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

SUPPORTING INFORMATION

Carbonates as reactants for the production of fine chemicals: the synthesis of 2-phenoxyethanol

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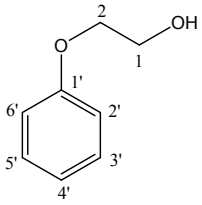
NMR spectra of products

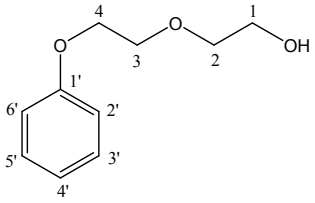
Chemical shifts (δ) for ^{1}H and ^{13}C are given in ppm relative to residual signal of the solvent (7.26 ppm). The following abbreviations are used to indicate the multiplicity s, singlet; d, doublet; t, triplet; q, quartet; m, multiplet; bs, broad signal.

2-phenoxy-1-ethanol (PE)



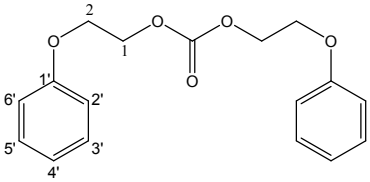
^{1}H NMR (300 MHz, $CDCl_3$) δ (ppm): 7.34-6.89 (5H, *m*, Ar), 4.09 (2H, *m*, C 2), 3.96 (2H *m*, C 1), 2.04 (1H, *bs*, OH).
^{13}C NMR (75 MHz, $CDCl_3$) δ (ppm): 158.7 (C 1'), 129.7 (C 3-5'), 121.3 (C 4'), 114.7 (C 2'-6'), 69.2 (C 2), 61.7 (C 1).

2-(2-phenoxyethoxy)ethanol (DPE)



^{1}H NMR (300 MHz, $CDCl_3$) δ (ppm): 7.34-6.89 (5H, *m*, Ar), 4.09 (2H, *m*, C 4), 3.96 (2H, *m*, C 3), 3.69 (2H, *m*, C 2), 3.59 (2H, *m*, C 1), 2.04 (1H, b*s*, OH).

bis(2-phenoxyethyl)carbonate (BPEC)



^{1}H NMR (300 MHz, $CDCl_3$) δ (ppm): 7.32-6.89 (10H, *m*, Ar), 4.52 (4H, *m*, C 2), 4.21 (4H, *m*, C 1).
^{13}C NMR (75 MHz, $CDCl_3$) δ (ppm): 158.5 (C 1'), 155.2 (CO_3), 129.6 (C 3'-5'), 121.4 (C 4'), 114.7 (C 2'-6'), 66.5 (C 2), 65.6 (C 1).

The assignment of the structure to BPEC was based on the fact that (i) its ^{1}H NMR spectrum does not show a signal attributable to a hydroxyl moiety, (ii) the two CH_2 moieties are strongly deshielded, (iii) its ^{13}C NMR shows a quaternary C atom at 155.2 ppm, and (iv) the ESI spectrum shows a peak at *m/z*=302. All this strongly suggests the structure of a symmetrical carbonate such as BPEC.

