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Electronic supplementary information (ESI)

Efficient synthesis of glycerol carbonate/glycidol using 1, 8-Diazabicyclo [5.4.0] undec-7-ene (DBU) based ionic liquids as catalyst

Mudassir K Munshi, Pradeep S Biradar, Swapna M Gade, Vilas H Rane and Ashutosh A Kelkar

Chemical Engineering and Process Development Division,

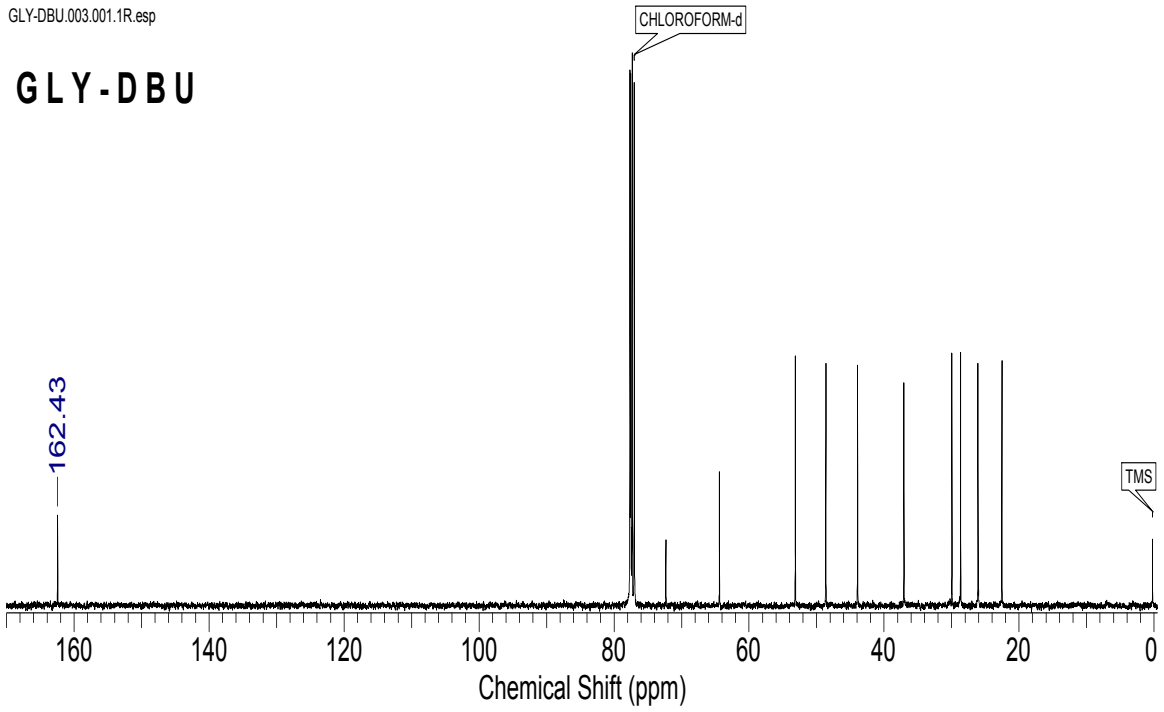
National Chemical Laboratory, Pune 411008, India.

E-mail: aa.kelkar@ncl.res.in

Characterization of Ionic liquids prepared by NMR and IR spectroscopy

Ionic liquids were prepared by bubbling CO_2 in the mixture of DBU and alcohol. Three ILs were prepared as DBU-methanol (**IL1**), DBU-1,2-propaneglycol (**IL2**) and DBU-GLY (**IL3**). The reaction was exothermic and also weight gain was observed during the reaction. CO_2 bubbling was continued till the mixture became viscous and there was no further weight gain. Weight gain for methanol based IL (**IL1**) was almost quantitative, while that for 1,2-propylene glycol based IL (**IL2**) was ~55% and ~35 % for IL based on GLY (**IL3**). Thus based on weight gains the IL formation was complete with methanol, while mostly monocaroxylate ILs were formed with 1,2-propylene glycol and GLY as alcohols (which is consistent with the literature reports). Ionic liquids prepared were analyzed by NMR (^1H and ^{13}C NMR analysis) using $CDCl_3$ as a solvent. For this purpose DBU-GLY mixture was also analyzed for comparison with **IL3**. NMR analysis was carried out on Bruker Avance 400 instrument. FT-IR analysis was carried on Agilent Technologies, Cary 600 series FT-IR Spectrometer. The results are presented below.

