

Supporting information

**Heteropolyanion-Based Ionic Liquids Catalysed Conversion of
Cellulose into Formic Acid without Any Additives**

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Figure S1. ^{31}P -NMR of $\text{H}_4\text{PMo}_{11}\text{VO}_{40}$

Figure S2. ^{31}P -NMR of IL-3

Figure S3. ^{13}C -NMR of IL-3

Figure S4. ^1H -NMR of IL-3

Figure S5. ^{13}C -NMR of IL-5

Figure S6. ^1H -NMR of IL-5

Figure S7. ^{13}C -NMR of IL-6

Figure S8. ^1H -NMR of IL-6

Figure S9. FT-IR spectrum of $[\text{MIMPS}]_N\text{H}_{4-N}\text{PMo}_{11}\text{VO}_{40}$ ($N=0-4$); a. $N=0$; b. $N=1$; c. $N=2$; d. $N=3$; e. $N=4$.

Figure S10. XRD spectrum of $[\text{MIMPS}]_N\text{H}_{4-N}\text{PMo}_{11}\text{VO}_{40}$ ($N=0,1,2,3,4$); a. $N=0$; b. $N=1$; c. $N=2$; d. $N=3$; e. $N=4$.

Figure S11. ESI-MS spectrum of the anion of IL-3

