

Supporting Information

Ultrafast Igniting, Imidazolium based Hypergolic Ionic Liquids with Enhanced Hydrophobicity

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SI- A. ¹H & ¹³C NMR spectrum of molecules (1-17)

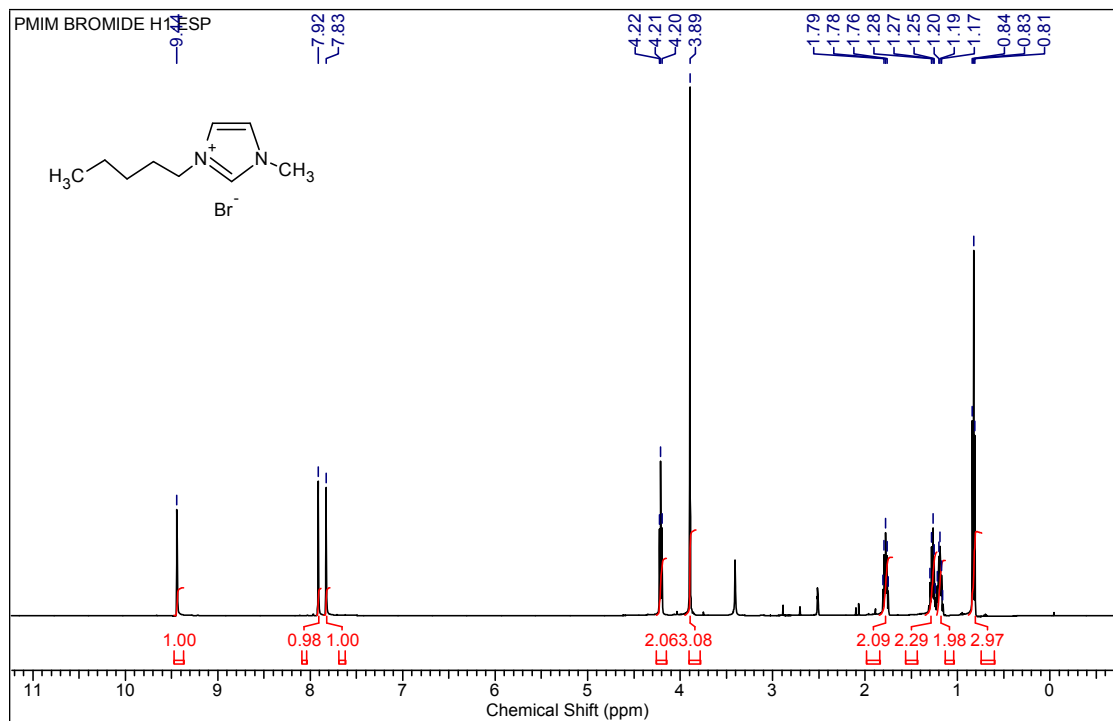


Figure SI-A1. ¹H-NMR spectra of compound 1

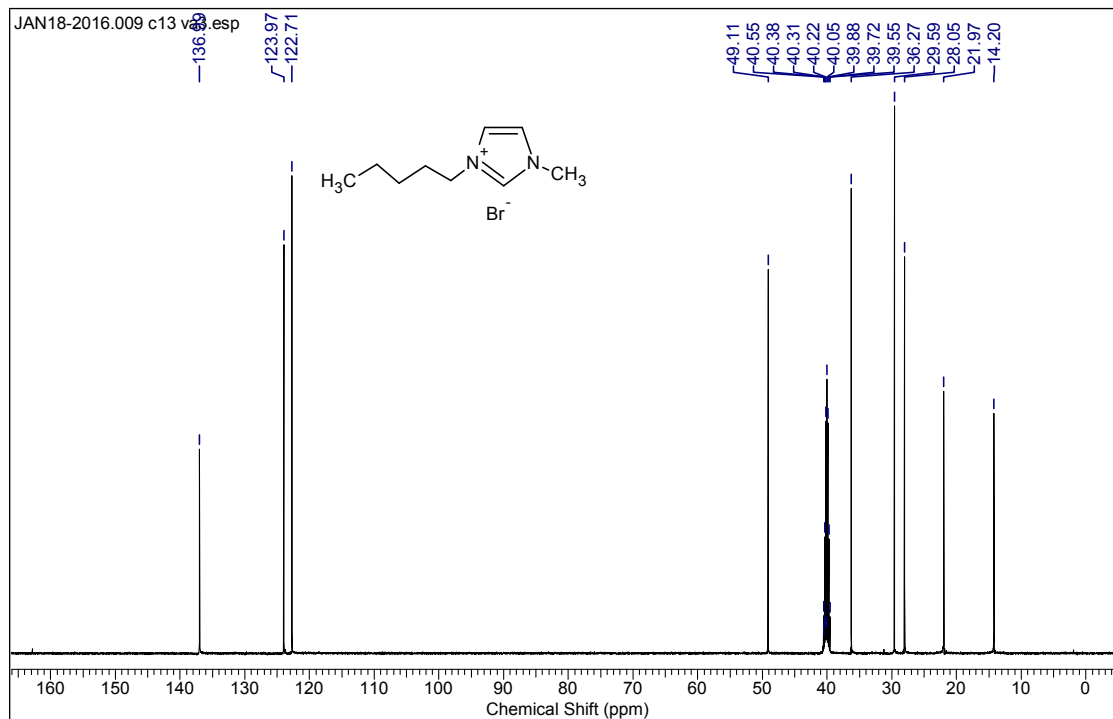


