

## Supporting information

### Efficient Esterification of *n*-Butanol with Acetic Acid Catalyzed By Brönsted Acidic Ionic Liquids: Influence of Acidity

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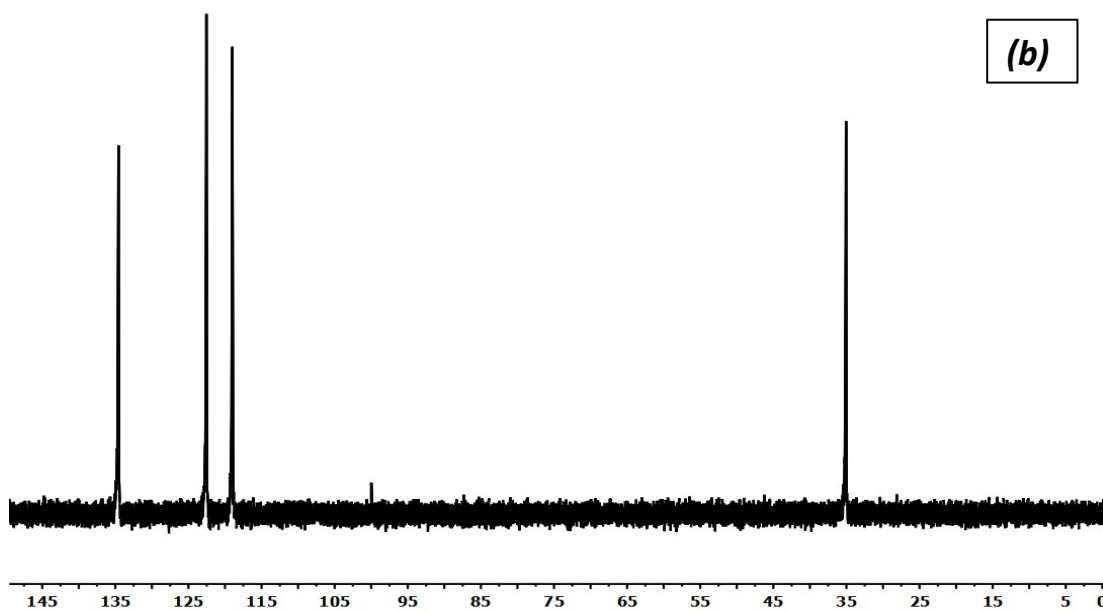
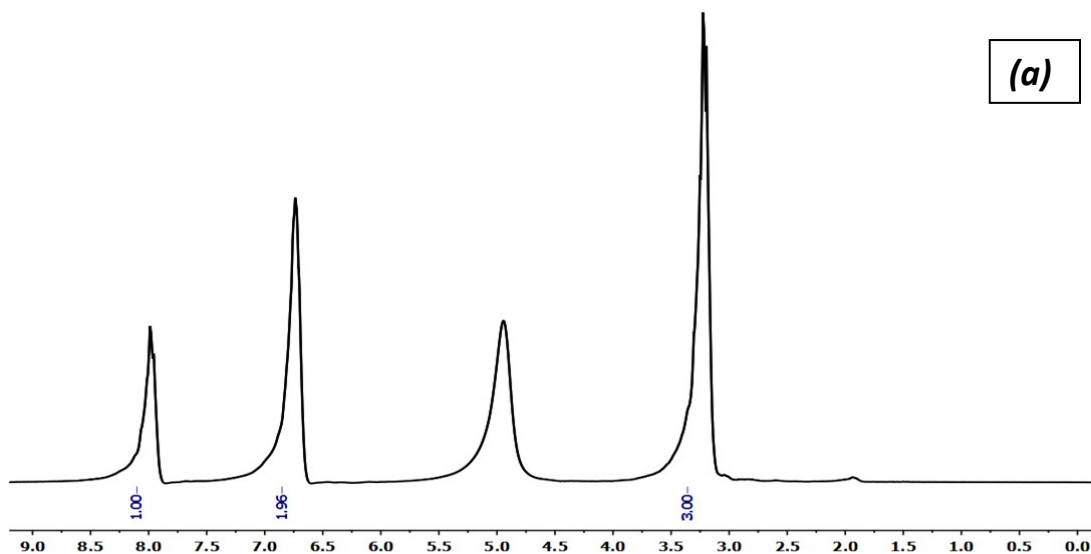
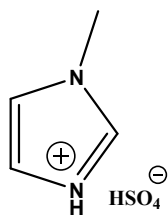
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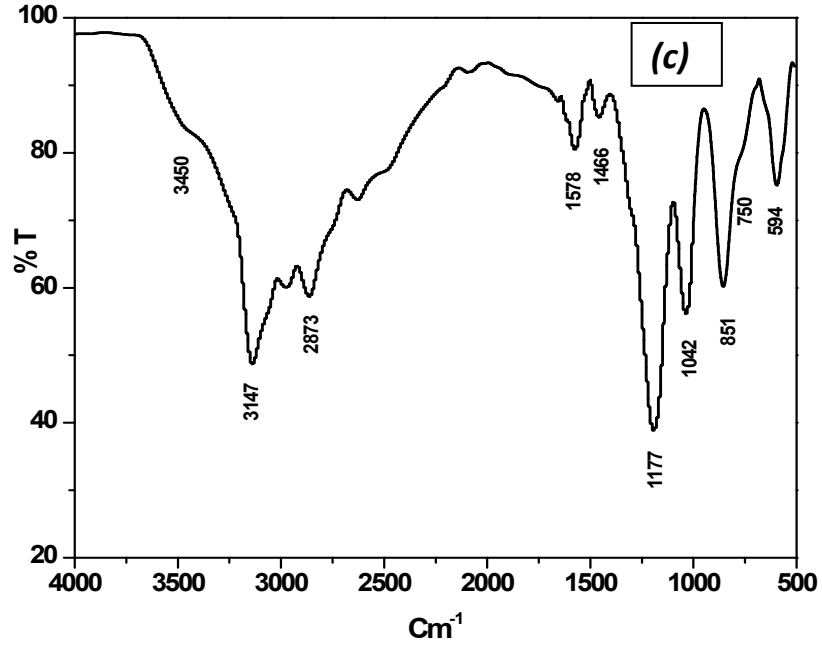
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<sup>c</sup>School of Chemical Engineering, Fuzhou University, Fuzhou 350116, Fujian Province, PR China.

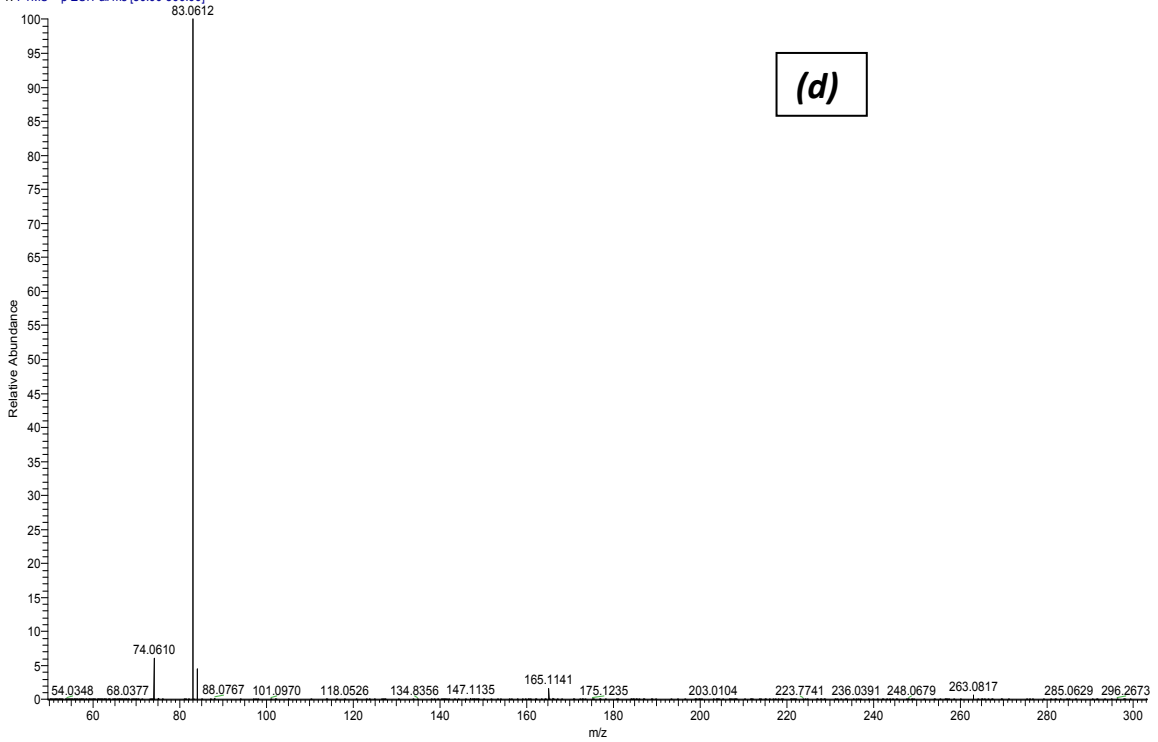
†All authors are equally contributed to this work.