Figure S12. ESI-MS spectrum of the cation of IL-3

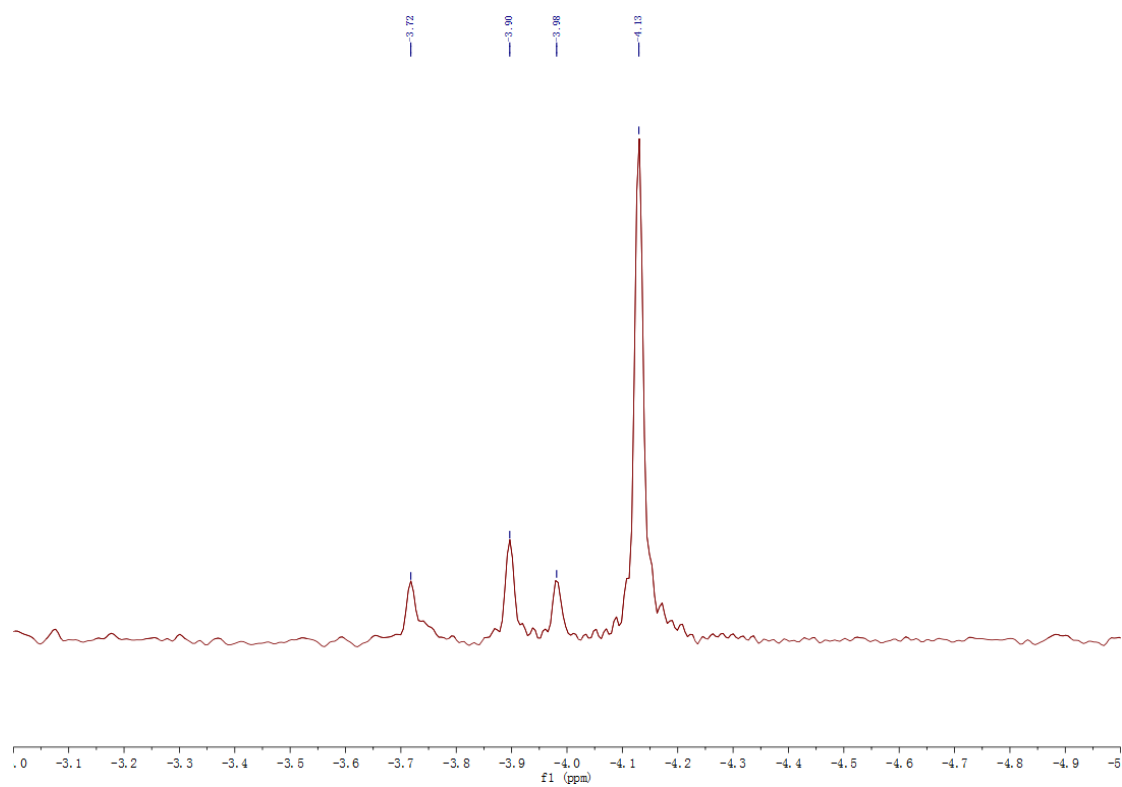


Figure S1. ^{31}P -NMR of H4

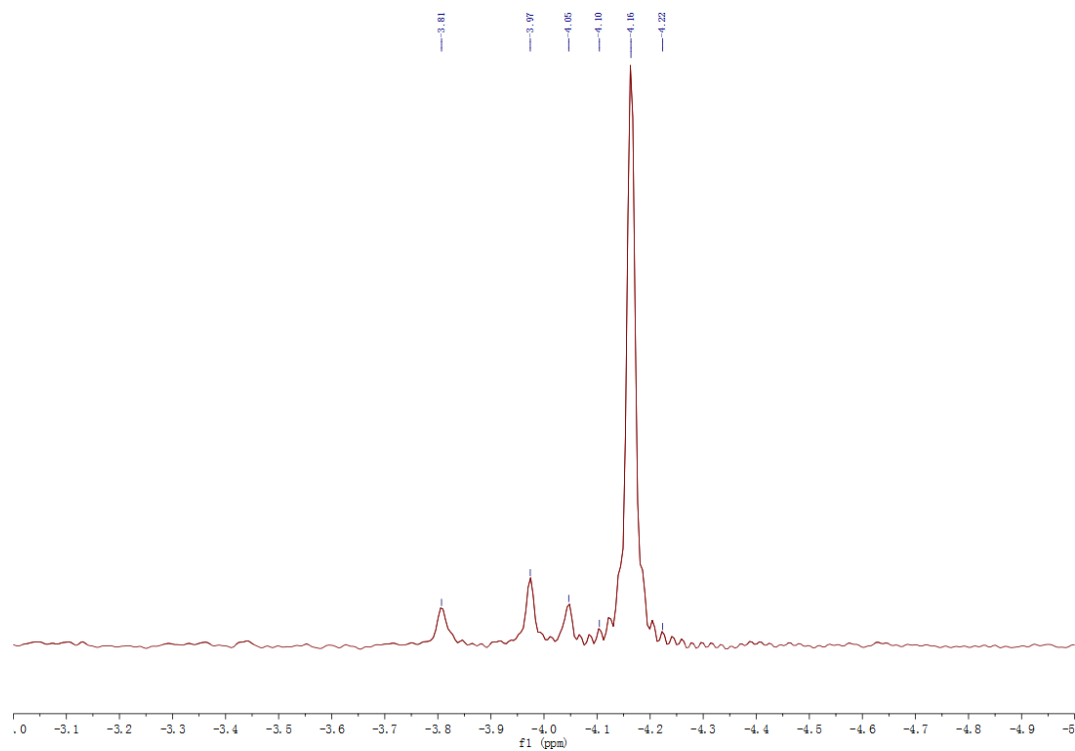


Figure S2. ^{31}P -NMR of IL-3

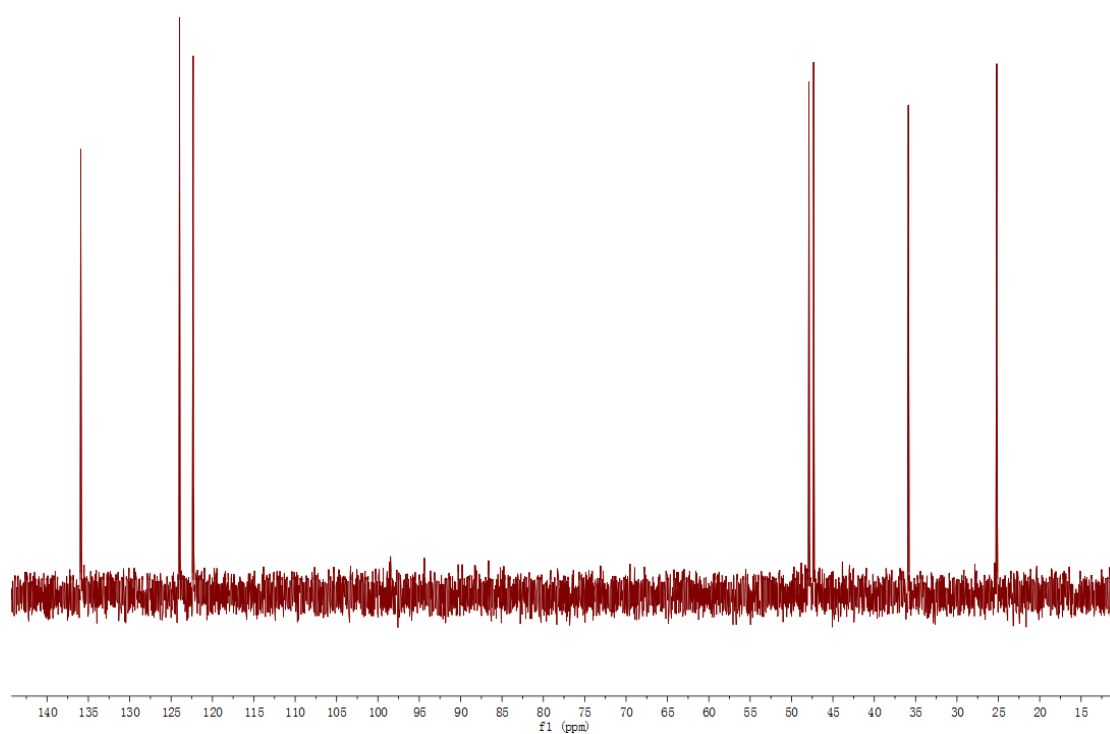


Figure S3. ^{13}C -NMR of IL-3