Fig. 1a ^{13}C-NMR Spectrum of GLY-DBU and IL1-3



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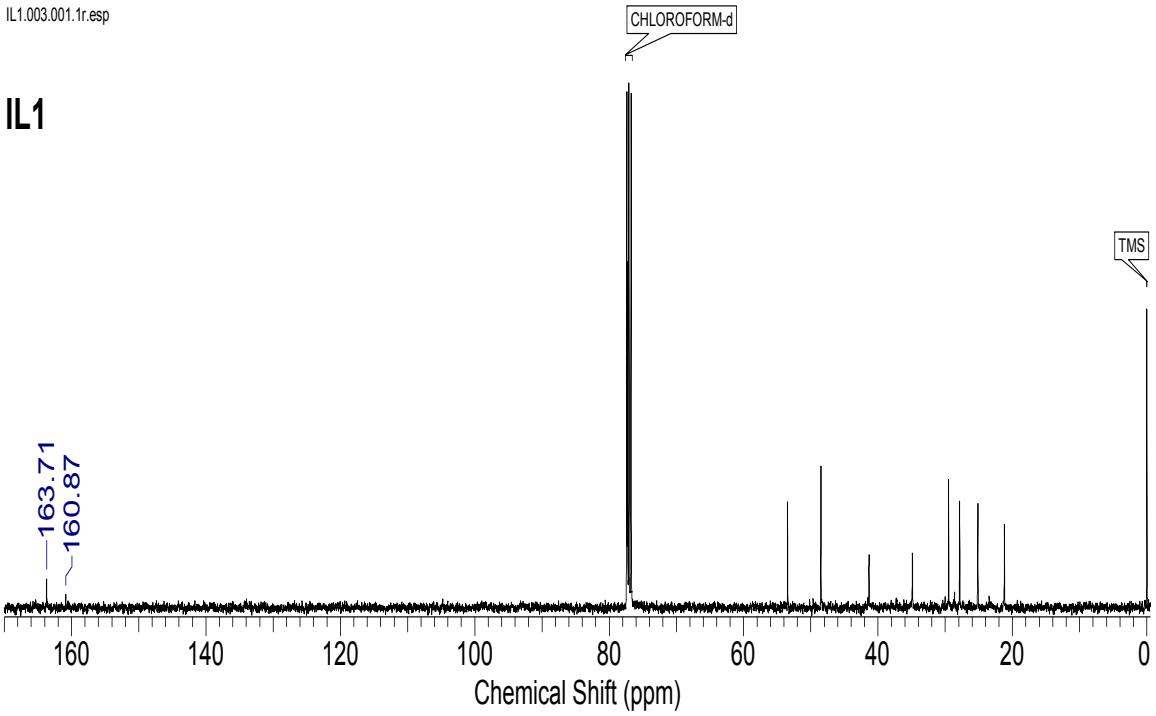