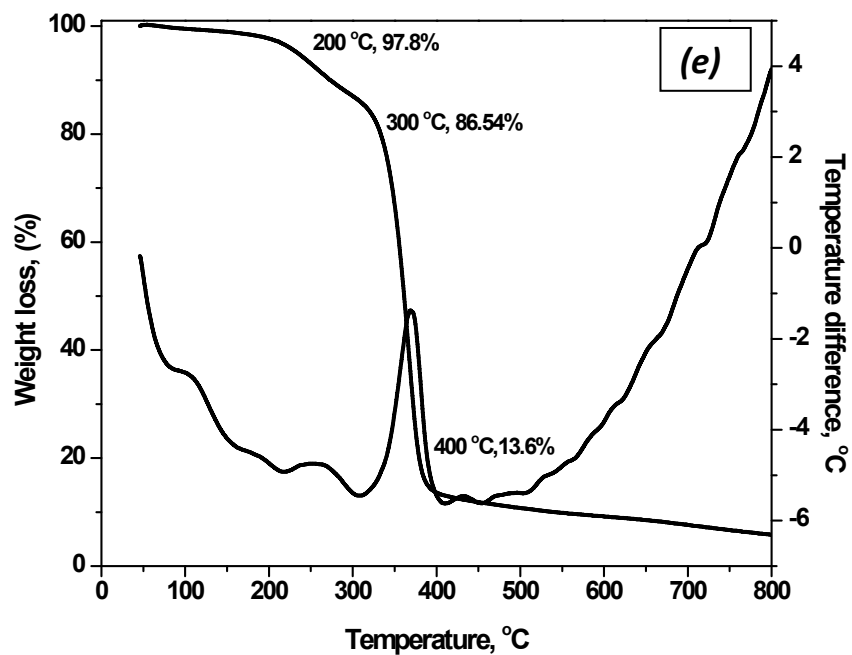
IL-1 [HMIM]HSO<sub>4</sub>:





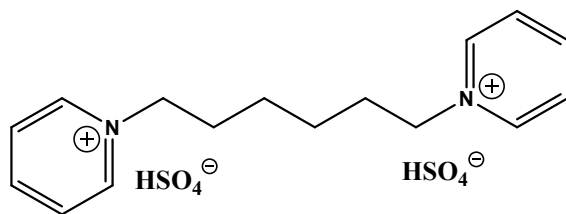
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T: FTMS + p ESI Full ms [50.00-300.00]



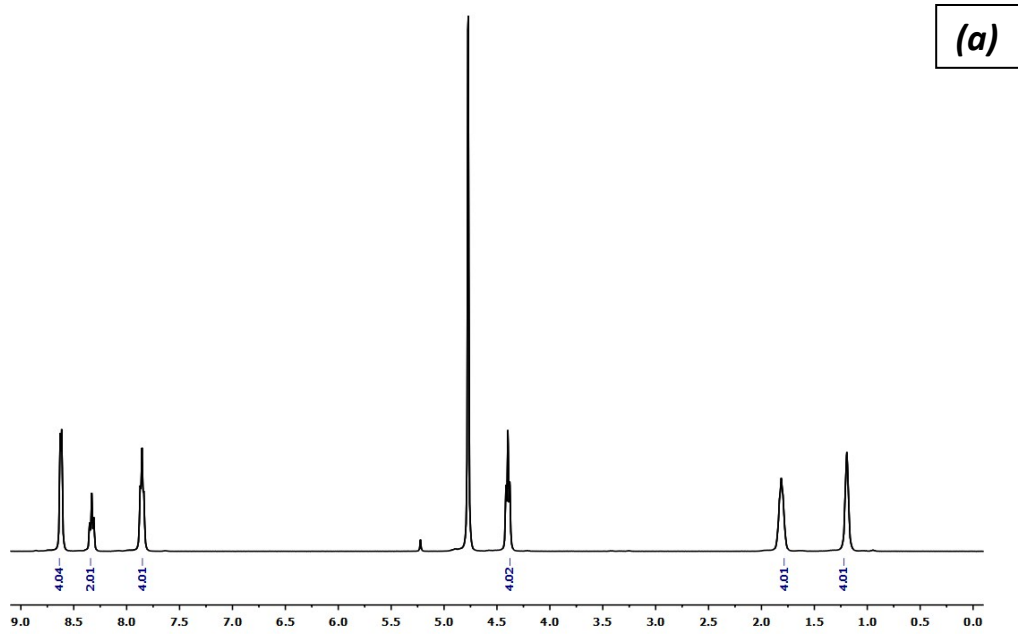


**Fig. S1** (a)  $^1\text{H-NMR}$ , (b)  $^{13}\text{C-NMR}$ , (c) FT-IR, (d) Mass spectra and (e) TG-DTA of synthesized IL-1 [HMIM]HSO<sub>4</sub>.

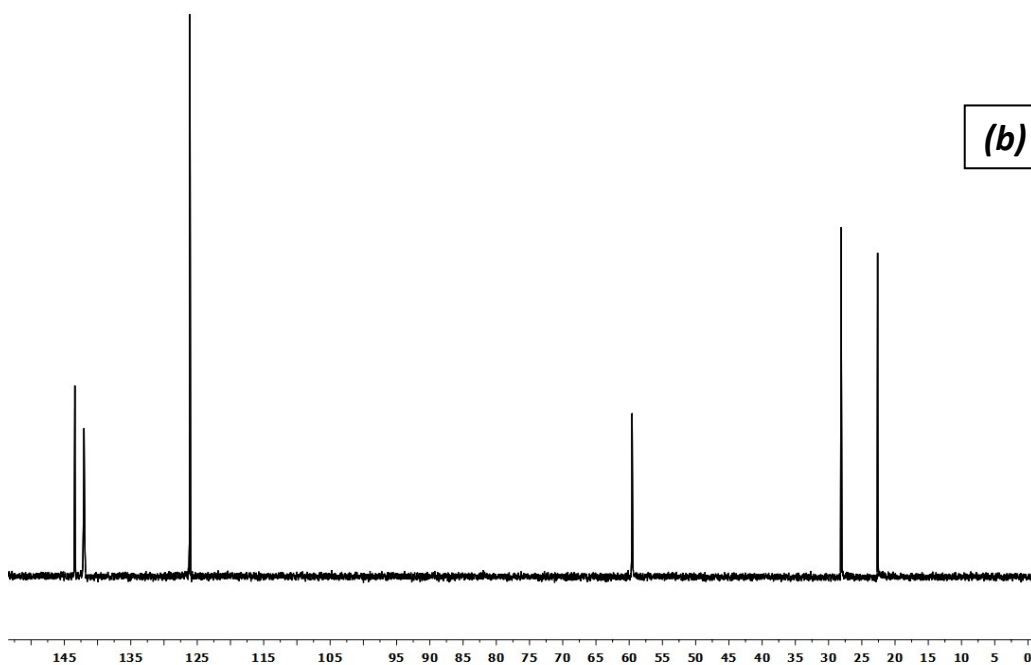
IL-2 [HbPy]HSO<sub>4</sub>:

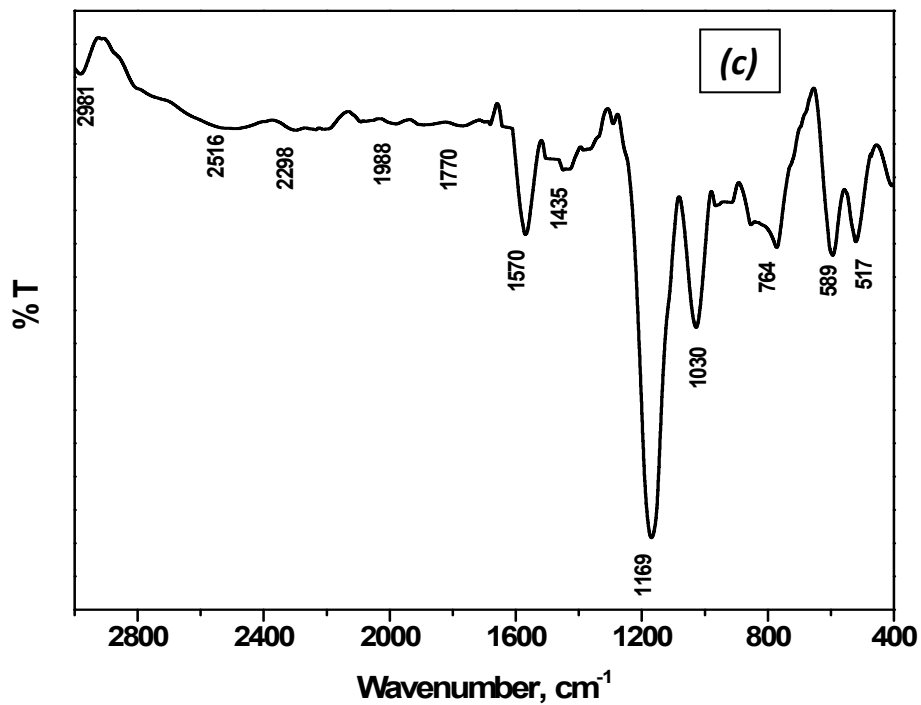


ROHIT-20B

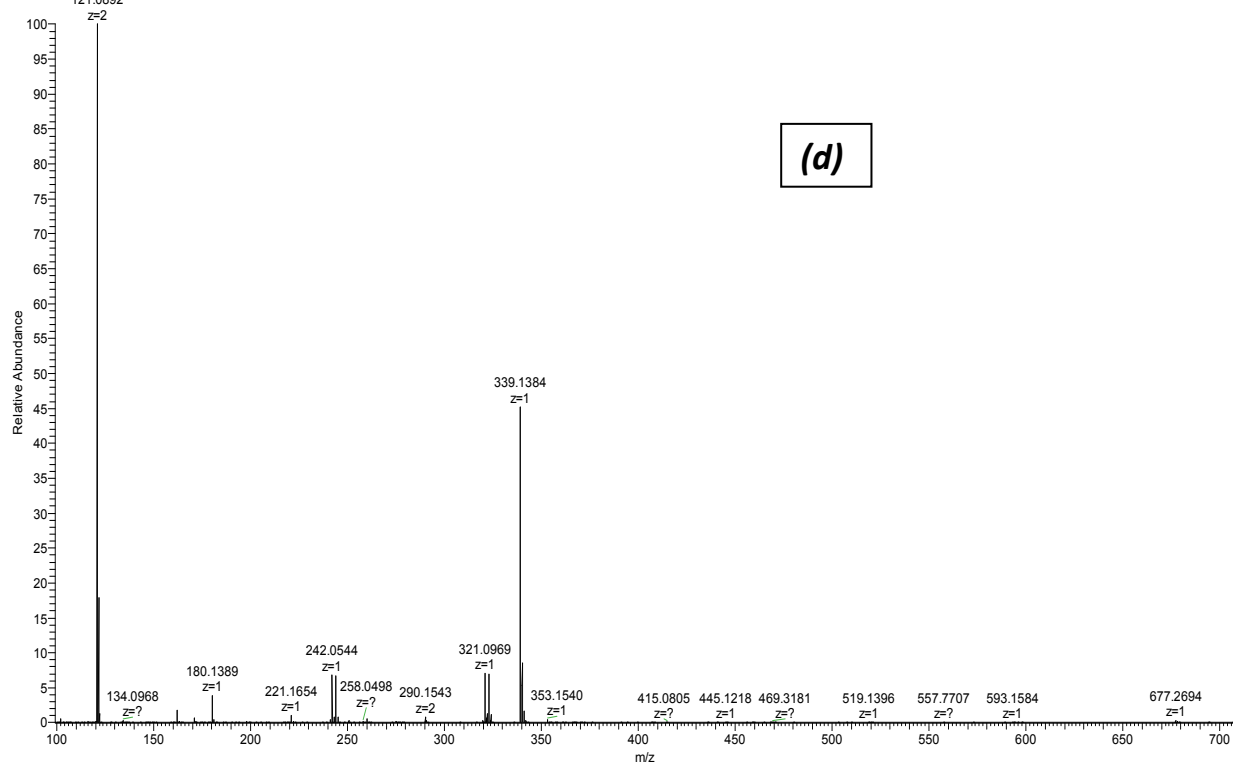


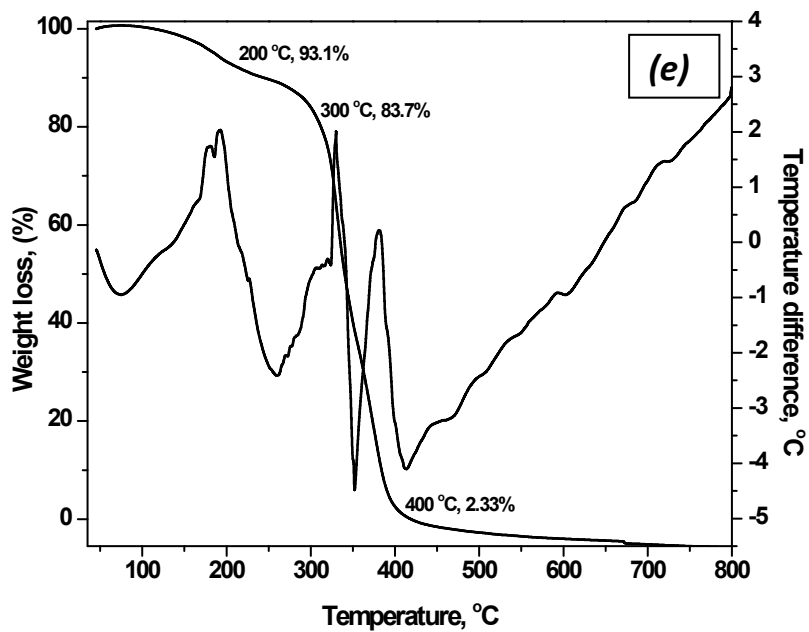
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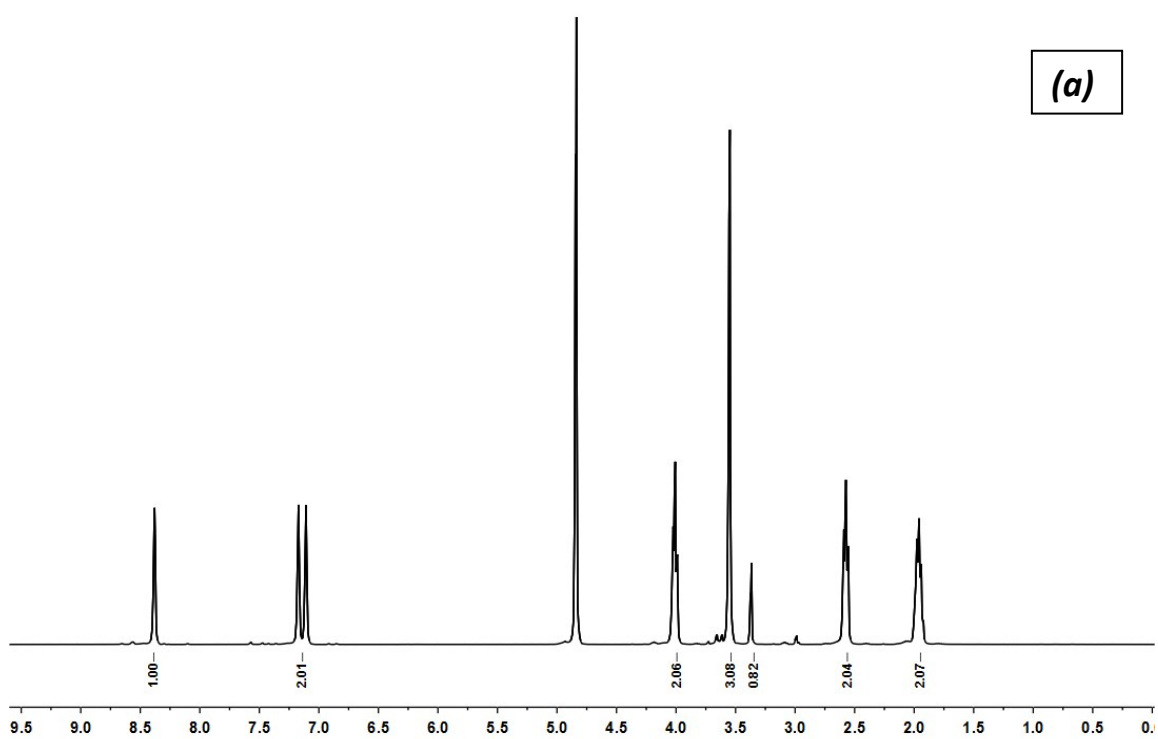
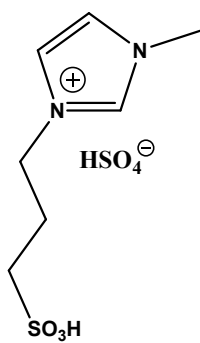
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 121.0892