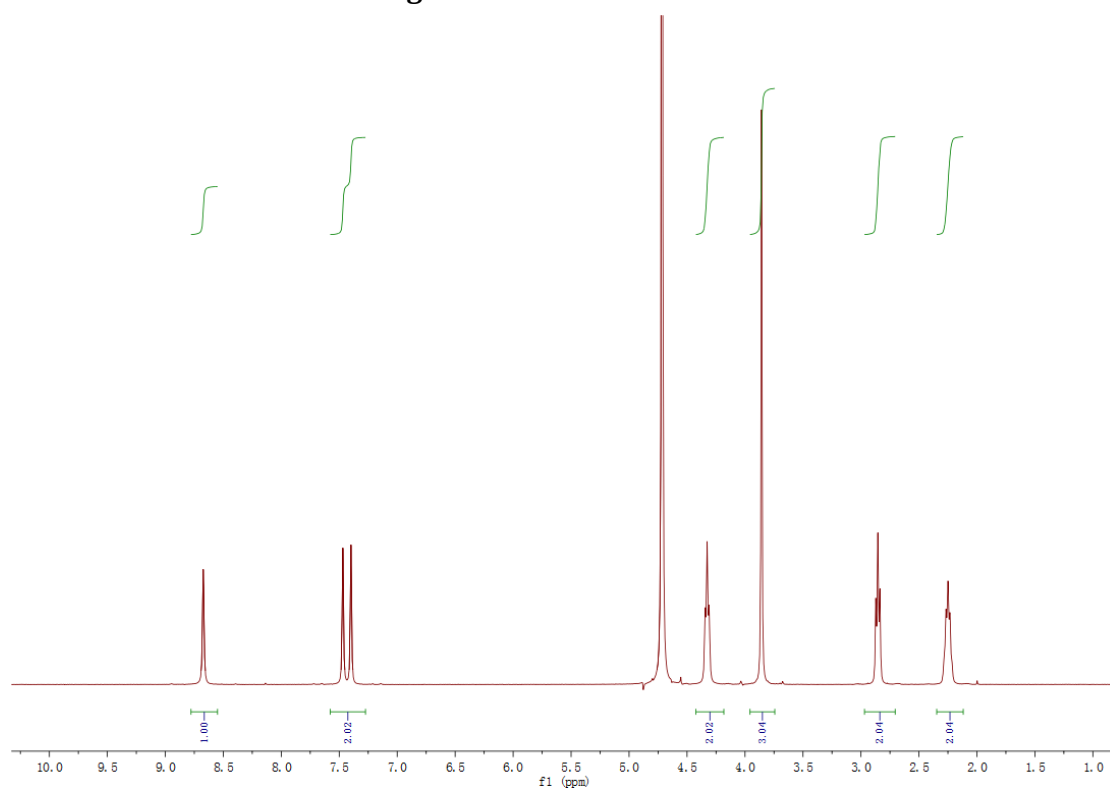


Figure S4. ^1H -NMR of IL-3

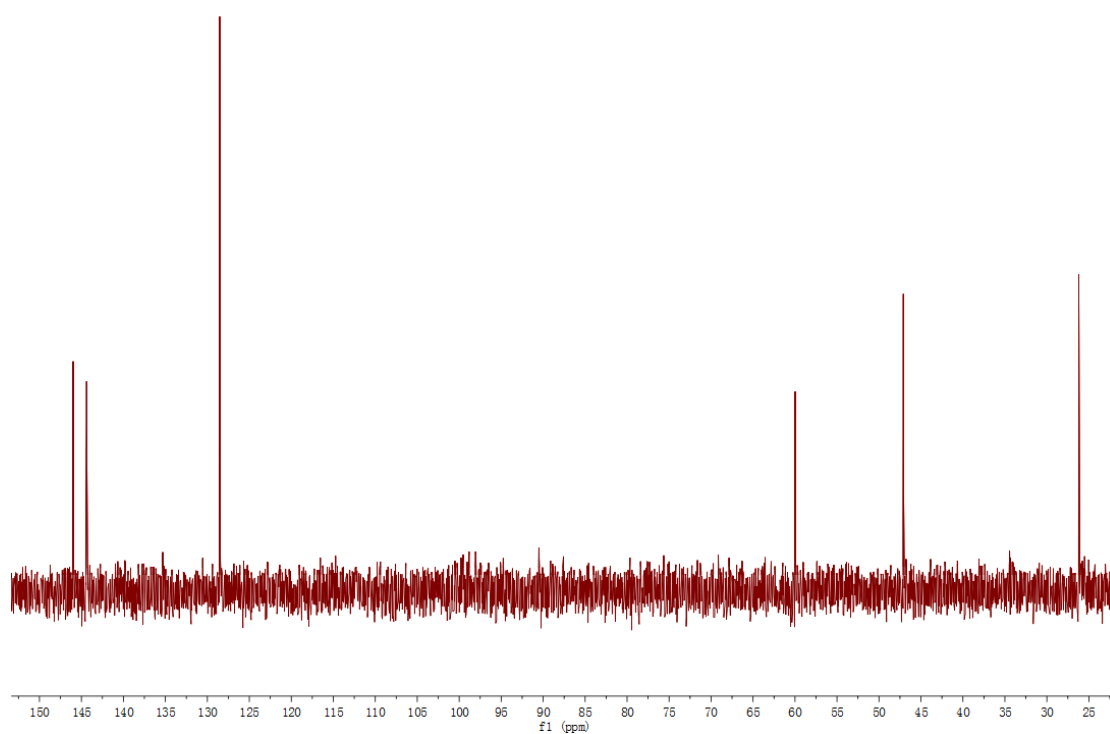


Figure S5. ^{13}C -NMR of IL-5

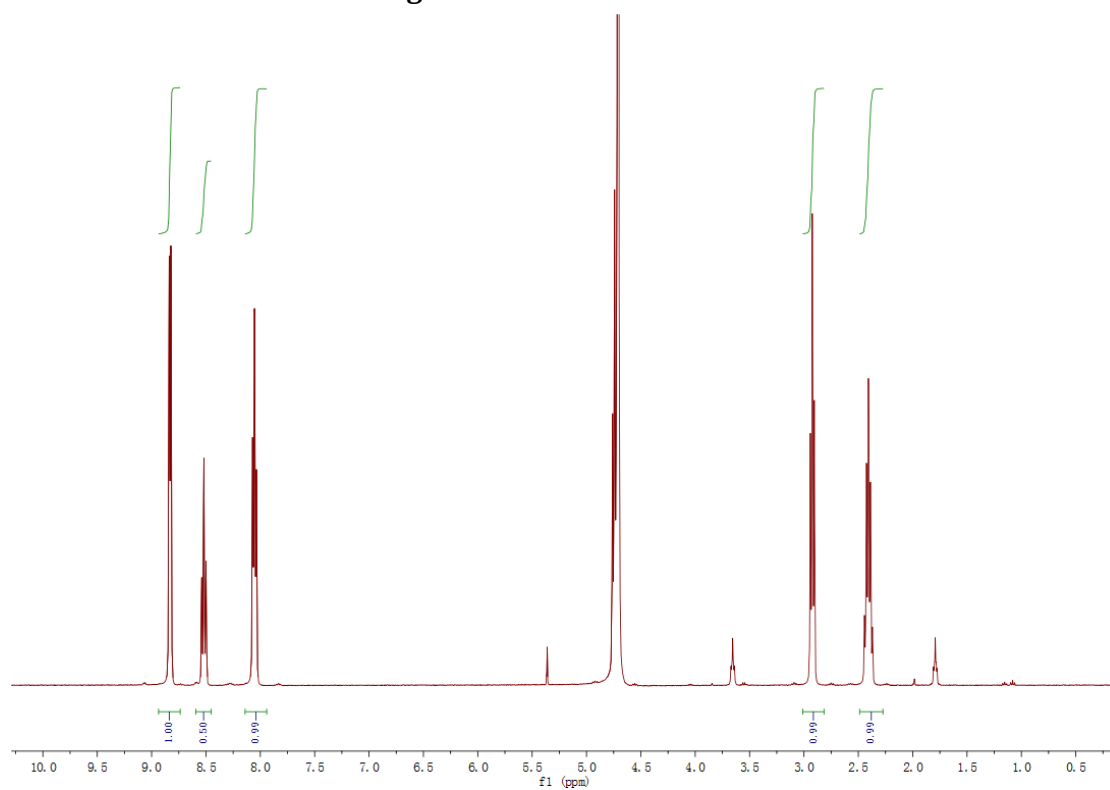


Figure S6. ^1H -NMR of IL-5

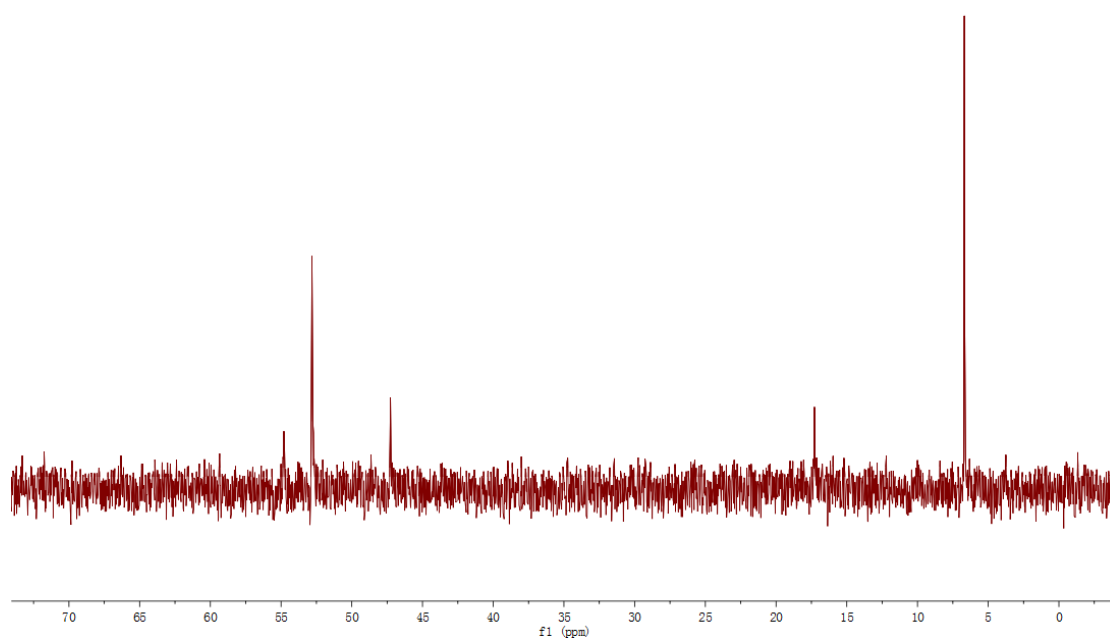


Figure S7. ^{13}C -NMR of IL-6