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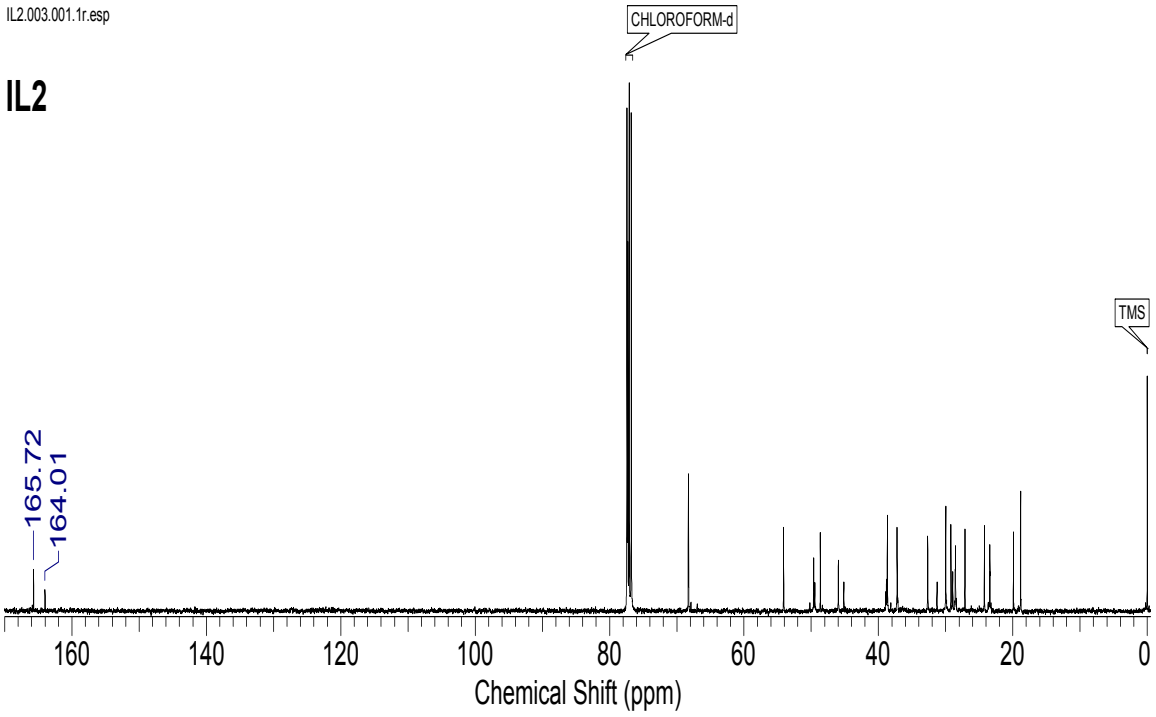