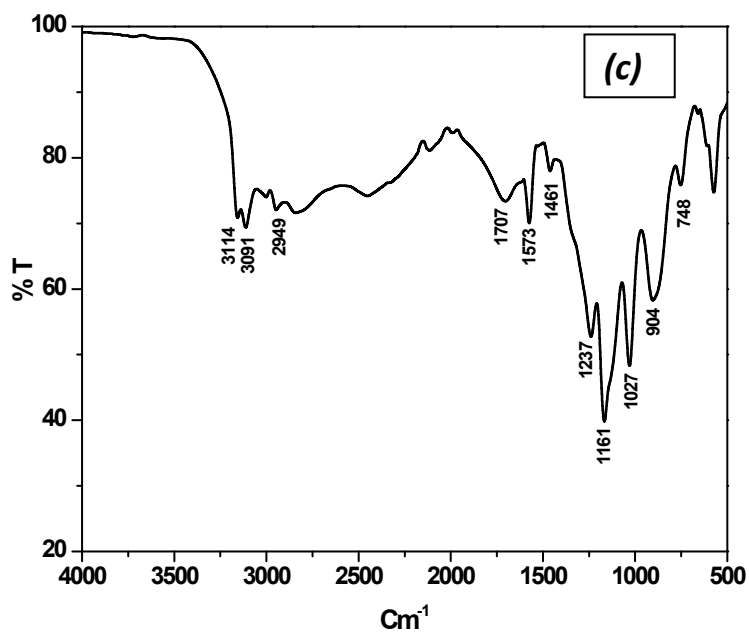
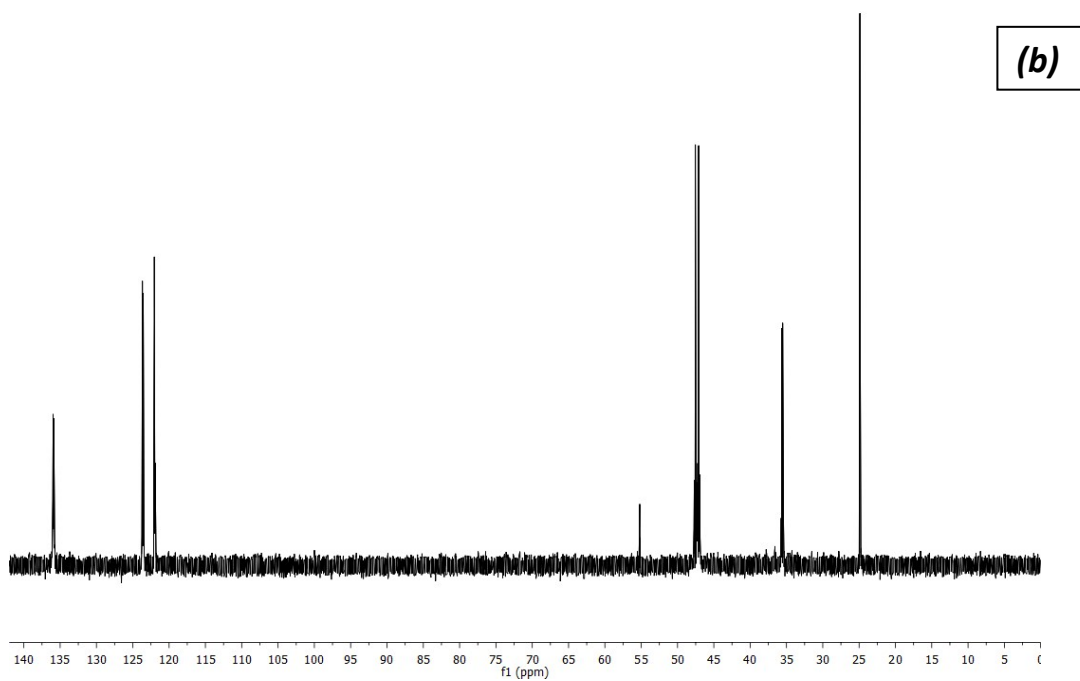


**Fig. S2** (a)  $^1\text{H}$ -NMR, (b)  $^{13}\text{C}$ -NMR, (c) FT-IR, (d) Mass spectra and (e) TG-DTA of synthesized IL-2  $[\text{HbPy}]\text{HSO}_4$ .

IL-3 [MIM-PS]HSO<sub>4</sub>:







rohlt-6BR\_150410094515 #28-54 RT: 0.14-0.28 AV: 27 SB: 6 0.01-0.04 NL: 2.26E9  
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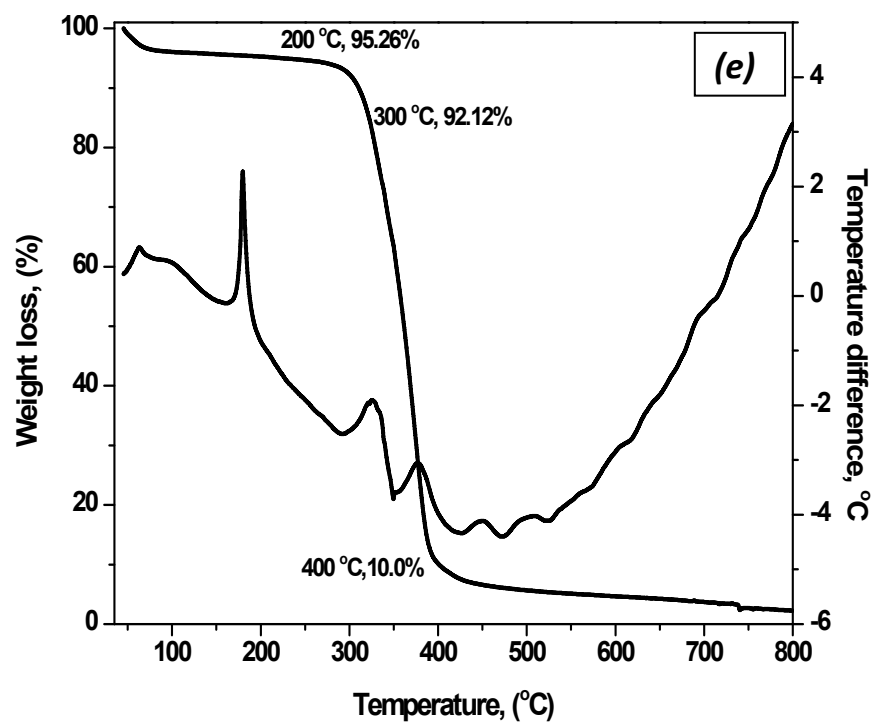
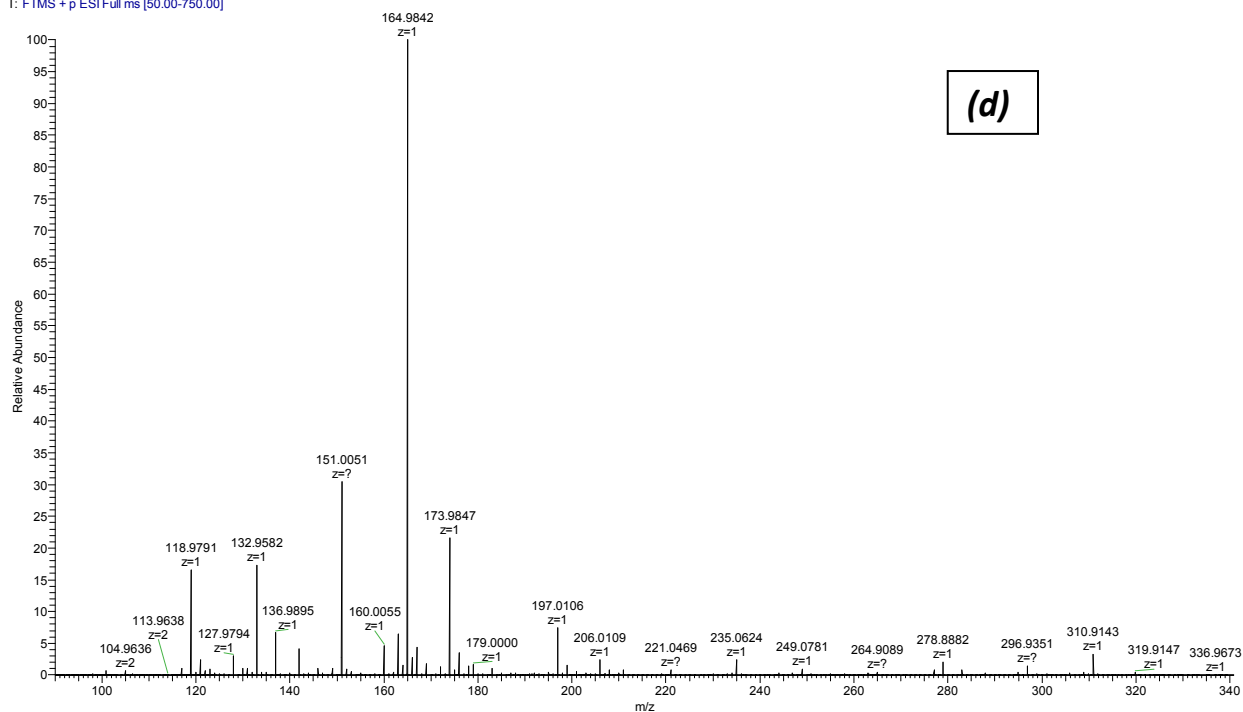
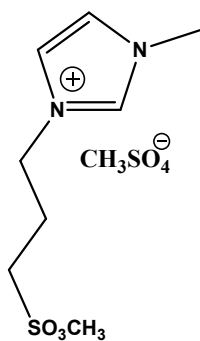


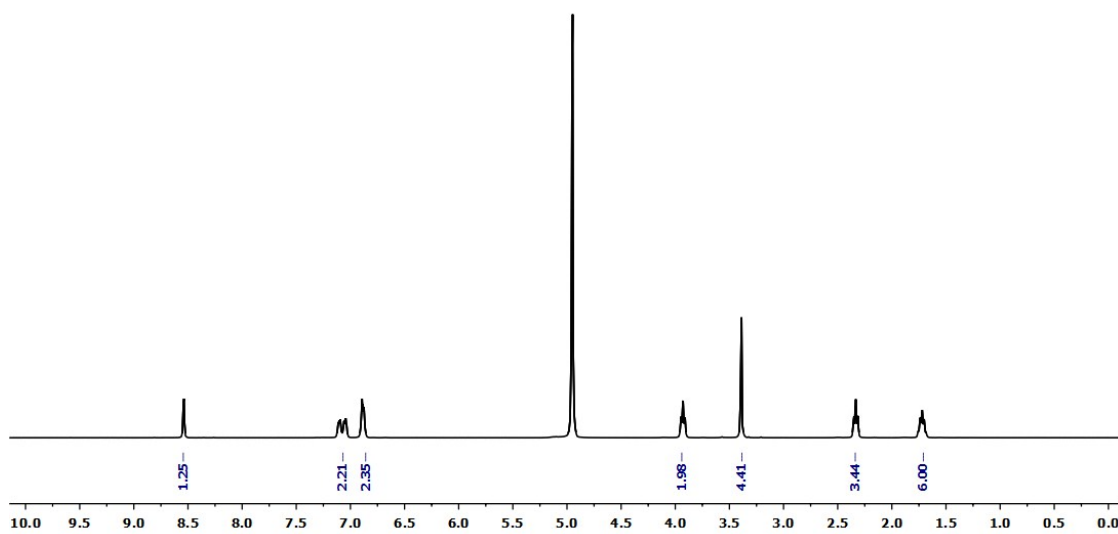
Fig. S3 (a)  $^1\text{H-NMR}$ , (b)  $^{13}\text{C-NMR}$ , (c) FT-IR, (d) Mass spectra and (e) TG-DTA of synthesized IL-3 [MIM-PS]HSO<sub>4</sub>.

