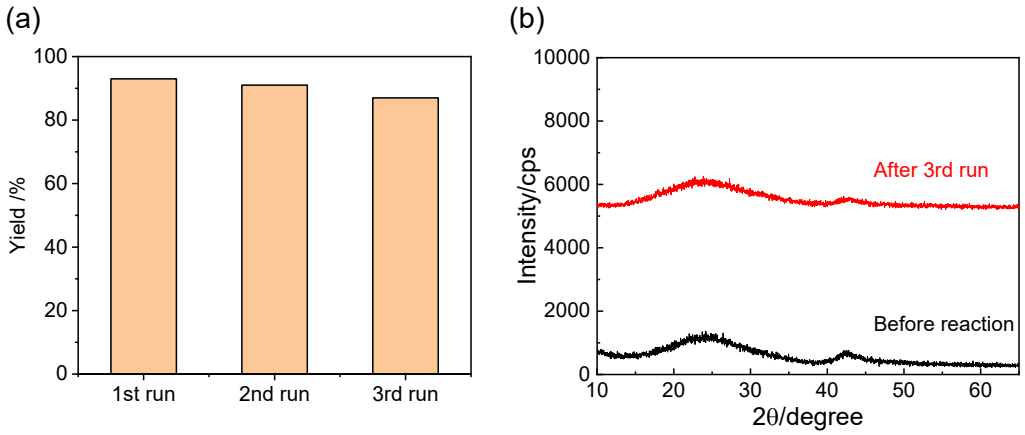

Figure S3. Reusability of the boron nitride catalyst (B:M:U = 1:1:5). (a) Product yield (b) XRD patterns before and after reaction. Reaction conditions: epichlorohydrin (10 mmol), TBAB (39 μmol), CO_2 (0.5 MPa), catalyst (50 mg), toluene (1 mL), 403 K, 18 h.