Figure SI-A2. ¹³C-NMR spectra of compound 1

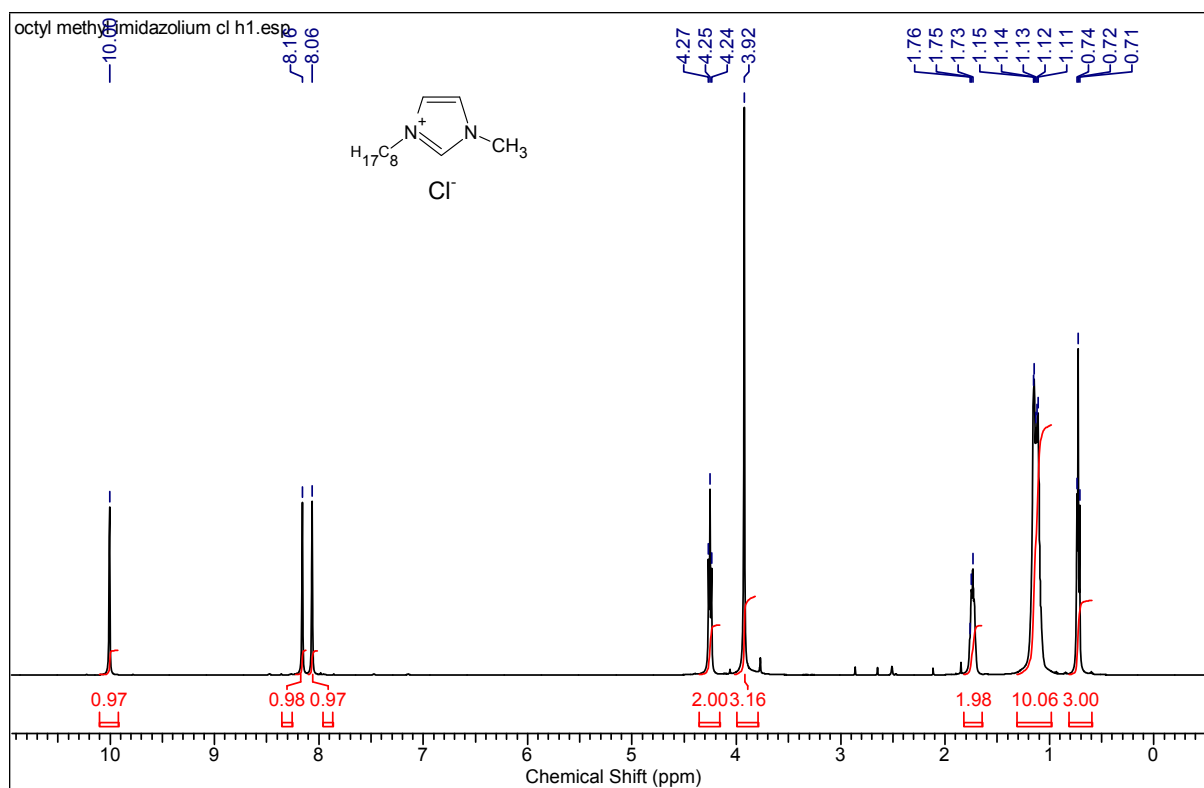


Figure SI-A3. ^1H -NMR spectra of compound 2

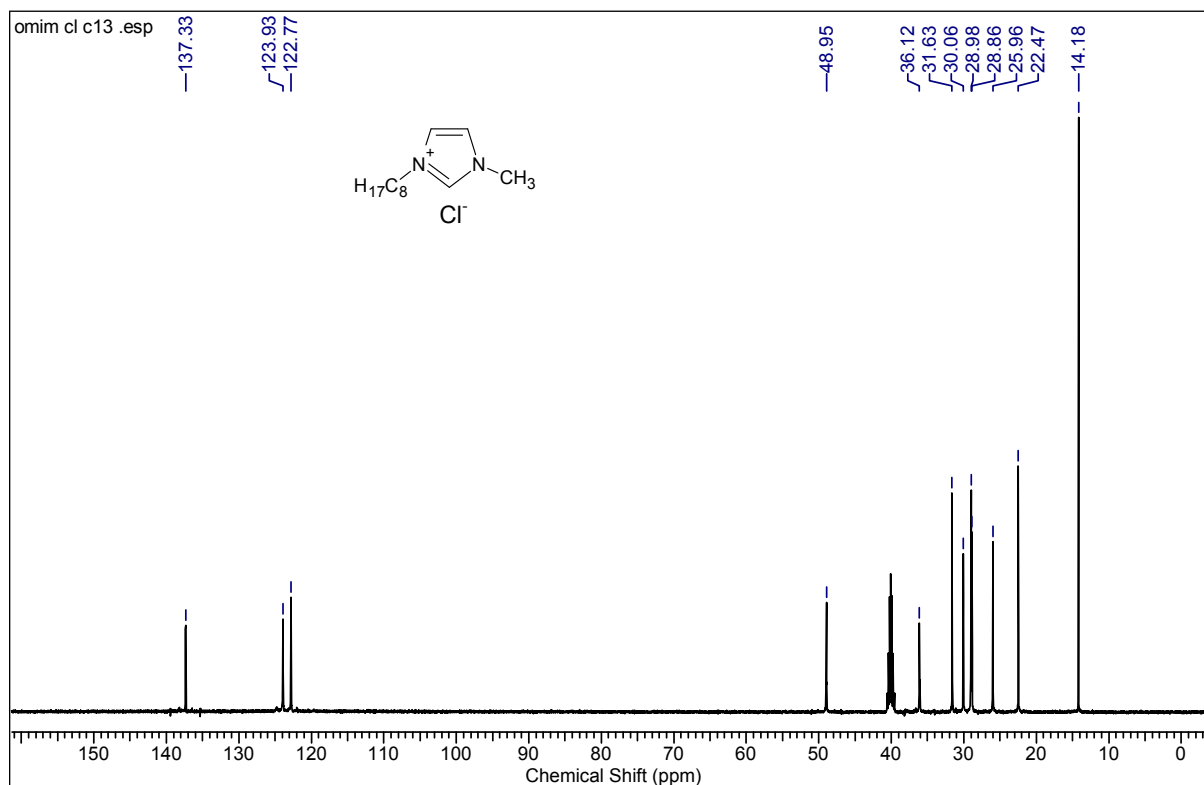


Figure SI-A4. ^{13}C -NMR spectra of compound 2

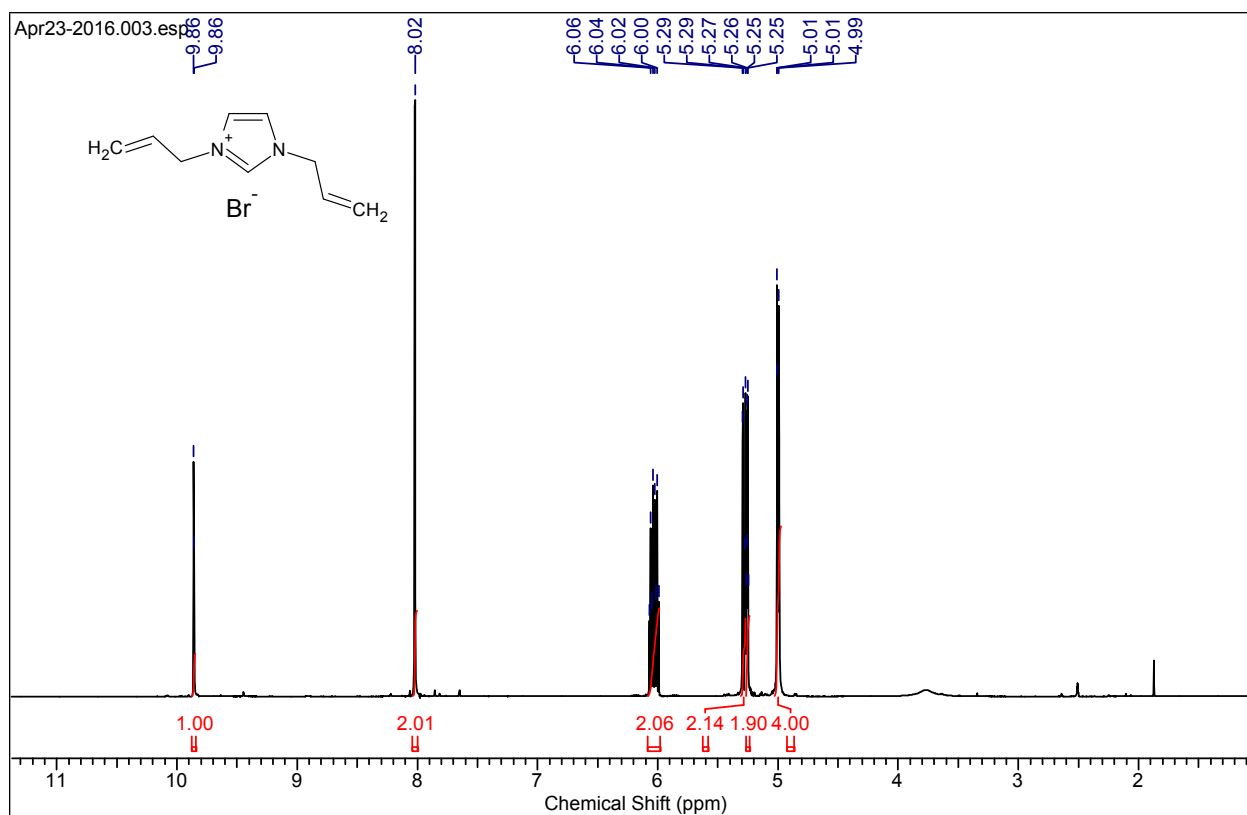


Figure SI-A5. ^1H -NMR spectra of compound **3**