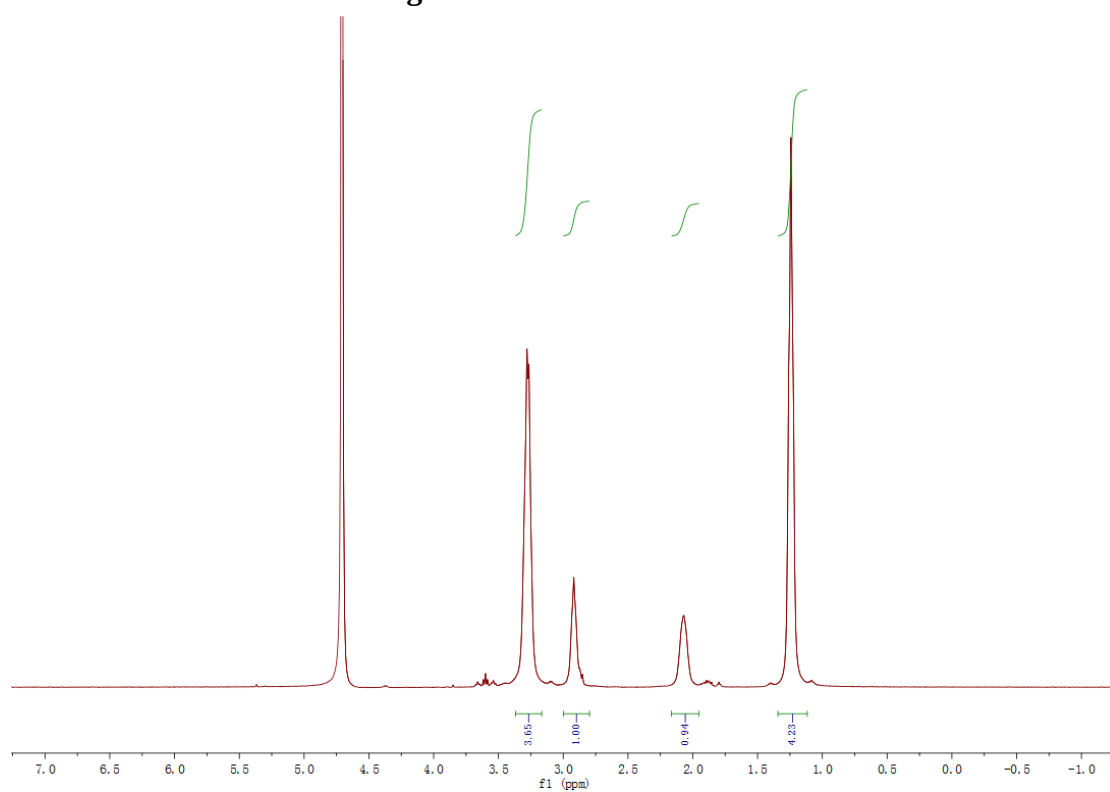


Figure S8. ^1H -NMR of IL-6

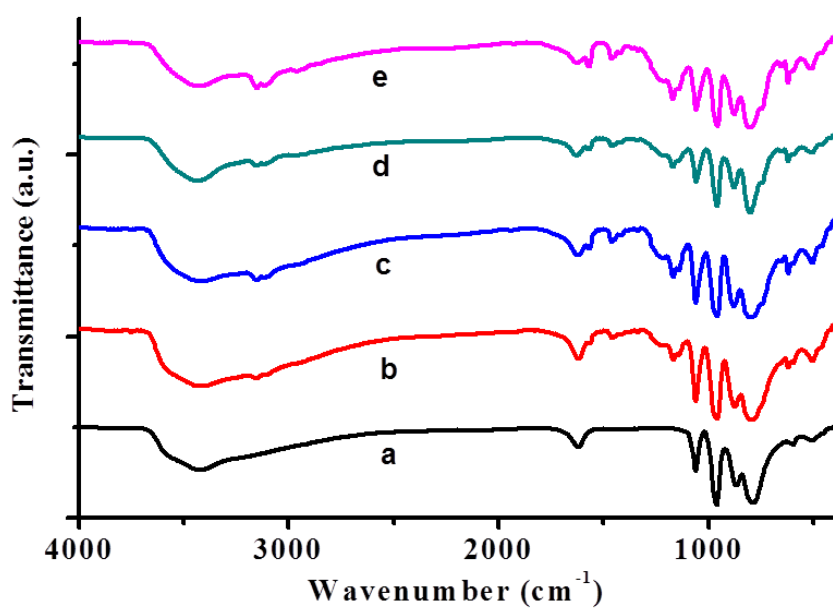


Figure S9. FT-IR spectrum of $[\text{MIMPS}]_N \text{H}_{4-N} \text{PMo}_{11} \text{VO}_{40}$ ($N=0-4$); a. $N=0$; b. $N=1$; c. $N=2$; d. $N=3$; e. $N=4$.