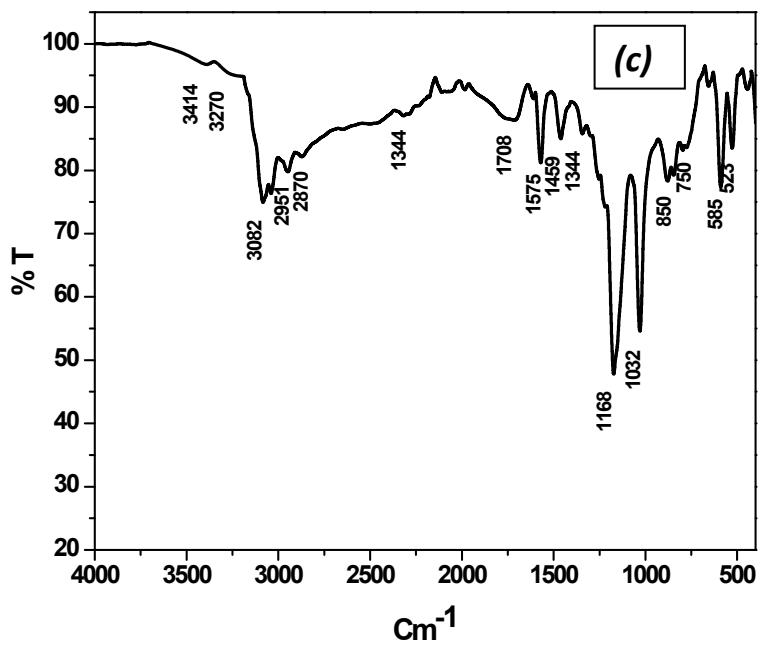
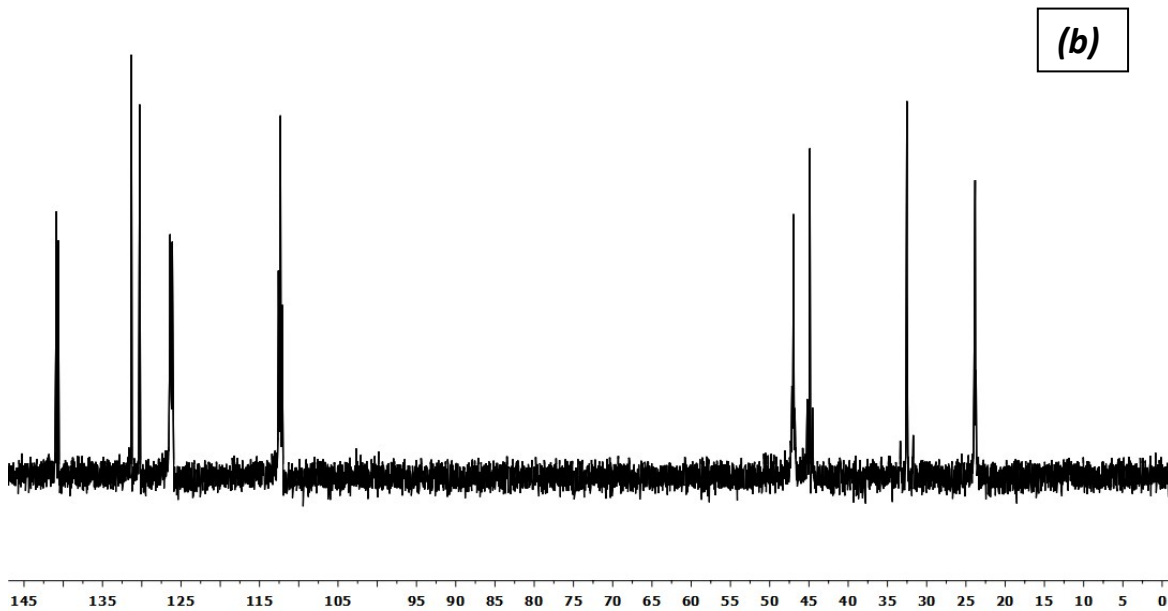
IL-4 [MBIM-PS] $\text{CH}_3\text{SO}_4^-$ :



6C

(a)





6CR\_150616094630 #26-36 RT: 0.06-0.08 AV: 11 NL: 8.13E8  
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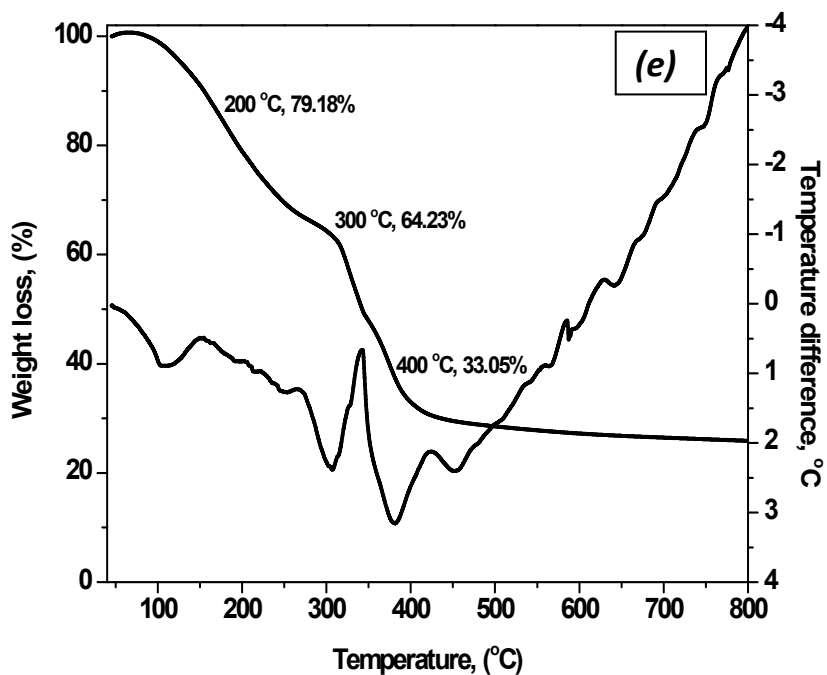
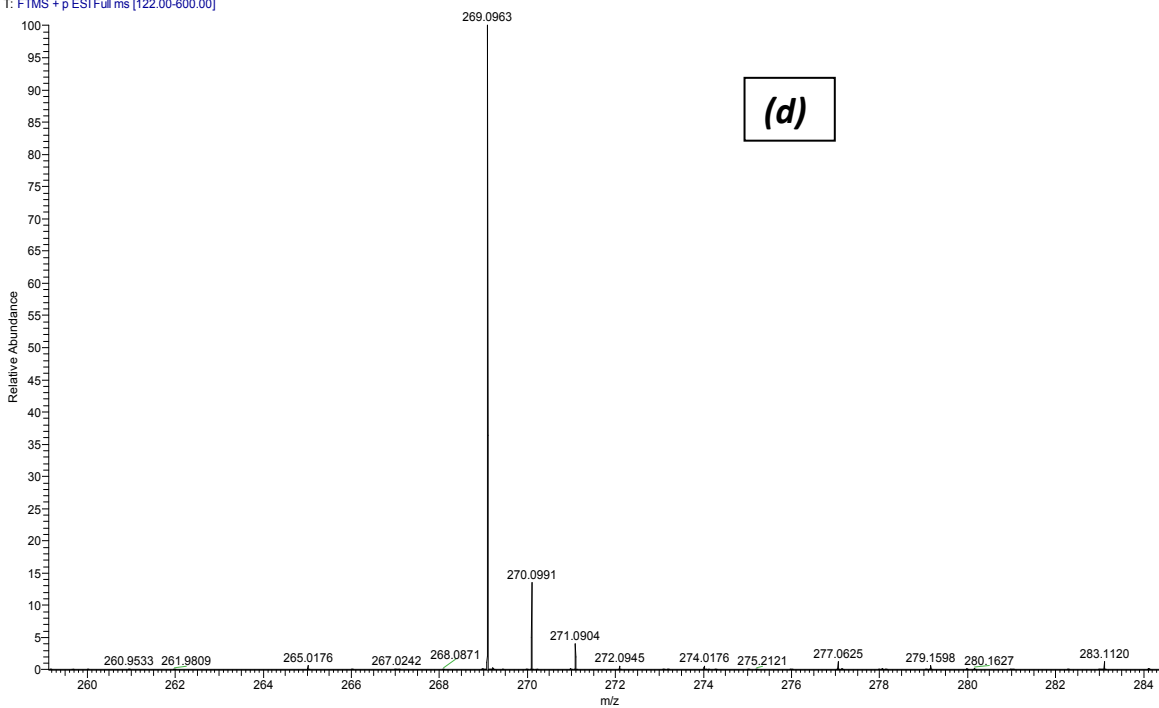
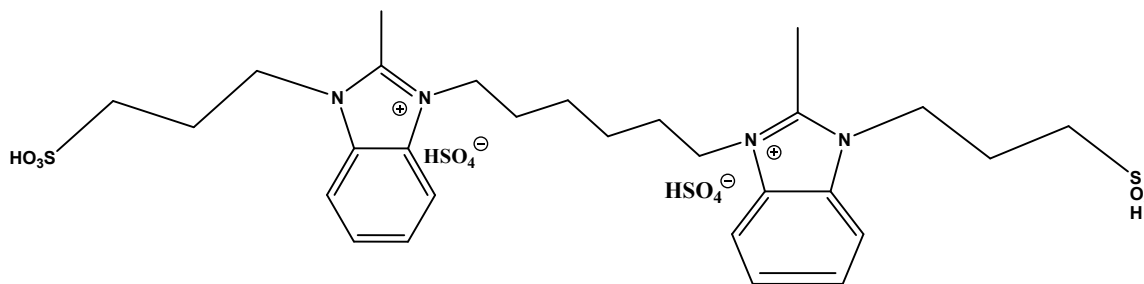
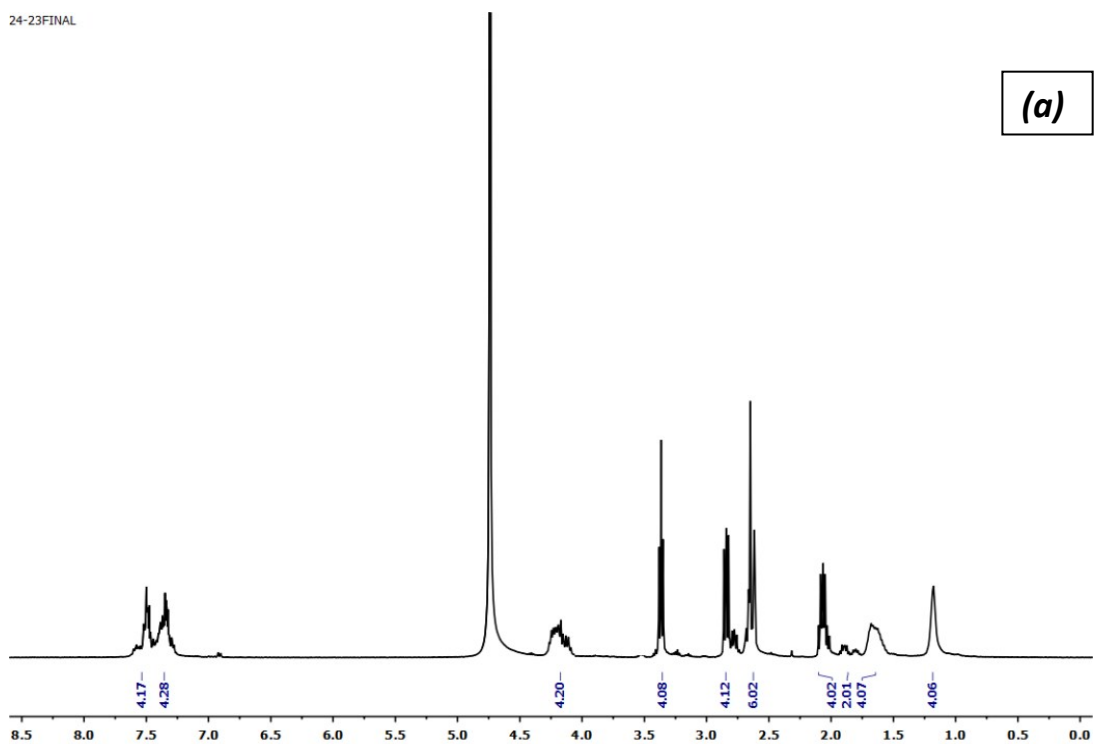


