Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

Conversion of Chitin and N-Acetyl-D-Glucosamine into a N-containing Furan Derivative in Ionic Liquids

Xi Chen,[a] Yi Liu,[b] Francesca M. Kerton,[b,*] and Ning Yan[a,*]

[a] Department of Chemical and Biomolecular Engineering, National University of Singapore, 4 Engineering Drive 4, 117585, Singapore. E-mail: ning.yan@nus.edu.sg

[b] Department of Chemistry, Memorial University of Newfoundland, St. John's, NL, A1B 3X7, Canada. E-mail: fkerton@mun.ca

Content

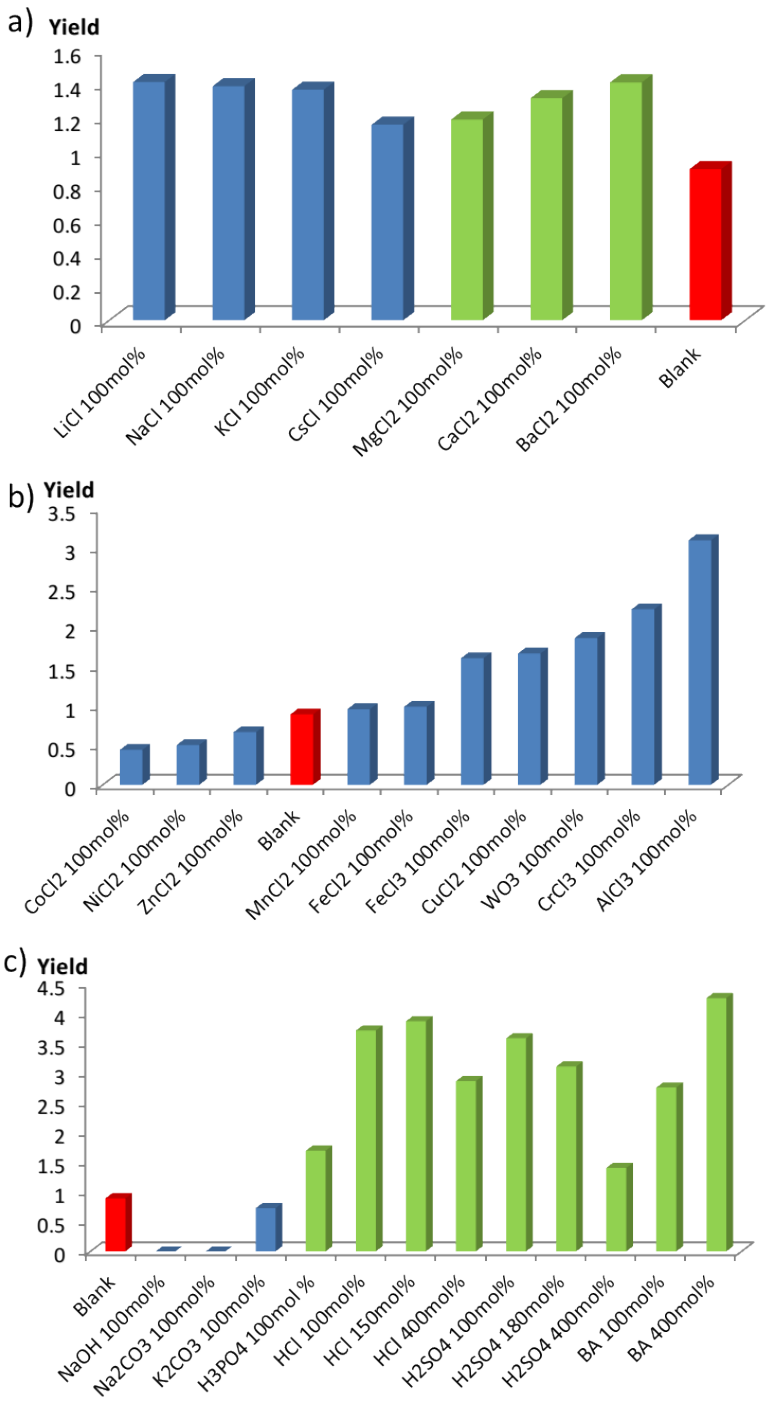

Figure S1 Comparison of yield of 3A5AF by using various additives: a) Group I and group II metal chlorides; b) Other metal salts and oxides; c) Alkalis and acids. Reaction conditions: 180 ˚C, [BMIm]Cl (1 g), chitin (80 mg), single additive (100 mol%), 1 h.

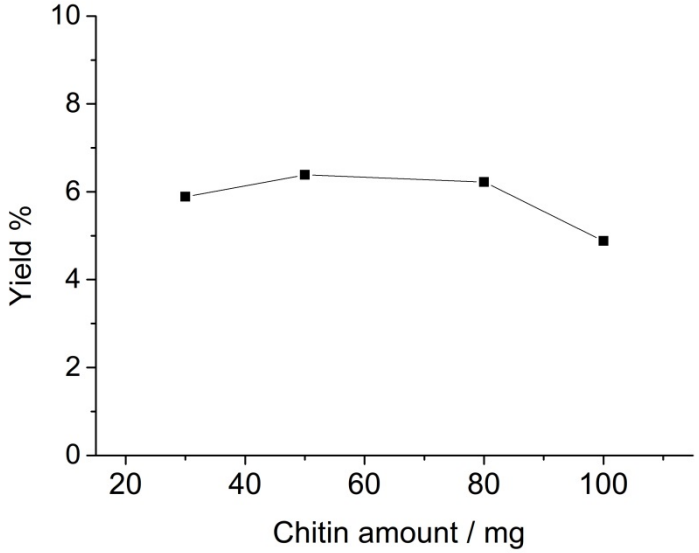

Figure S2 Effect of chitin concentration on yield of 3A5AF. Reaction conditions: 180 ˚C, [BMIm]Cl (1 g), 400 mol% boric acid and 100 mol% HCl, 1 h.

