Supporting Information

Effects of Water and Alcohols on the Polymerization of Furan during its Acid-Catalyzed Conversion into Benzofuran

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Number of pages: 10.
Number of Figures: 9.
Figure S1 GC-MS spectrum for acid-catalyzed conversion of furan in water. Reaction conditions: residence time: 20 min; furan: 3 g, water: 100 ml; catalyst: A70, 3 g; stirring rate: 350 rpm; pressure: autogenous vapor pressure.
Figure S2 GC-MS spectrum for acid-catalyzed conversion of furan in methanol. Reaction conditions: residence time: 20 min; furan: 3 g, methanol: 100 ml; catalyst: A70, 3 g; stirring rate: 350 rpm; pressure: autogenous vapor pressure.
Figure S3 Mass spectrum of 1,1,4,4-tetramethoxybutane.
**Figure S4** Proposed reaction pathways for the dissociation of 1,1,4,4-tetramethoxybutane in the mass spectrometer.
**Figure S5** Constant energy (−2800 cm⁻¹) synchronous spectra for determination of the soluble polymer formed in acid-catalyzed conversion of furan in methanol. Reaction conditions: T = 150°C; furan: 3 g, methanol: 100 ml; catalyst: A70, 3 g; stirring rate: 350 rpm; pressure: autogenous vapor pressure.
**Figure S6** Constant energy (−2800 cm⁻¹) synchronous spectra for determination of the soluble polymer formed in acid-catalyzed conversion of furan in methanol. Reaction conditions: furan: 3 g, methanol: 100 ml; stirring rate: 350 rpm; pressure: autogenous vapor pressure.
Figure S7 Constant energy ($-2800$ cm$^{-1}$) synchronous spectra for determination of the soluble polymer formed in acid-catalyzed conversion of furan in ethanol. Reaction conditions: $T = 170^\circ$C; furan: 3 g, ethanol: 100 ml; catalyst: A70, 3 g; stirring rate: 350 rpm; pressure: autogenous vapor pressure. Residence time of 0 min means the reaction temperature just reached the required temperature in 10 to 14 min.
Figure S8 Mass spectrum for furfuryl methyl sulfide.
Figure S9 GC-MS spectrum for acid-catalyzed conversion of furan in DMSO. Reaction conditions: residence time: 20 min; furan: 3 g, methanol: 100 ml; catalyst: A70, 3 g; stirring rate: 350 rpm; pressure: autogenous vapor pressure.