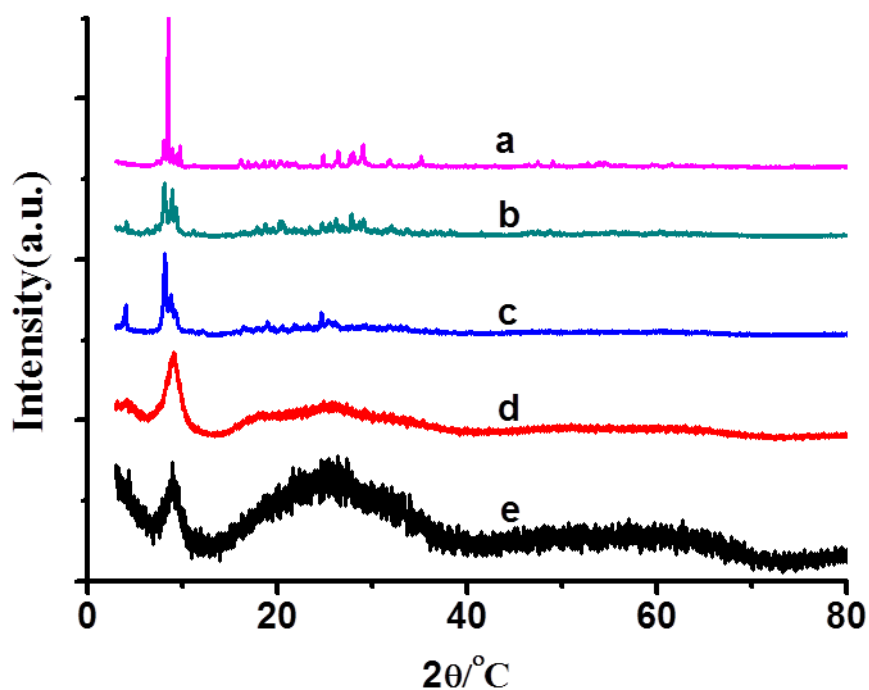


Figure S10. XRD spectrum of $[\text{MIMPS}]_N \text{H}_{4-N} \text{PMo}_{11} \text{VO}_{40}$ ($N=0,1,2,3,4$); a. $N=0$; b. $N=1$; c. $N=2$; d. $N=3$; e. $N=4$.