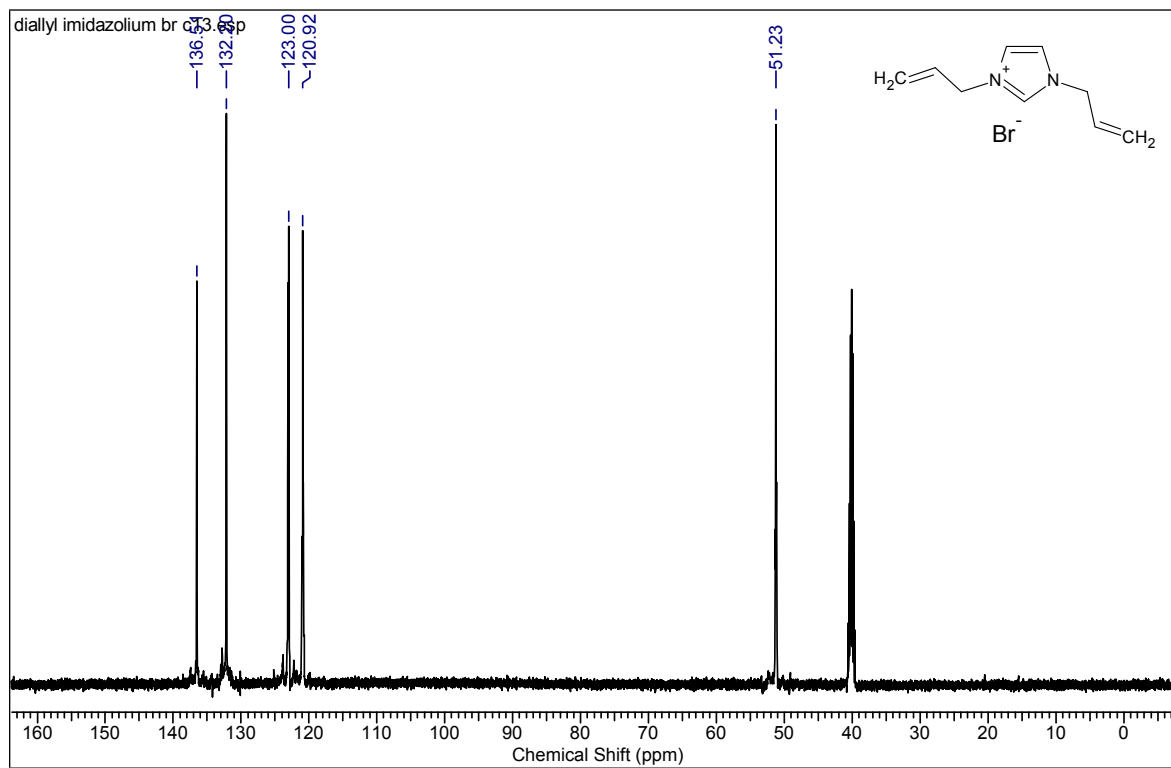


Figure SI-A6. ^{13}C -NMR spectra of compound **3**

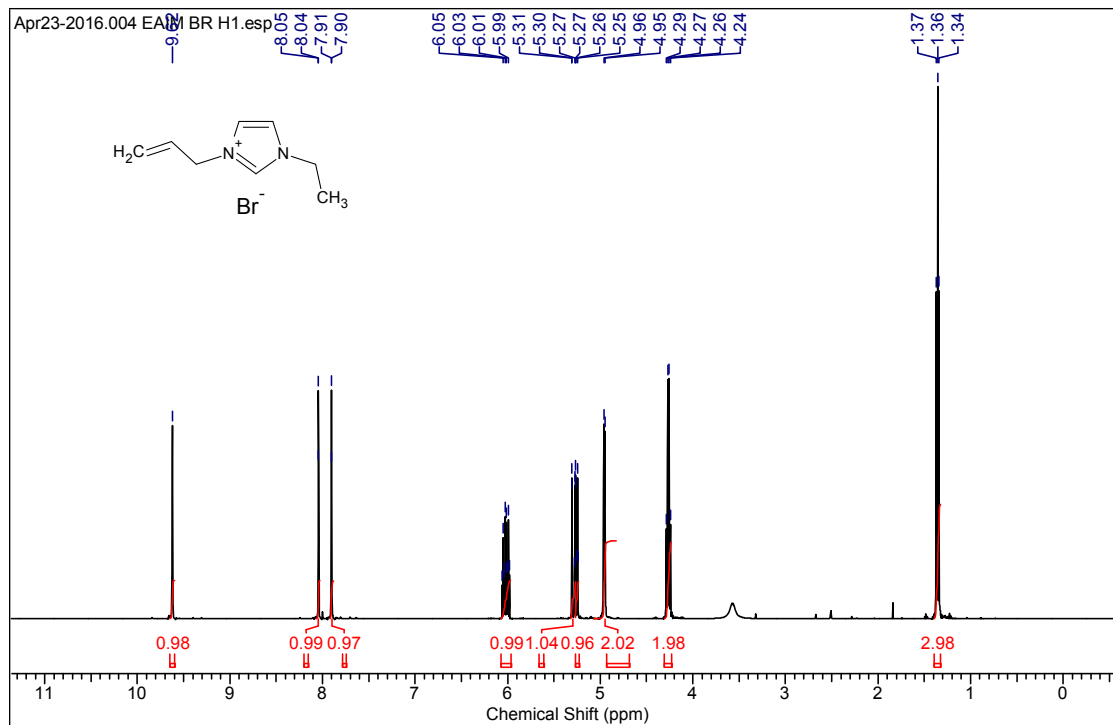


Figure SI-A7. $^1\text{H-NMR}$ spectra of compound 4

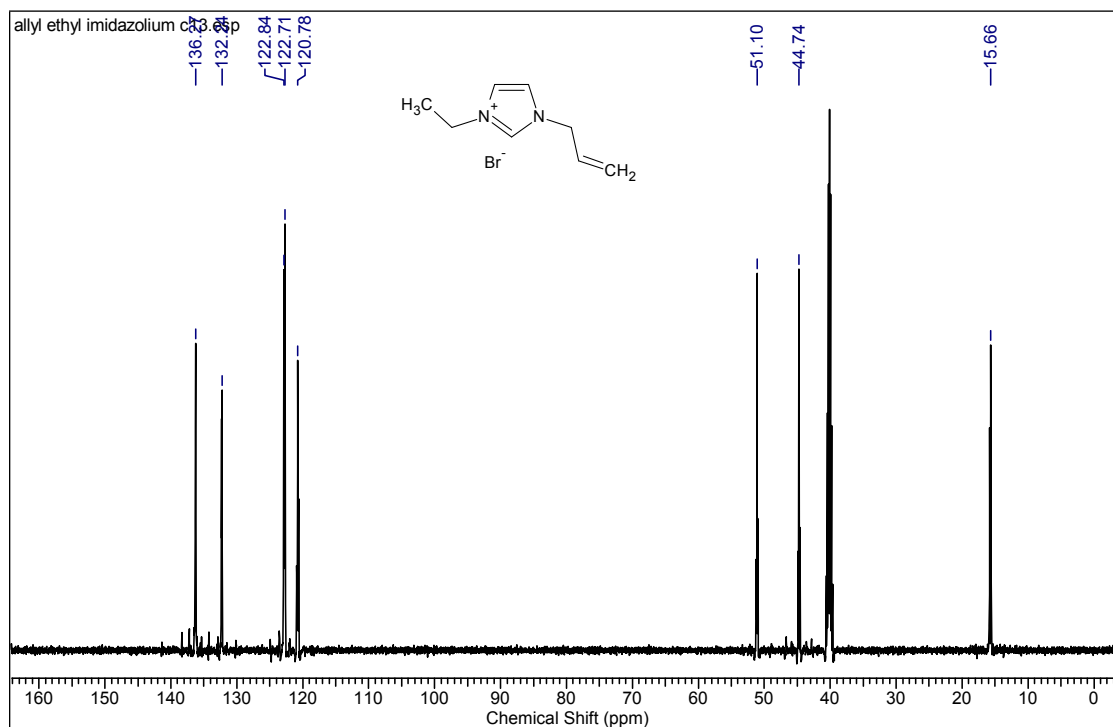


Figure SI-A8. $^{13}\text{C-NMR}$ spectra of compound 4

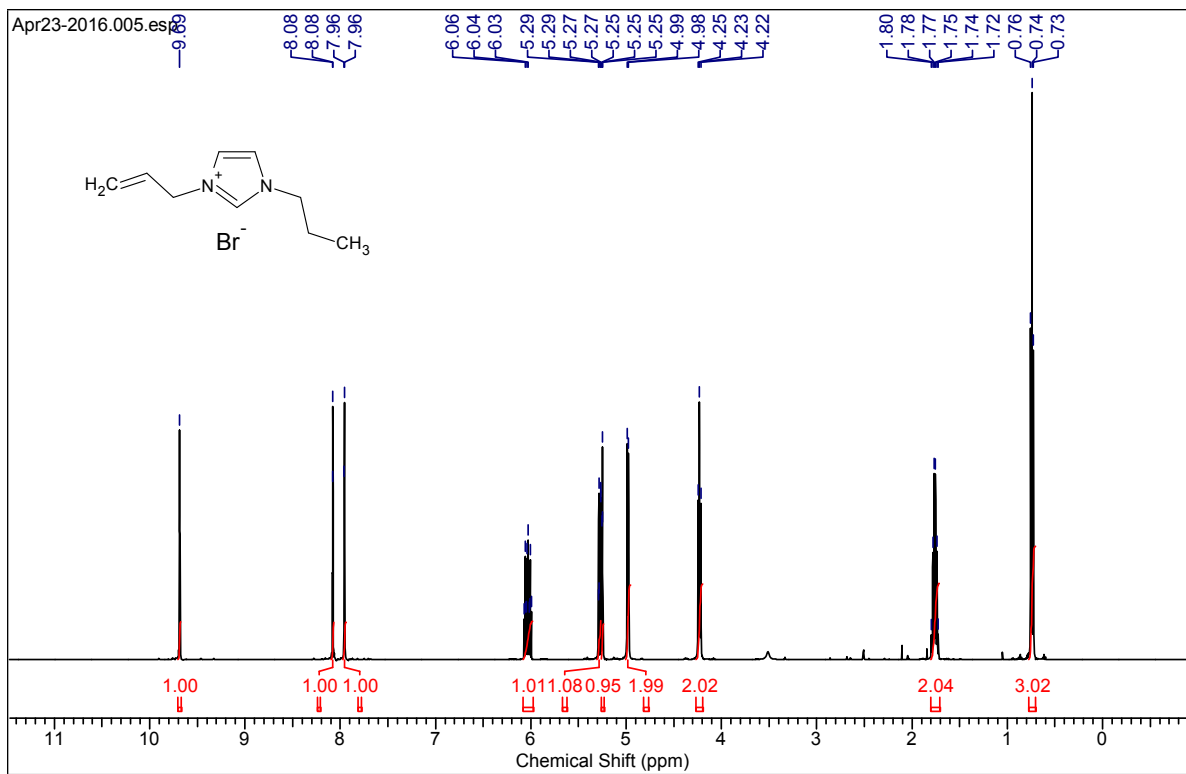