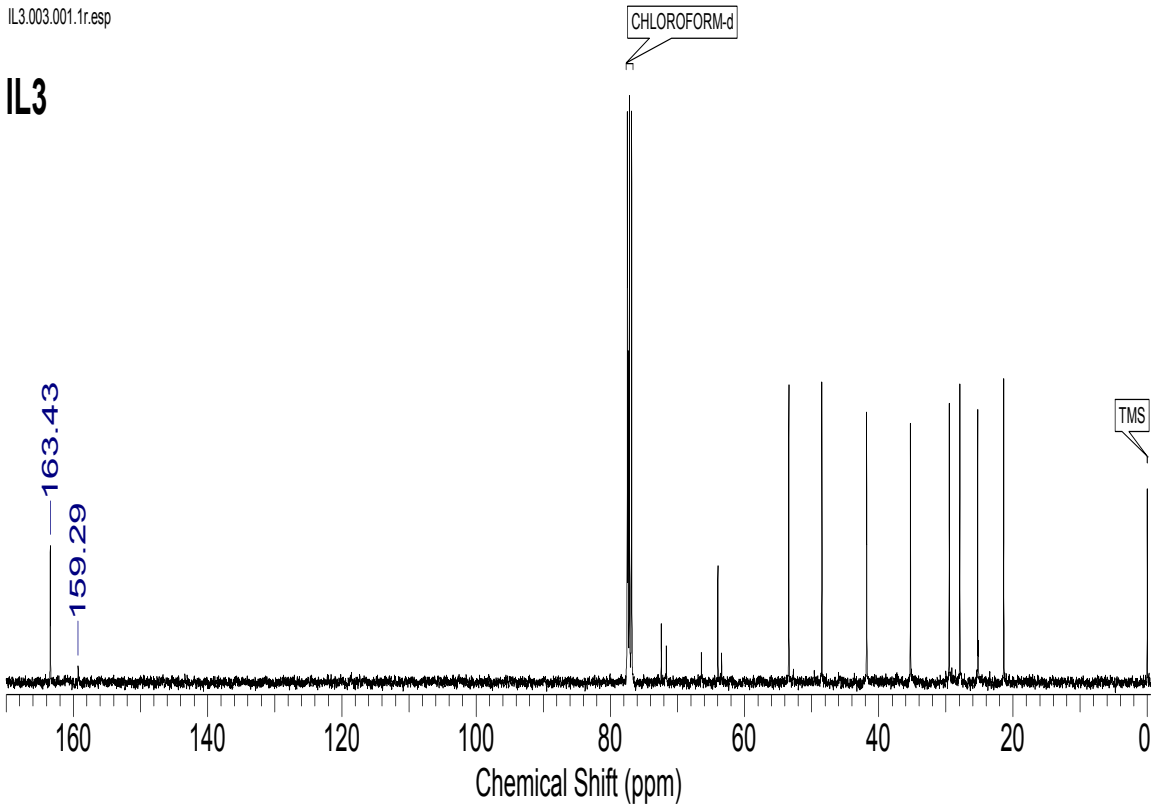
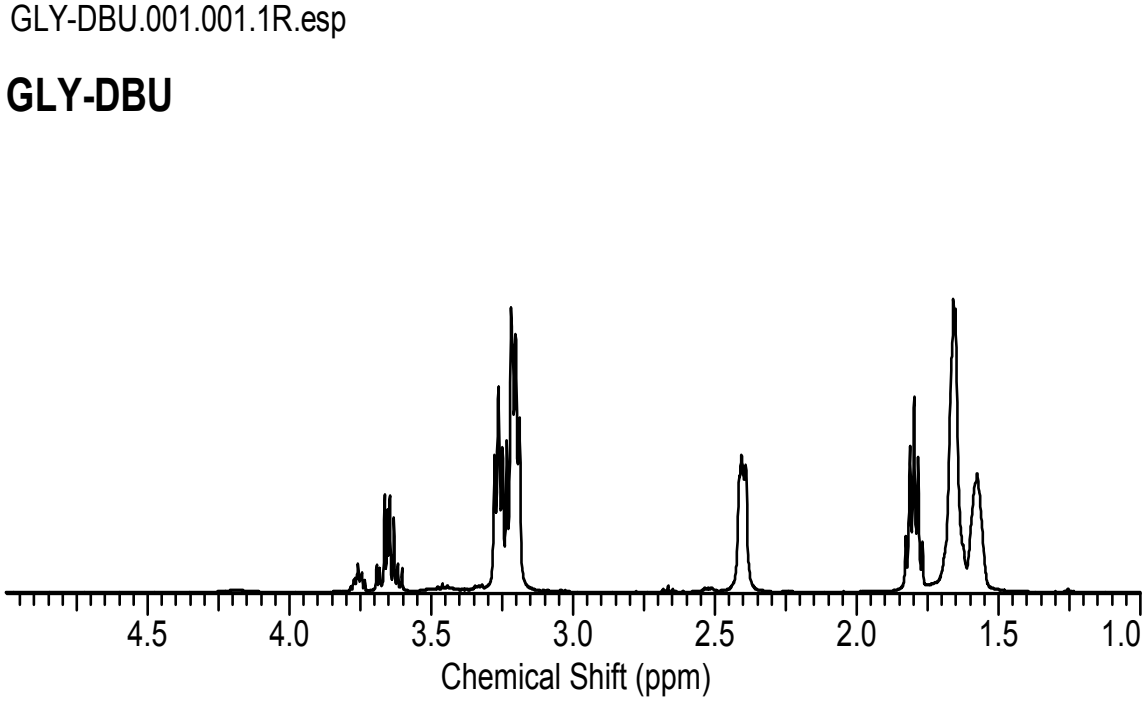