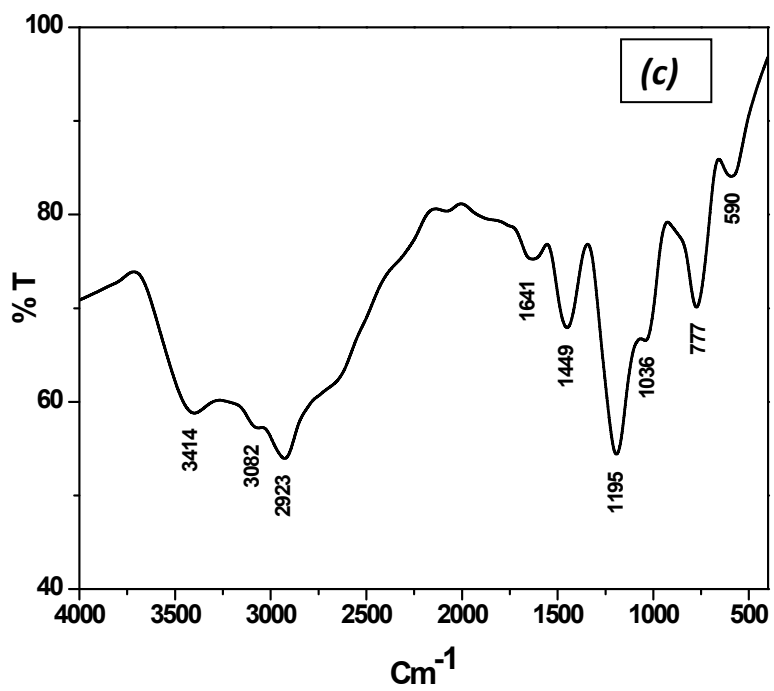
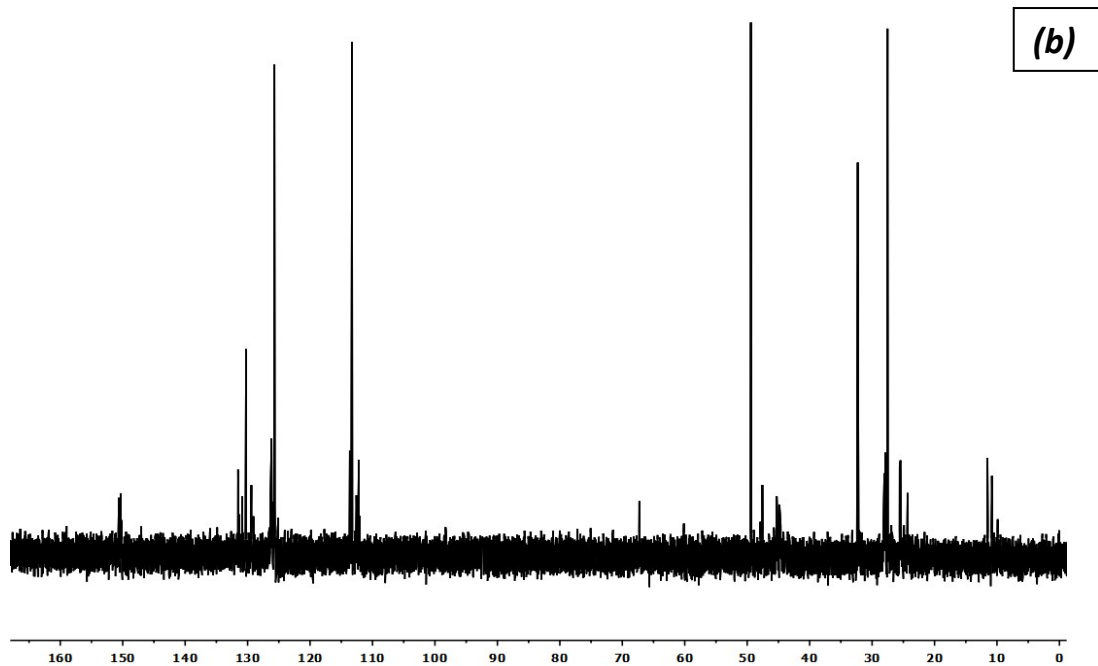
Fig. S4 (a)  $^1\text{H-NMR}$ , (b)  $^{13}\text{C-NMR}$ , (c) FT-IR, (d) Mass spectra and (e) TG-DTA of synthesized IL-4 [MBIM-PS] $\text{CH}_3\text{SO}_4$ .