Figure SI-A9. $^1\text{H-NMR}$ spectra of compound 5

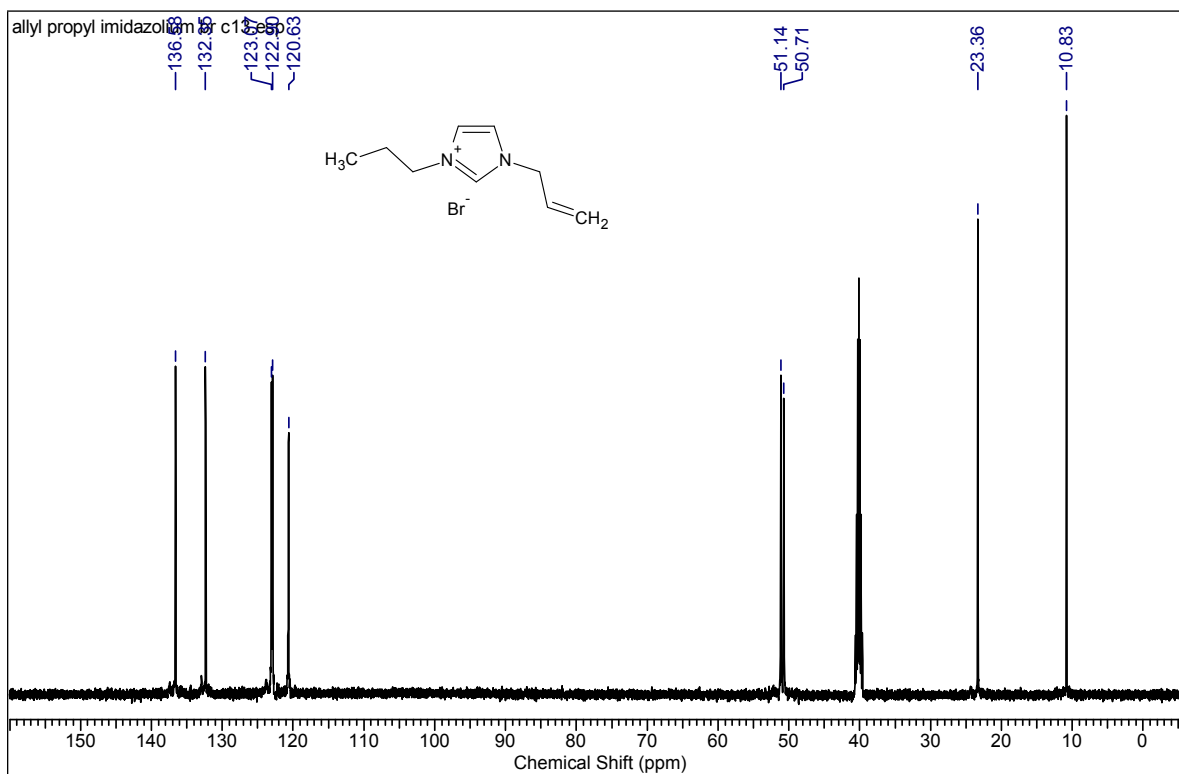


Figure SI-A10. $^{13}\text{C-NMR}$ spectra of compound 5

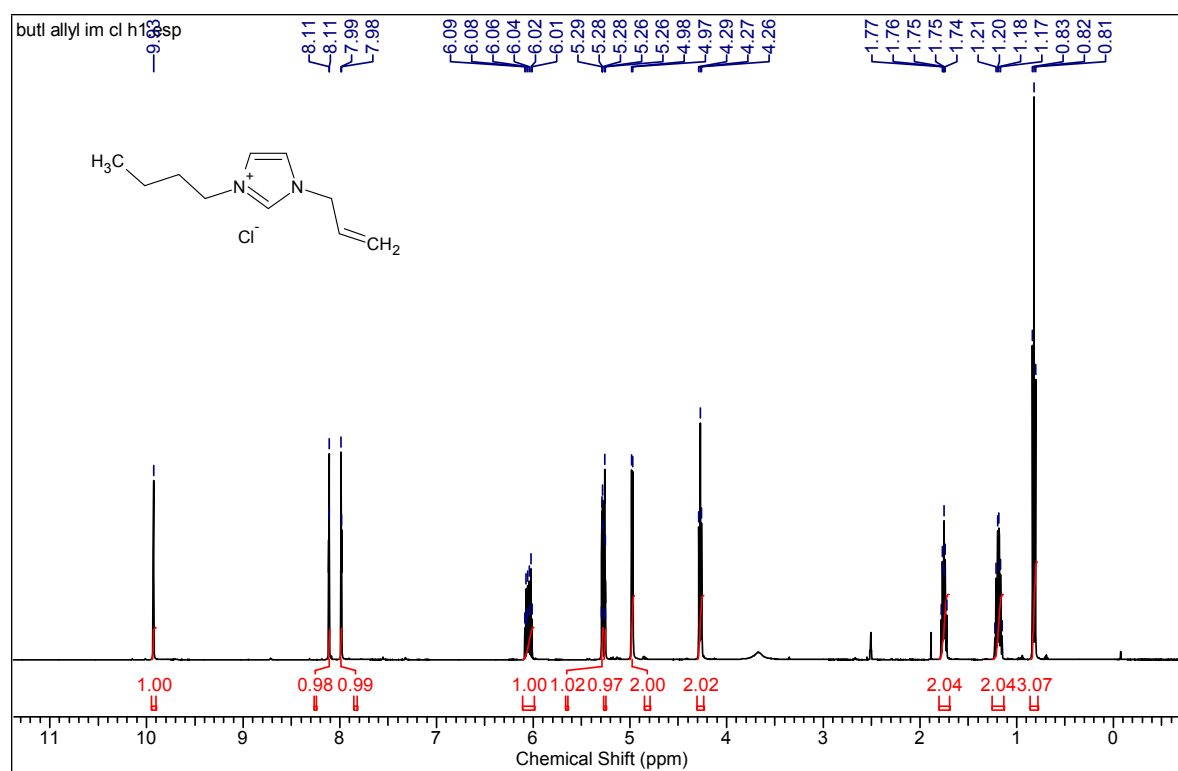


Figure SI-A11. ^1H -NMR spectra of compound 6

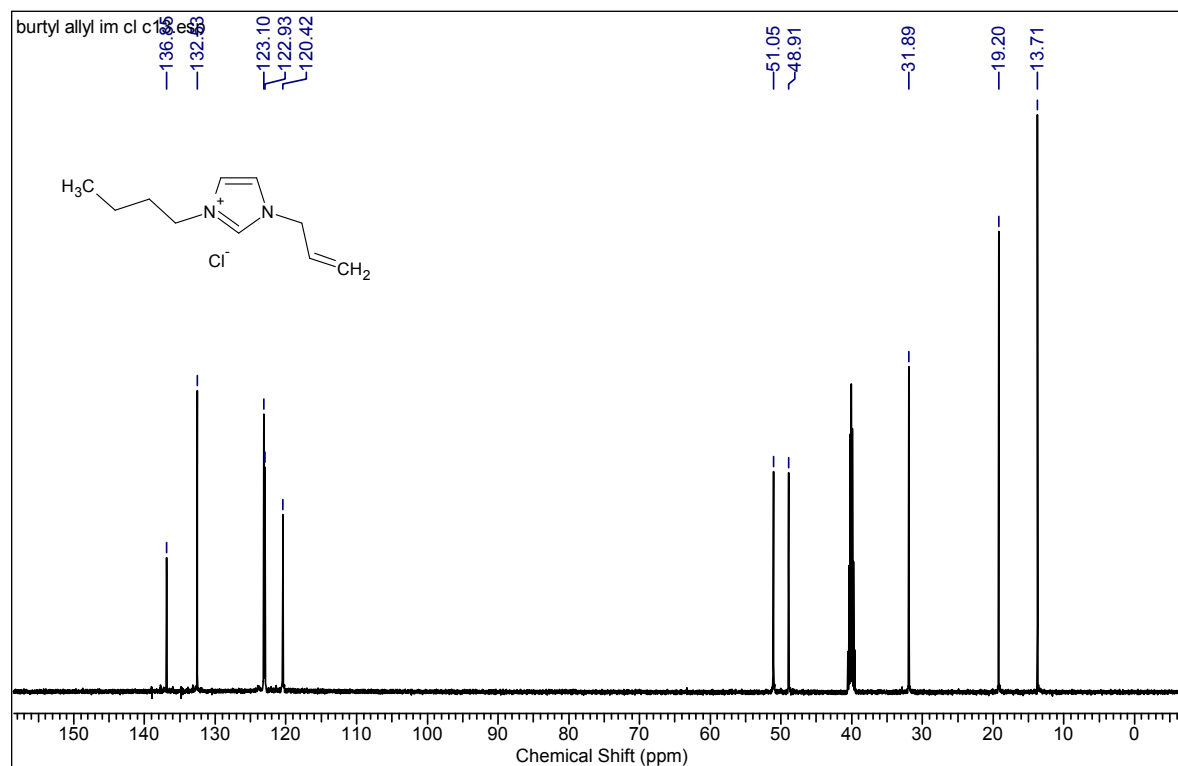


Figure SI-A12. ^{13}C -NMR spectra of compound 6