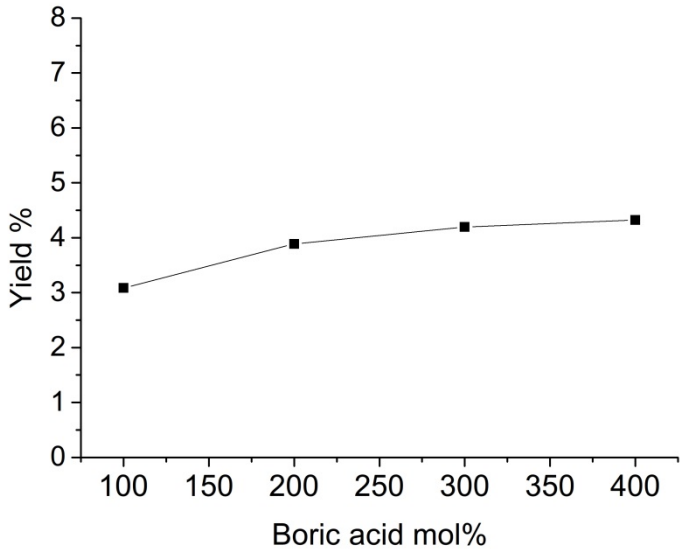

Figure S3 Effect of boric acid amount on yield of 3A5AF. Reaction conditions: 180 ˚C, [BMIm]Cl (1 g) and chitin (80 mg), 1 h.

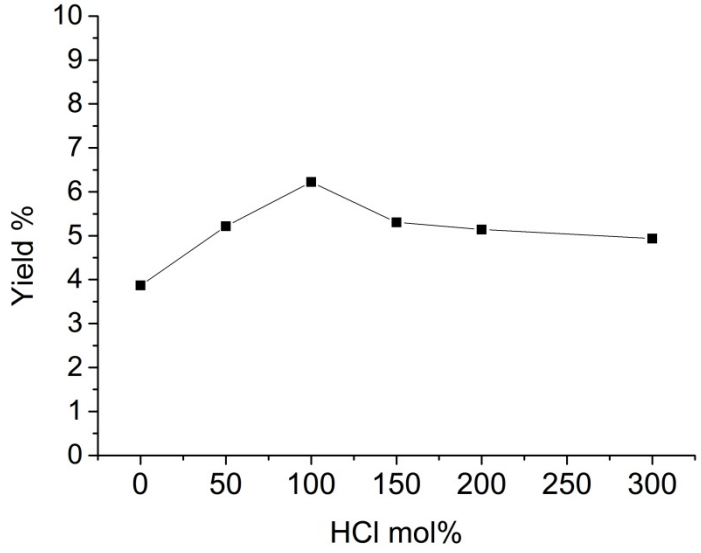

Figure S4 Effect of HCl amount on yield of 3A5AF. Reaction conditions: 180 ˚C, [BMIm]Cl (1 g), chitin (80 mg) and 400 mol% boric acid, 1 h.

Table S1 Recycling results of [BMIm]Cl for chitin dehydration

Entry	1st run	2nd run	3rd run
Yield / %	3.3	3.6	3.4

Reaction conditions: chitin (80 mg), IL (1 g), boric acid (400 mol%), 180 ˚C, 40 min.

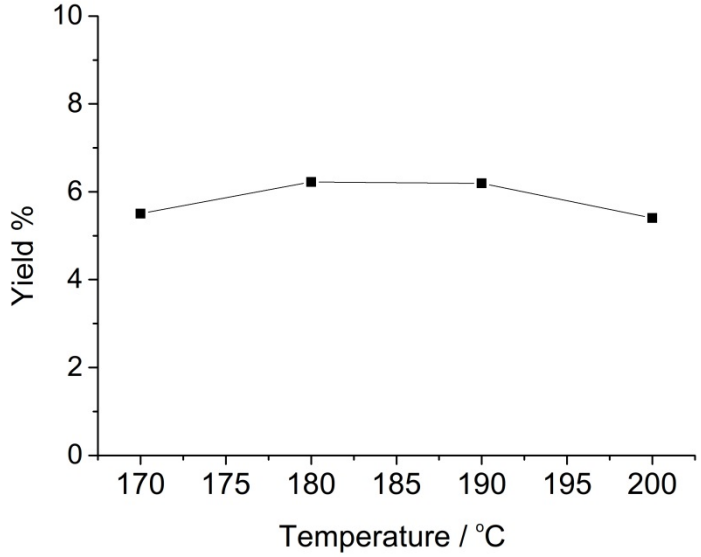

Figure S5 Effect of temperature on yield of 3A5AF. Reaction conditions: [BMIm]Cl (1 g), chitin (80 mg), 400 mol% boric acid and 100 mol% HCl, 1 h.

Table S2 EA analysis results of pure chitin and recovered solid

Sample	C wt%	H wt%	N wt%
Pure chitin	47.24	6.40	6.89
Recovered chitin	46.56	5.40	6.35