# Electronic supplementary information

## Role of cation-anion in selective synthesis of glycidol from glycerol using DABCO-DMC ionic liquid as catalyst

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## Content



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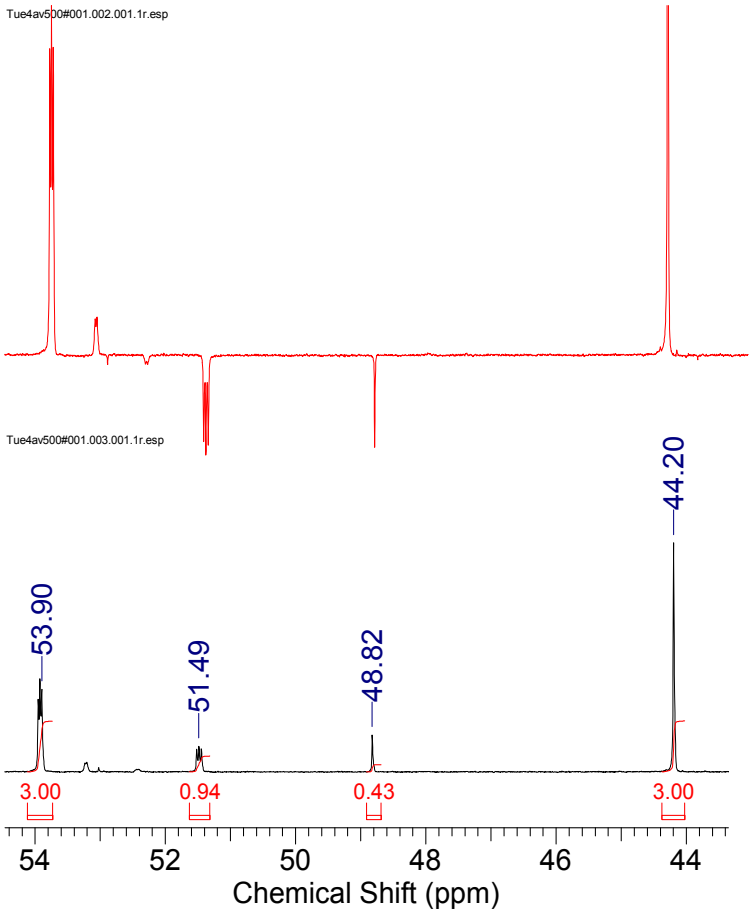
## Instruments:

NMR Spectra were recorded on a Bruker Avance 500 and 400 wide bore spectrometer equipped with a superconducting magnet with a field of 9.4 T by using 5 mm tubes in $D_2O$ as a solvent. 15N NMR chemical shifts in parts per million (ppm) were reported with reference to liquid $NH_3$.Thermal analysis (TG-DTA) of the ionic liquid was conducted using a Pyris Diamond TGA analyzer with a heating rate of 10 ºC $min^{-1}$ under nitrogen atmosphere. And melting point was measured on melting point apparatus.

**Figure 1:** $^{13}C$ NMR spectra of ionic liquid

A: $^{13}C$ NMR DEPT

B: $^{13}C$ NMR




Note: The text "Tue3av400#002.001.001.1r.esp" is the file name that inherently comes with the ACD software used for NMR data interpretation.

**Figure 2:** $^{1}H$-$^{13}C$ HSQC NMR spectra of ionic liquid

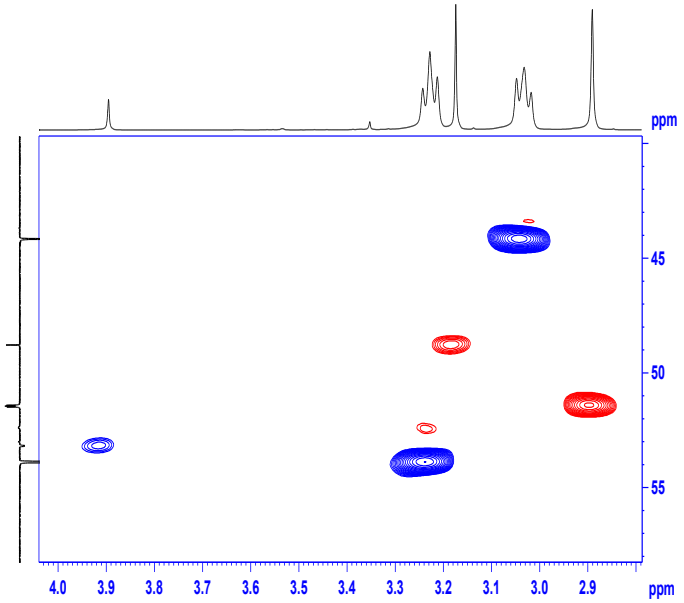
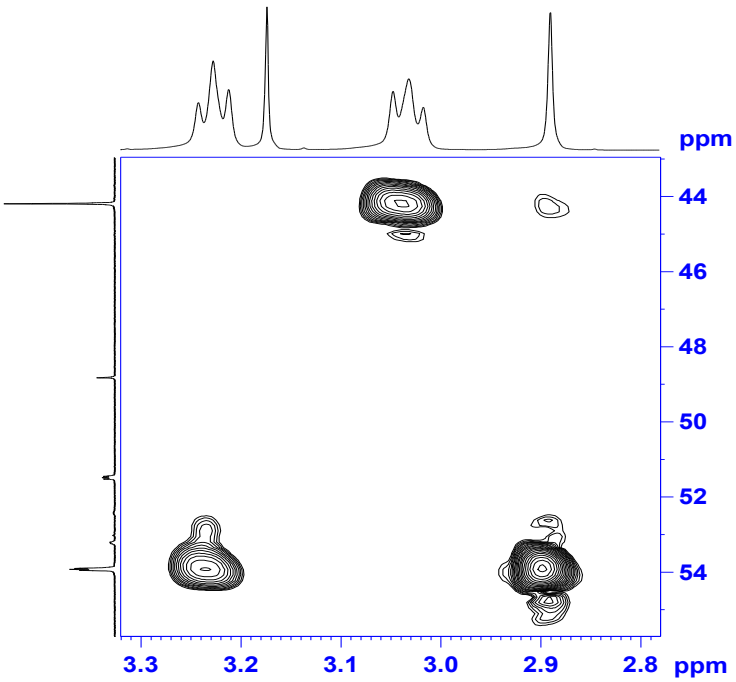



**Figure 3:** $^{1}H$-$^{13}C$ HMBC NMR spectra of ionic liquid




Key correlations observed in $^{1}H$-$^{13}C$ HSQC (Figure 2) are: δC 44.20/δH 3.09, δC 48.82/δH 3.16, δC 51.49 /δH 2.95, δC 53.90 /δH 3.29 and those observed in $^{1}H$-$^{13}C$ HMBC (Figure 3) are: δC 53.90 /δH 3.29 (observed in $^{1}H$-$^{13}C$ HSQC) along with a new long range correlation of δC 53.90 /δH 2.95. The observed correlations establish the presence of N-$CH_3$ unit in the ionic liquid synthesized.

**Figure 4:** TGA analysis of the ionic liquid