Fig. 1b ^{1}H-NMR Spectrum of GLY-DBU and IL1-3



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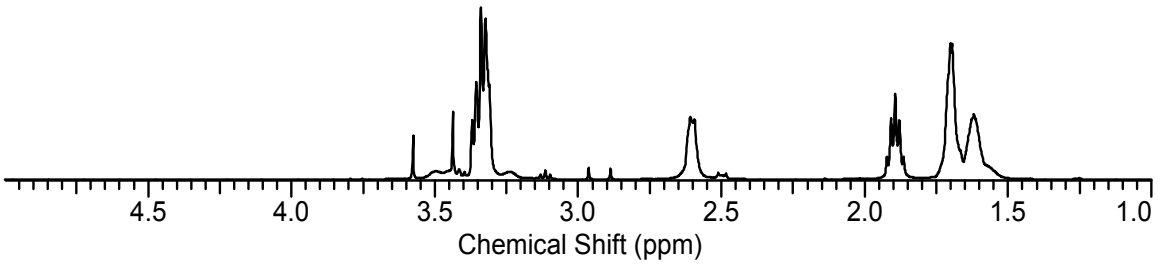
IL1



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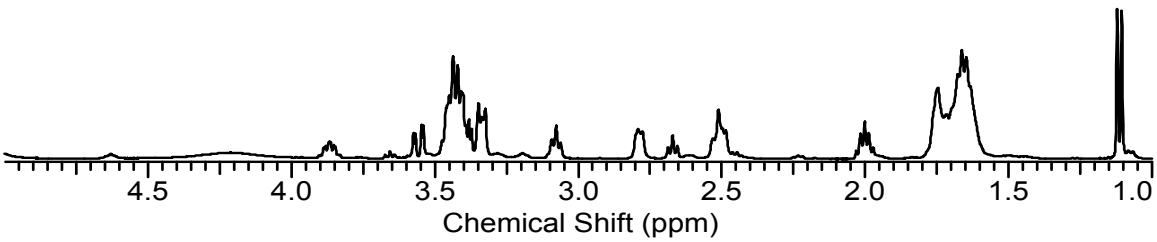

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I L 3

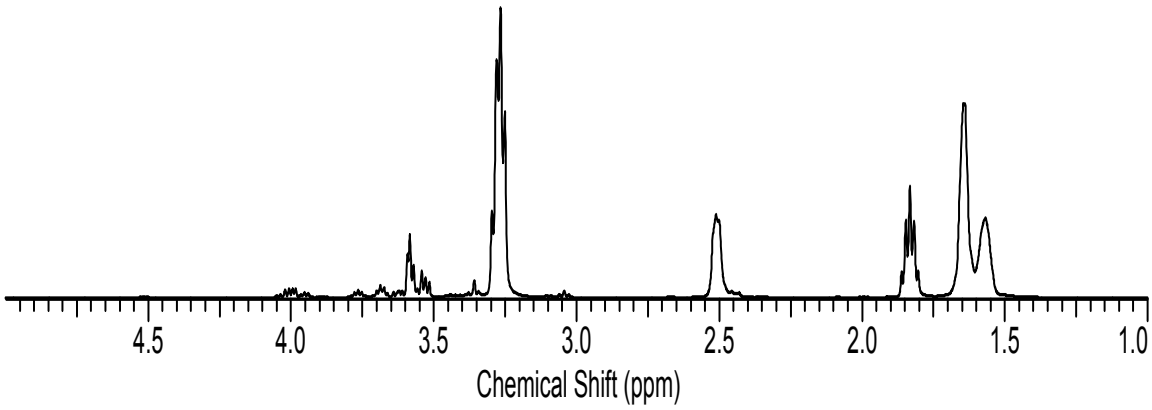

Fig. 1c IR Spectrum of IL1-3