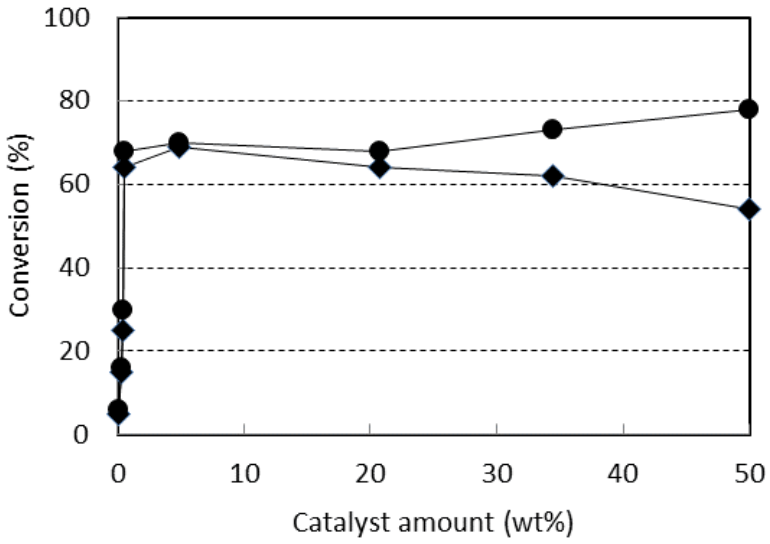


Figure S1 Effect of the catalyst amount (weight in respect to the phenol) on phenol conversion (◴) and EC conversion (ഌ). Reaction conditions: T 210°C, reaction time 7 h, feed ratio phenol/EC 1/1; catalyst Na-mordenite.

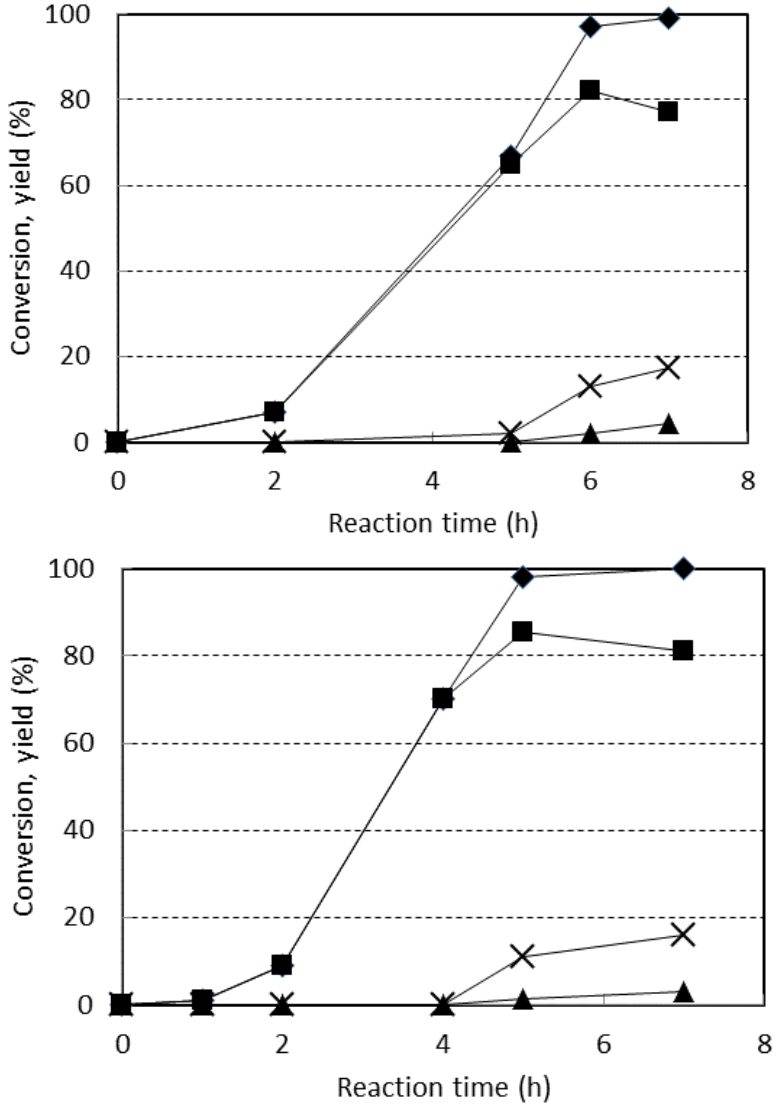


Figure S2 Effect of reaction time on phenol conversion (◴), and yield to PE (O), DPE+TPE (□), and BPEC (ഌ). Reaction conditions: catalyst amount 0.5 wt% (top), and 5 wt% (bottom); T 210°C, phenol/EC feed ratio 1/2, catalyst treated Na-mordenite.