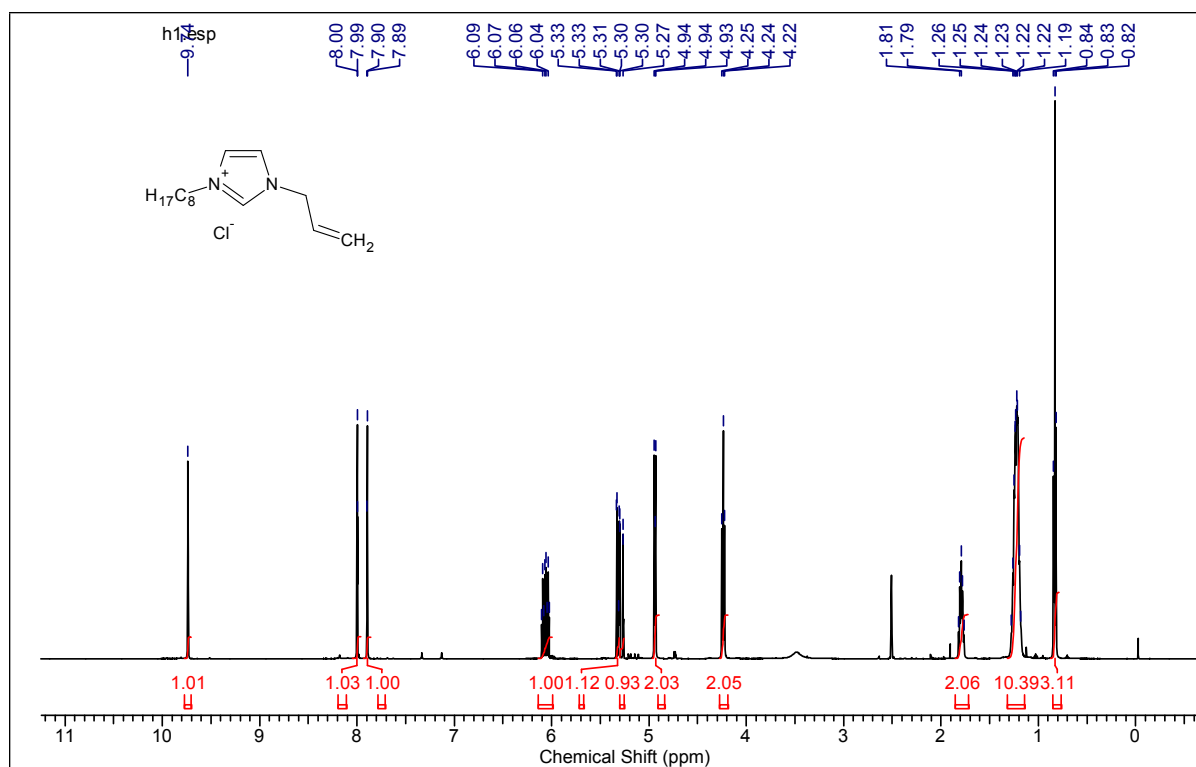


Figure SI-A13. ¹H-NMR spectra of compound 7

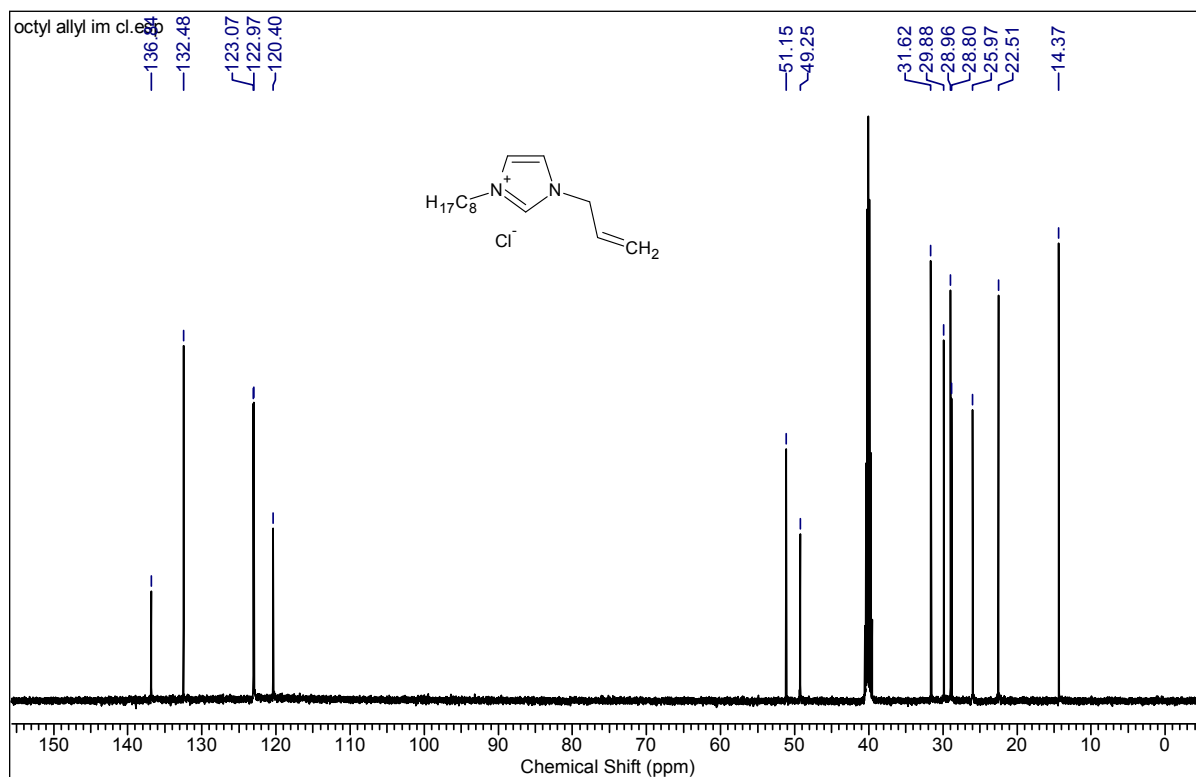


Figure SI-A14. ¹³C-NMR spectra of compound 7

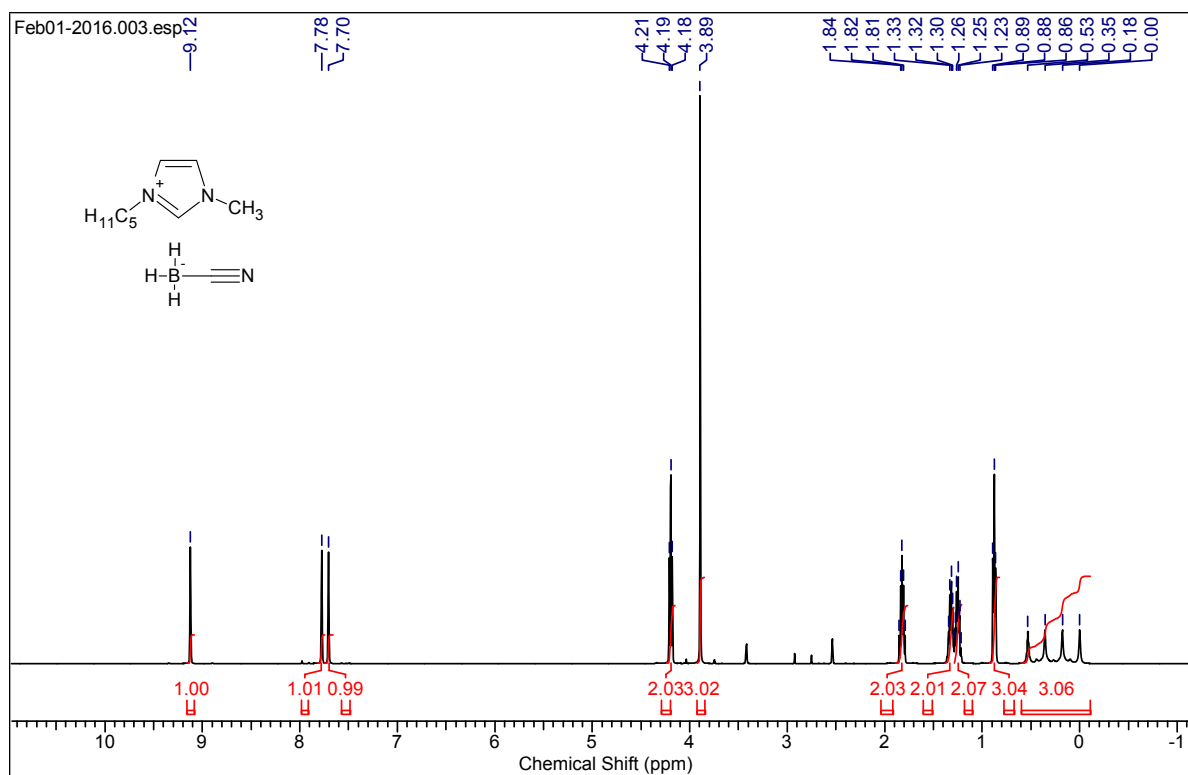


Figure SI-A15. ^1H -NMR spectra of compound 8

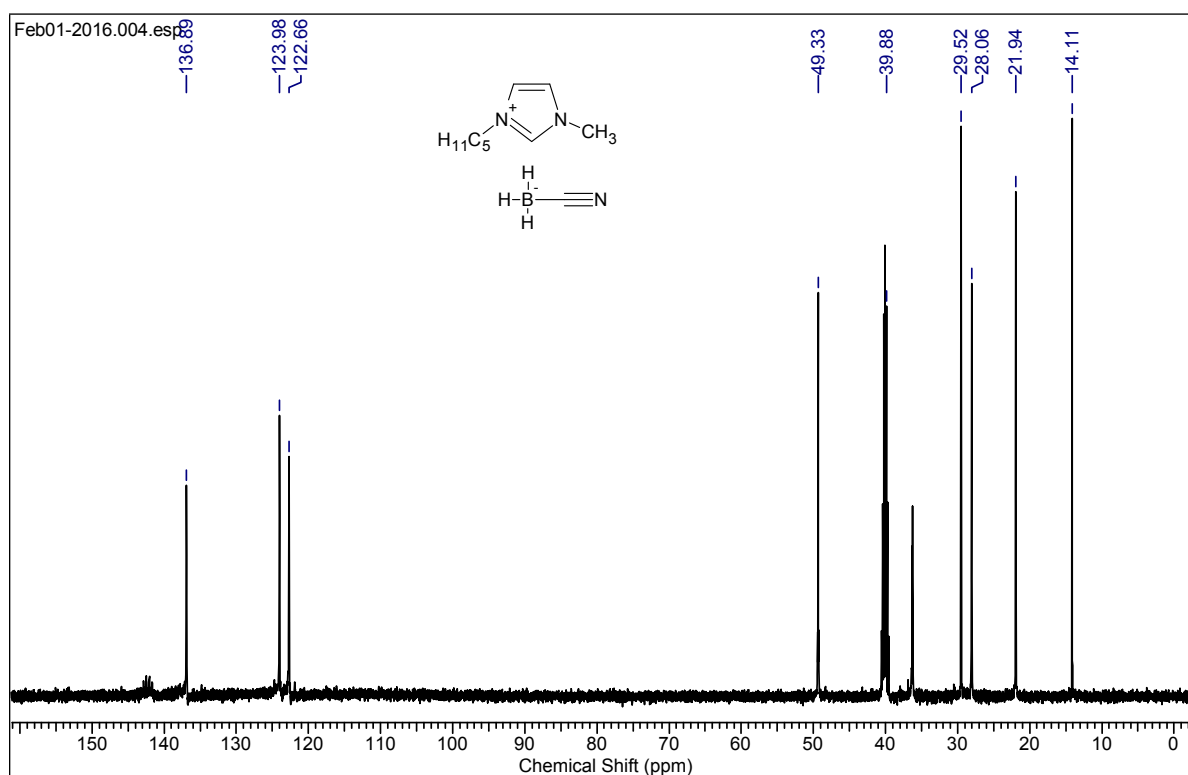


Figure SI-A16. ^{13}C -NMR spectra of compound 8