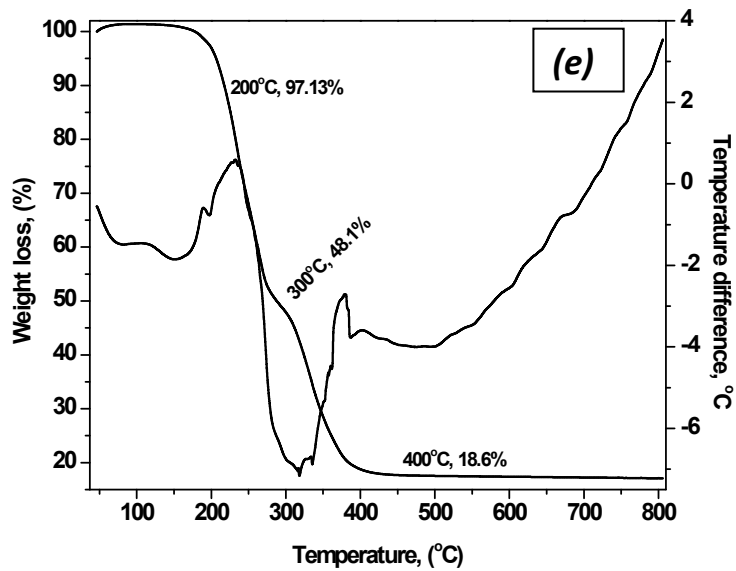
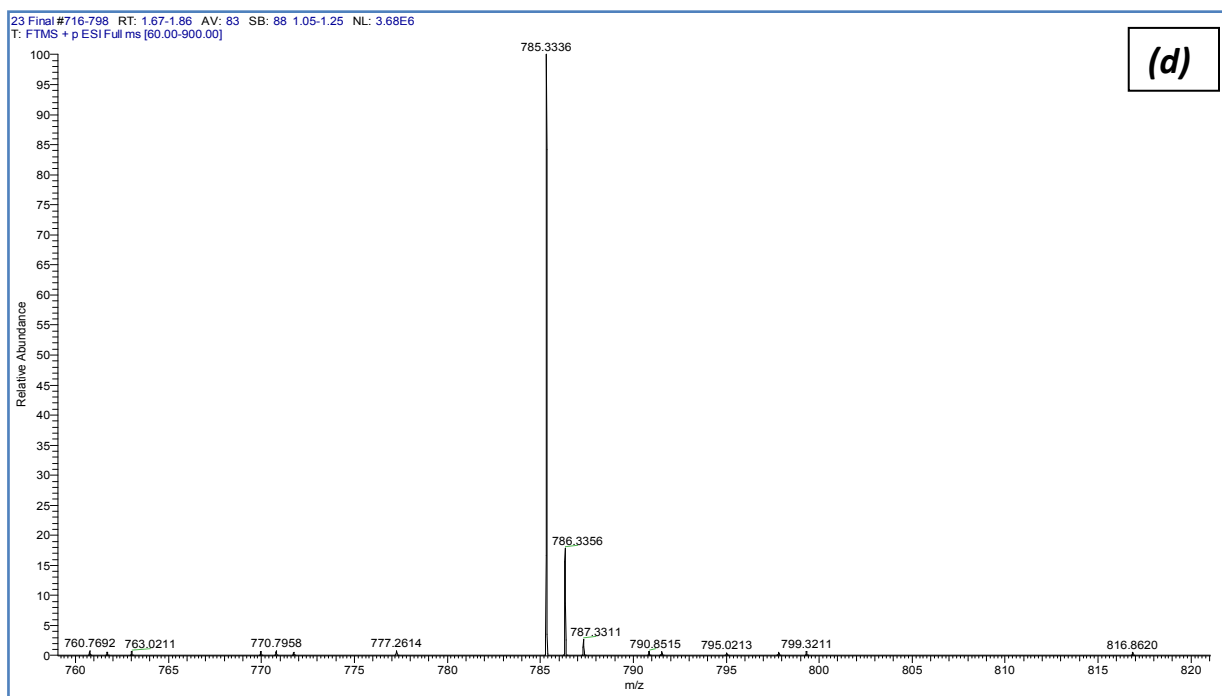
IL-5 [HbMBIM-PS]HSO<sub>4</sub>:



24-23FINAL

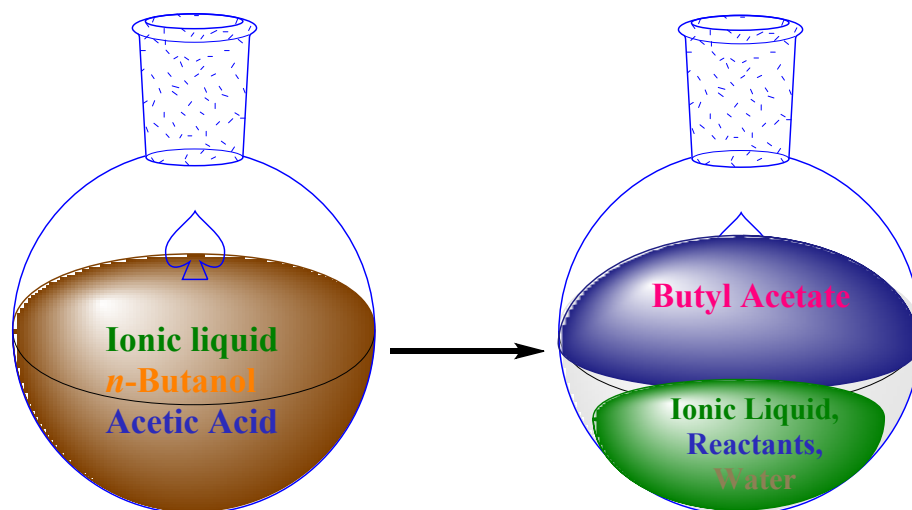




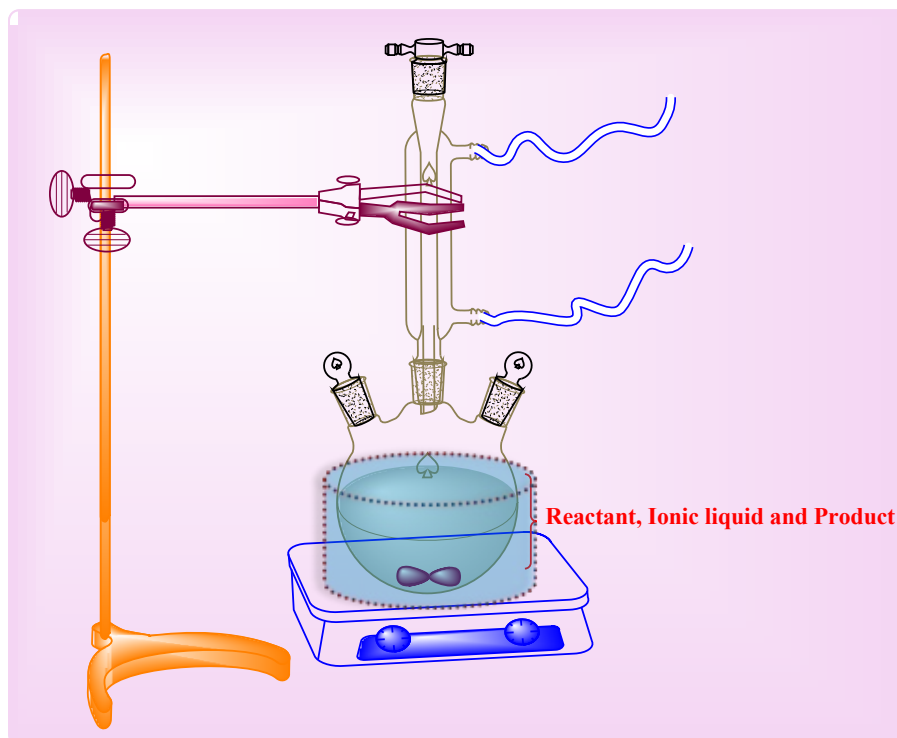


**Fig. S5** (a)  $^1\text{H-NMR}$ , (b)  $^{13}\text{C-NMR}$ , (c) FT-IR, (d) Mass spectra and (e) TG-DTA of synthesized IL-5 [HbMBIM-PS]HSO<sub>4</sub>.





**Fig. S6** Schematic illustration of ILs, acetic acid and *n*-Butanol during esterification reaction



**Scheme S1.** Apparatus for the esterification reaction