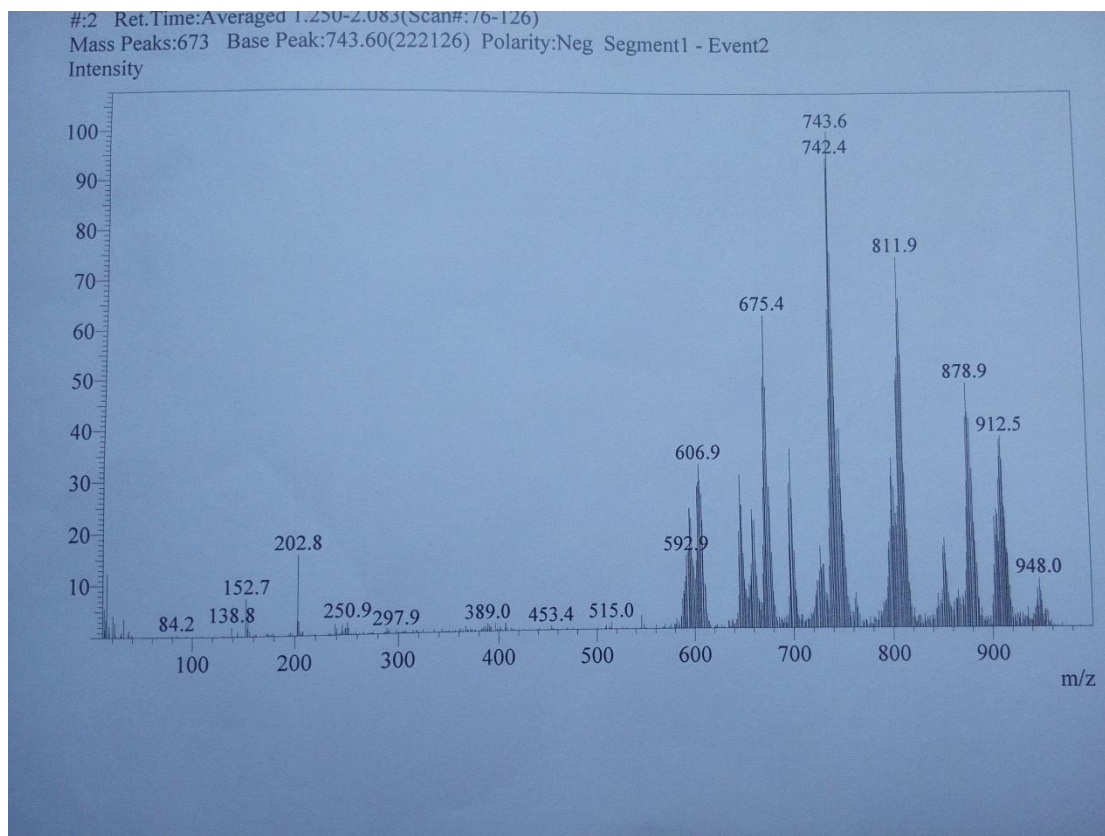


Figure S11. ESI-MS spectrum of the anion of IL-3

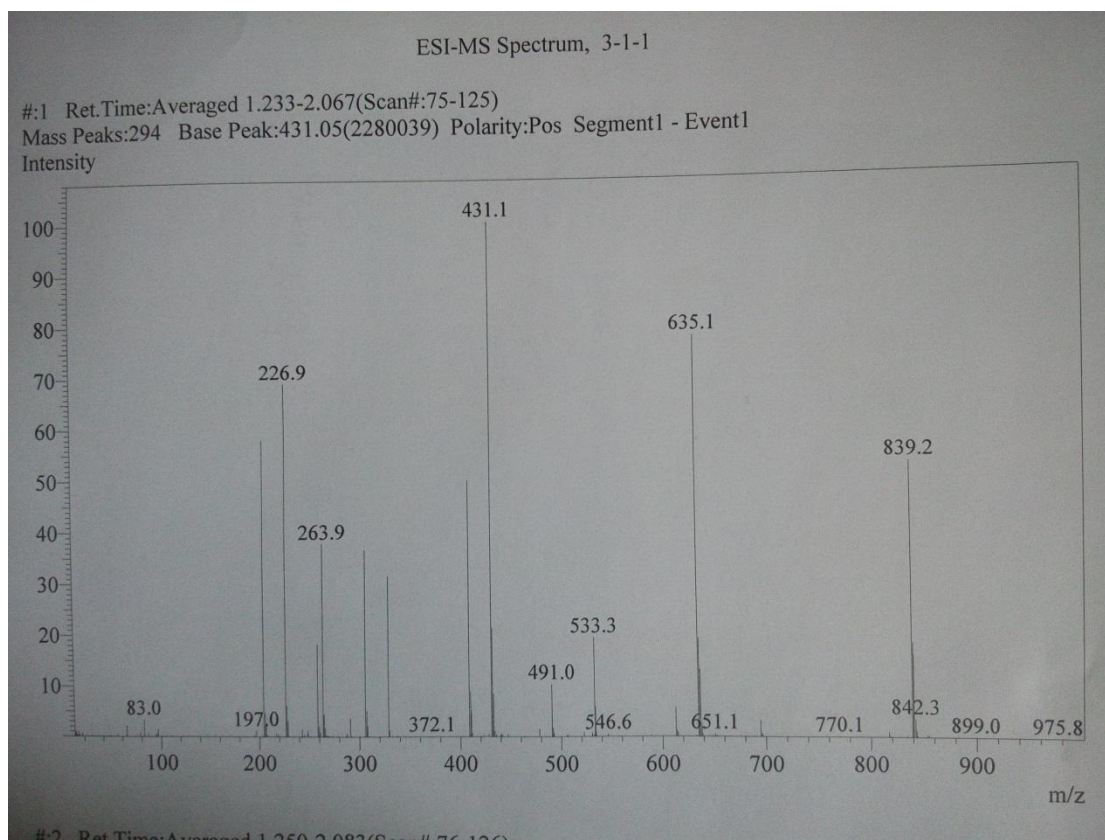


Figure S12. ESI-MS spectrum of the cation of IL-3