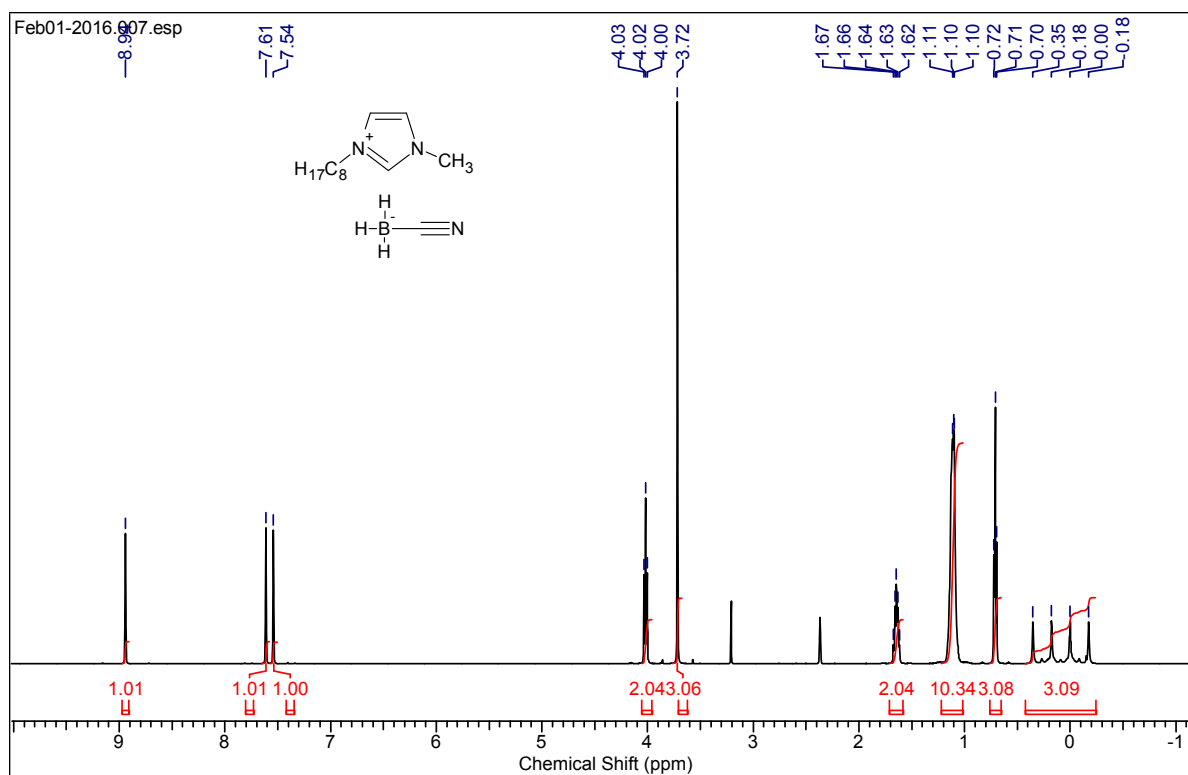


Figure SI-A17. ^1H -NMR spectra of compound 9

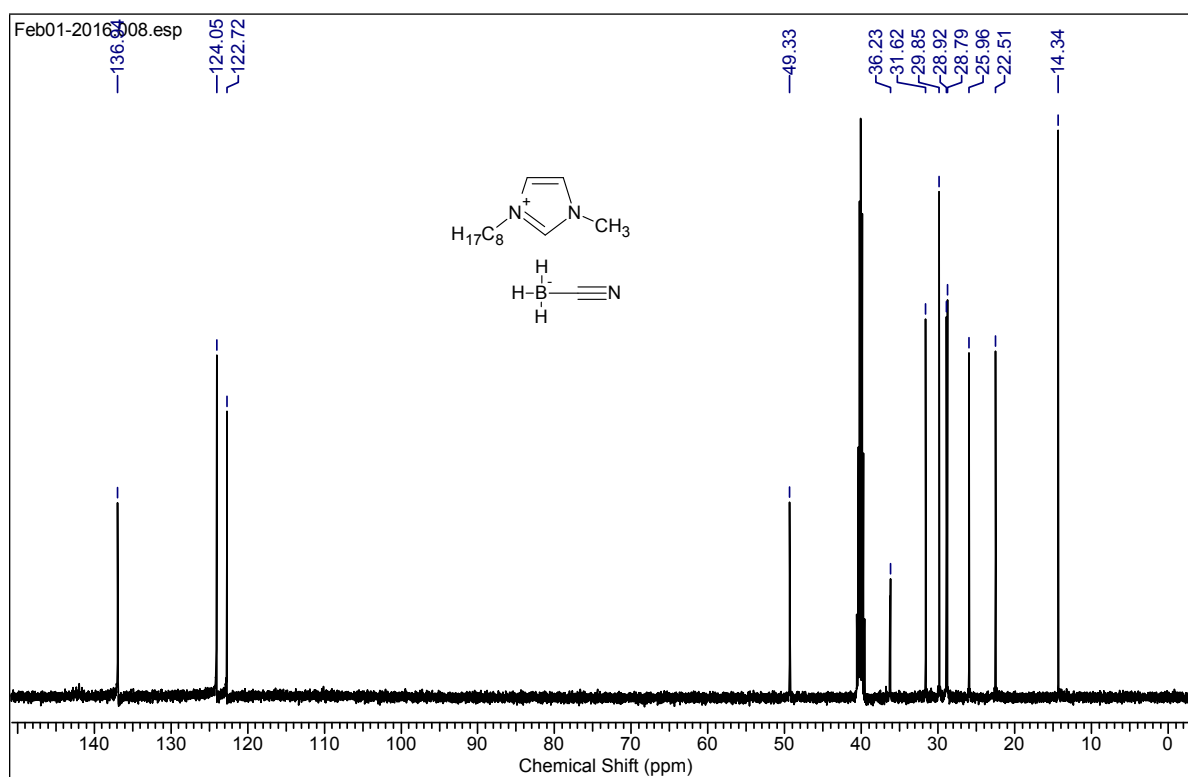


Figure SI-A18. ^{13}C -NMR spectra of compound 9

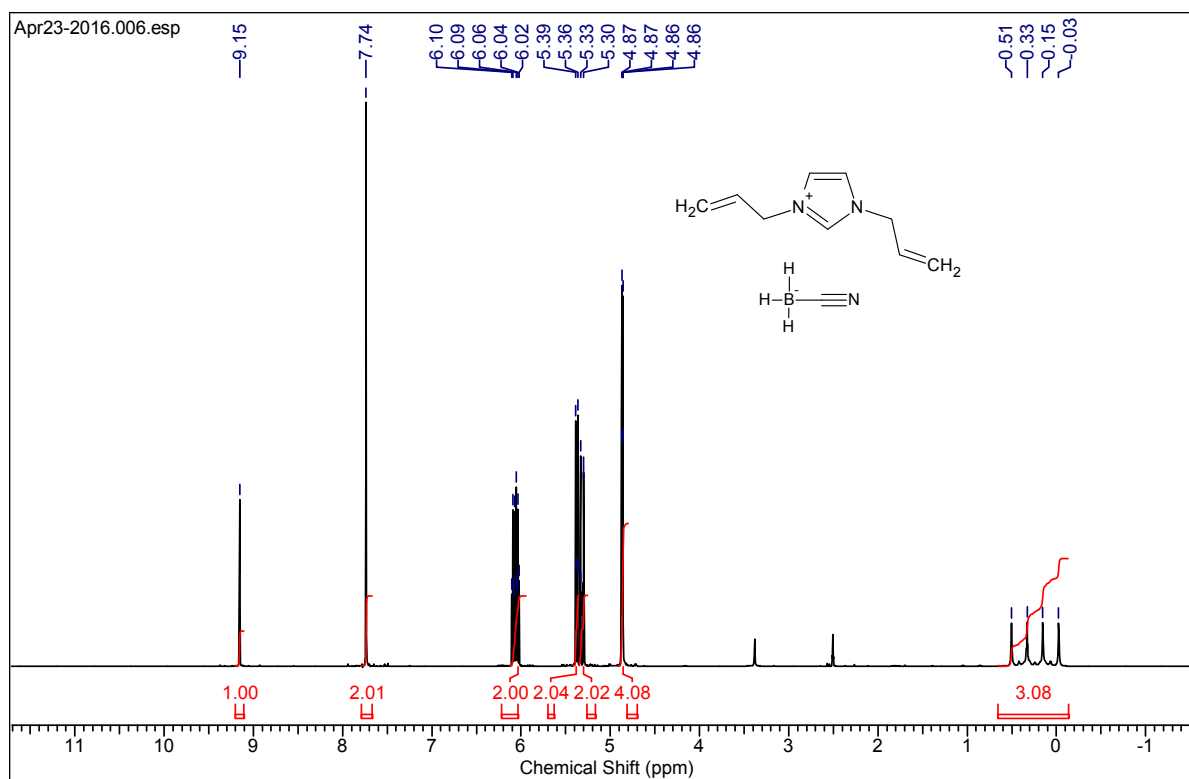


Figure SI-A19. ^1H -NMR spectra of compound **10**

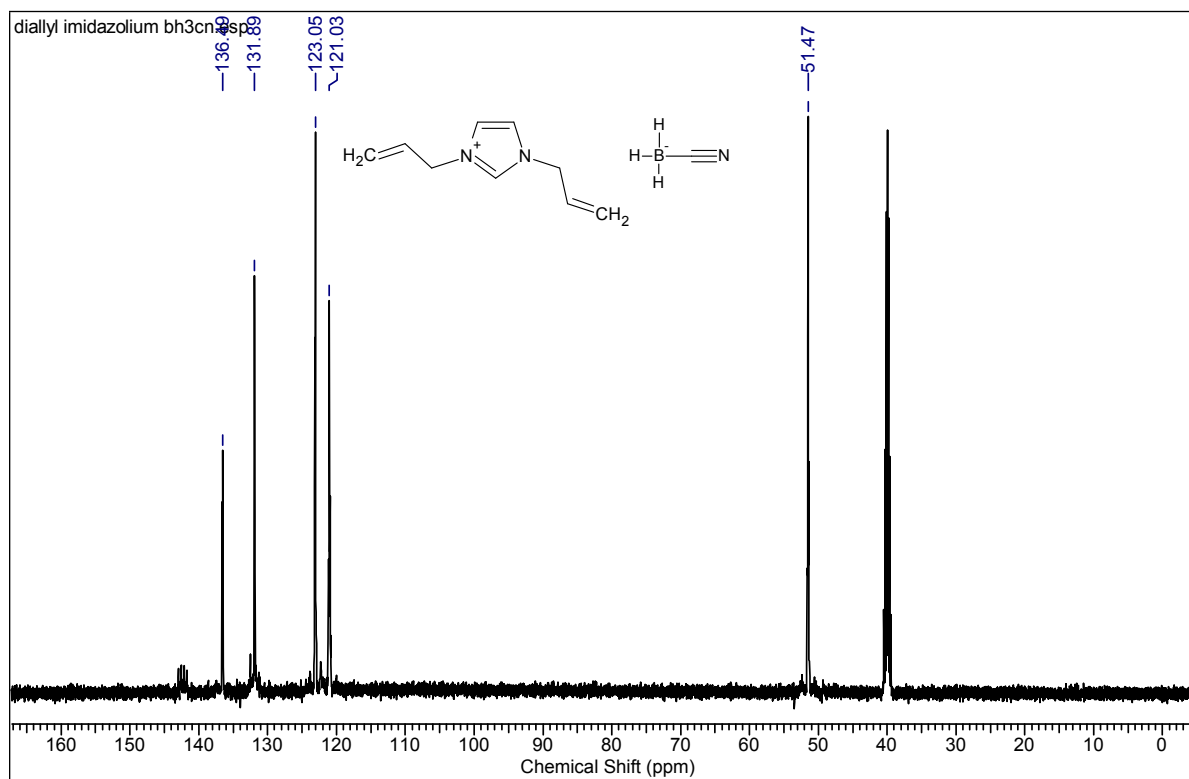


Figure SI-A20. ^{13}C -NMR spectra of compound **10**

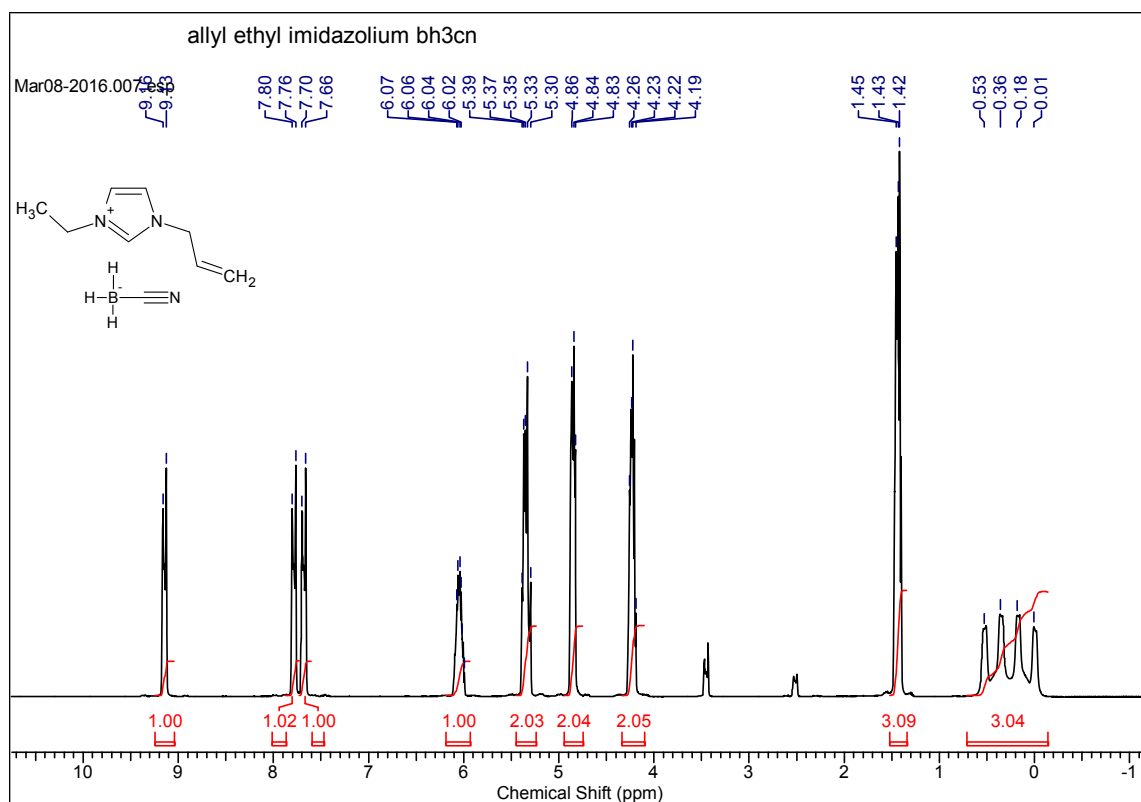


Figure SI-A21. ^1H -NMR spectra of compound 11

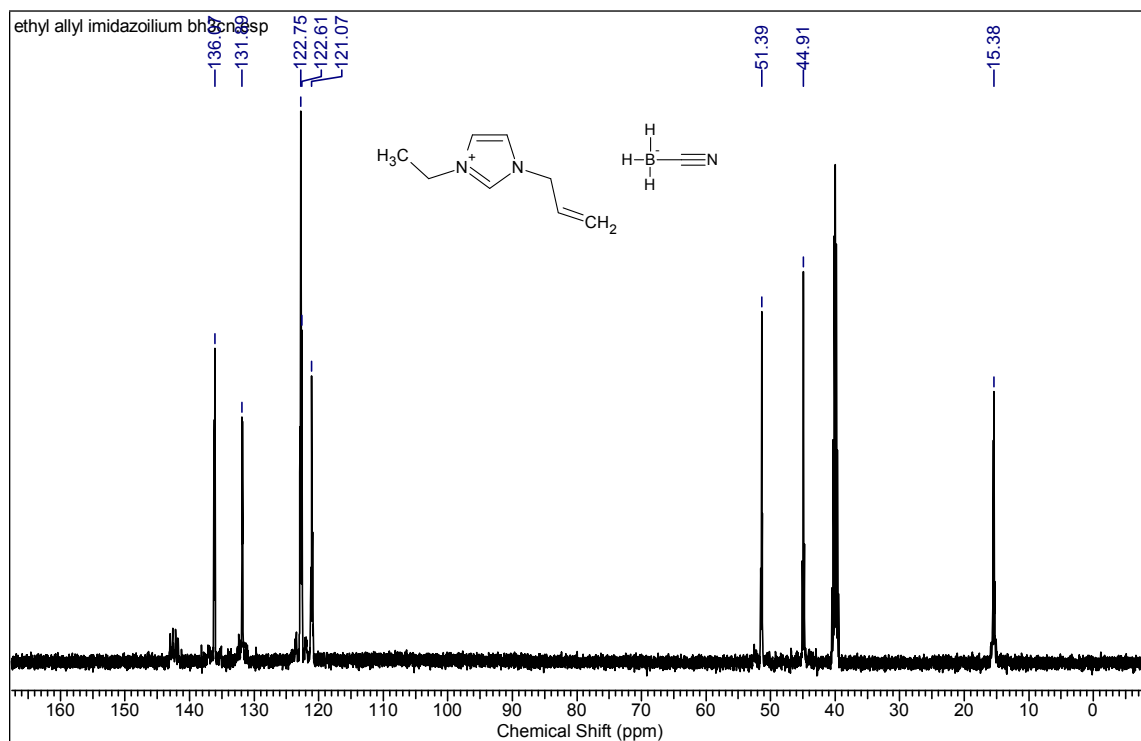


Figure SI-A22. ^{13}C -NMR spectra of compound 11

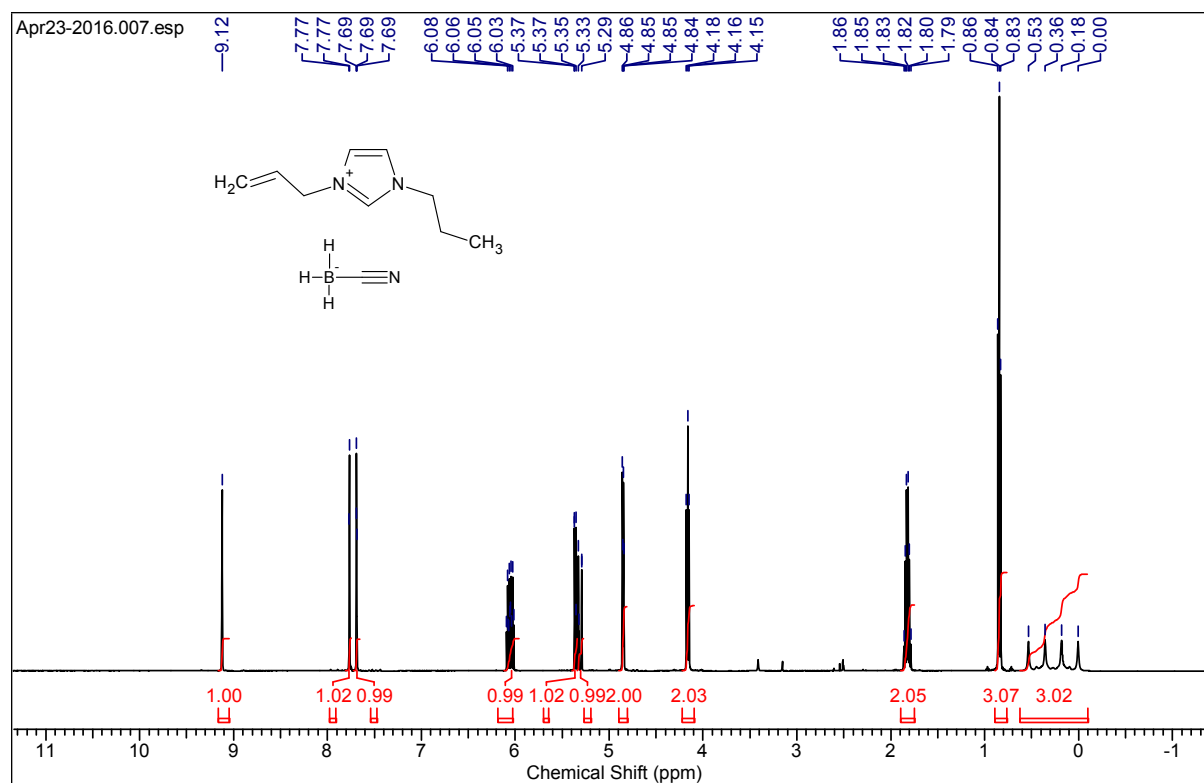


Figure SI-A23. ^1H -NMR spectra of compound 12

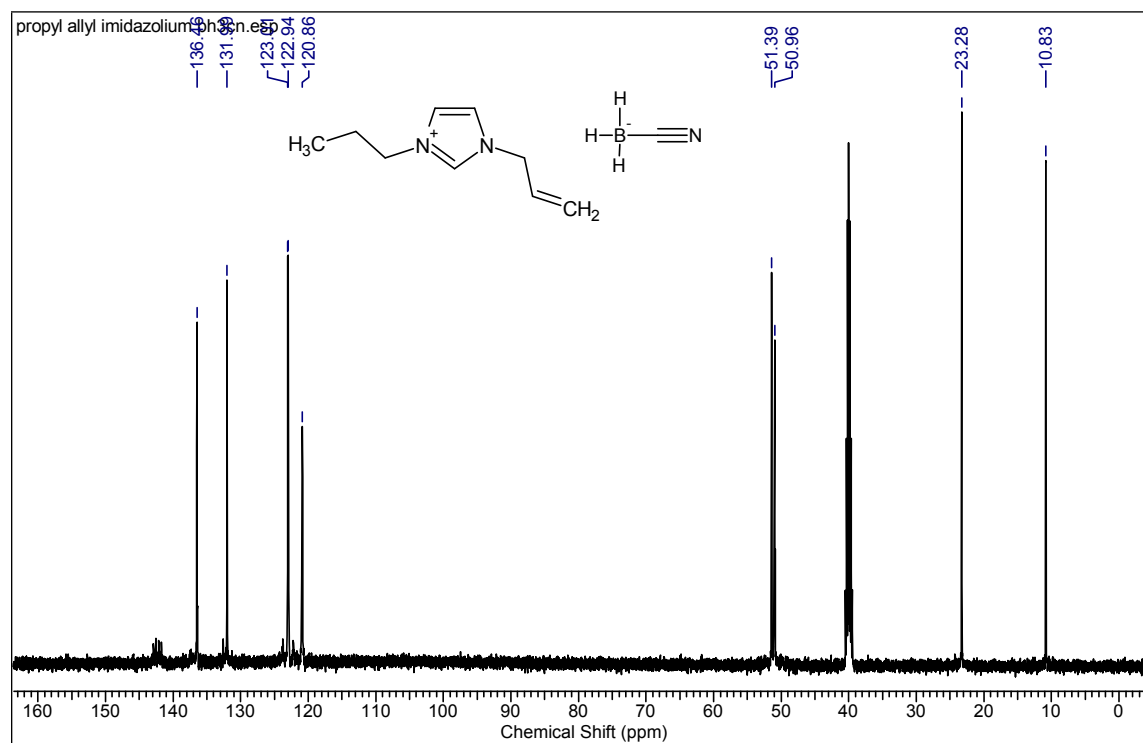


Figure SI-A24. ^{13}C -NMR spectra of compound 12

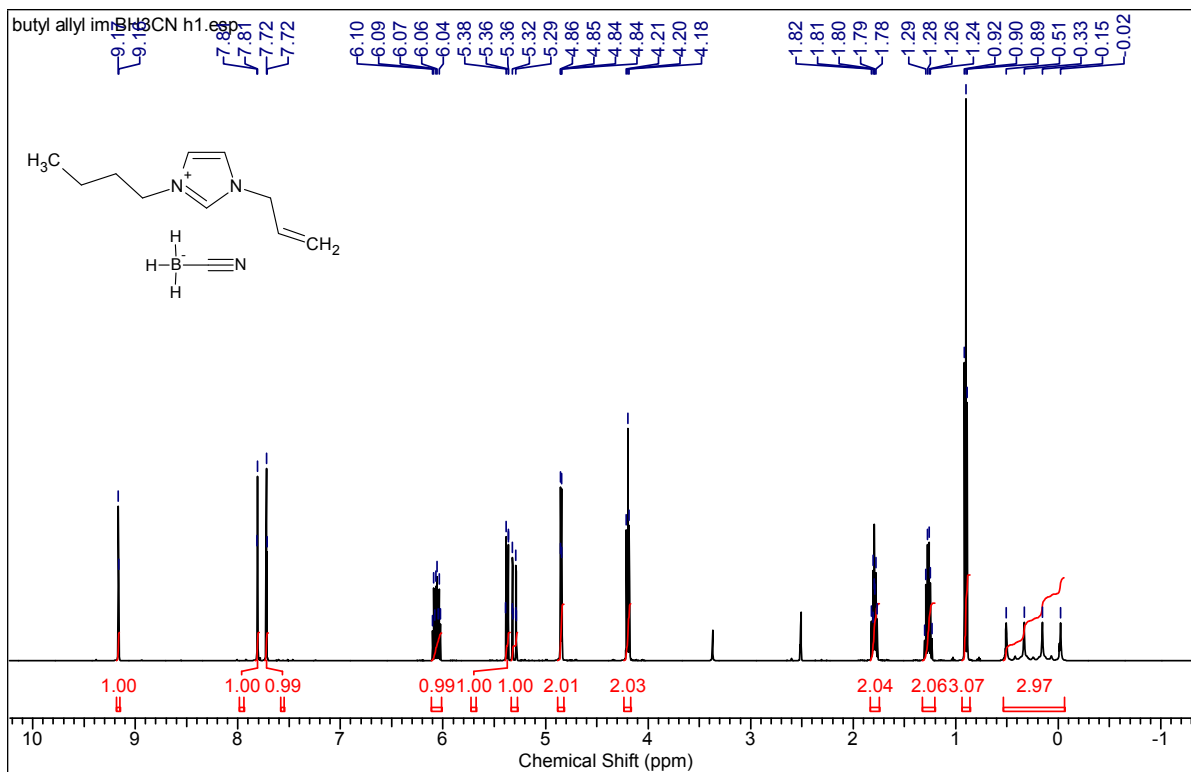


Figure SI-A25. ^1H -NMR spectra of compound 13

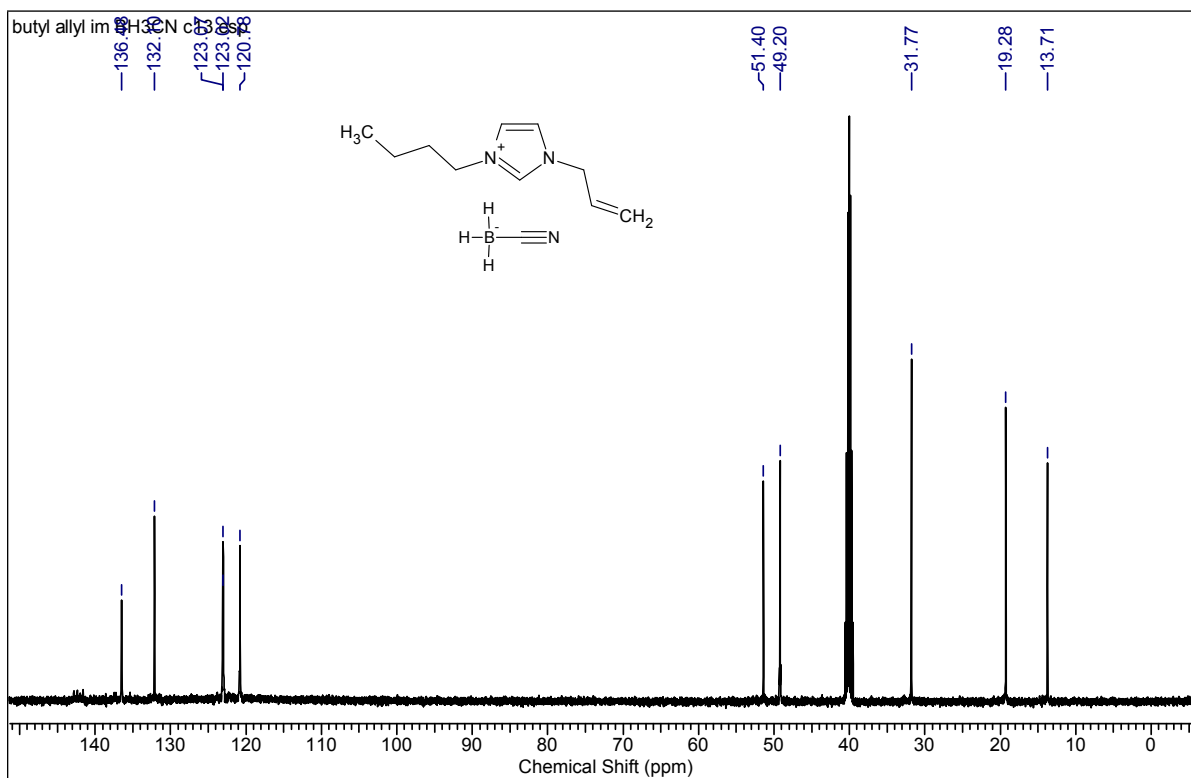


Figure SI-A26. ^{13}C -NMR spectra of compound 13

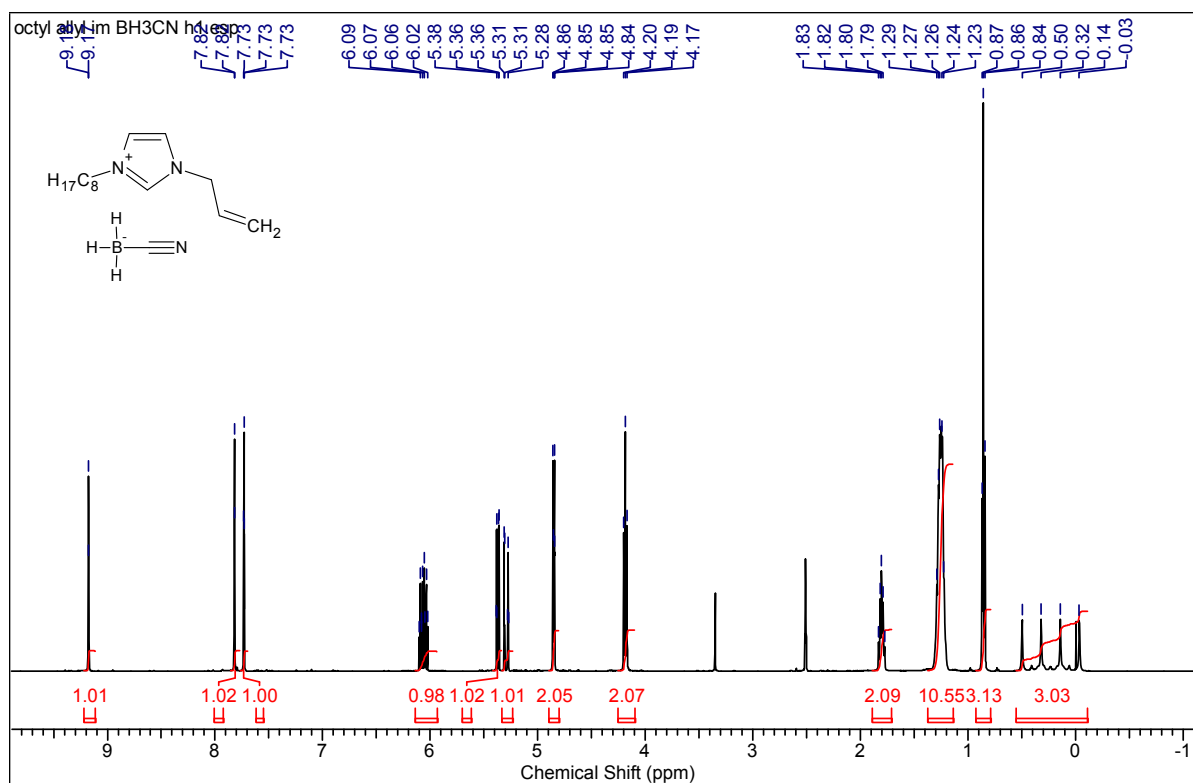


Figure SI-A27. ¹H-NMR spectra of compound 14

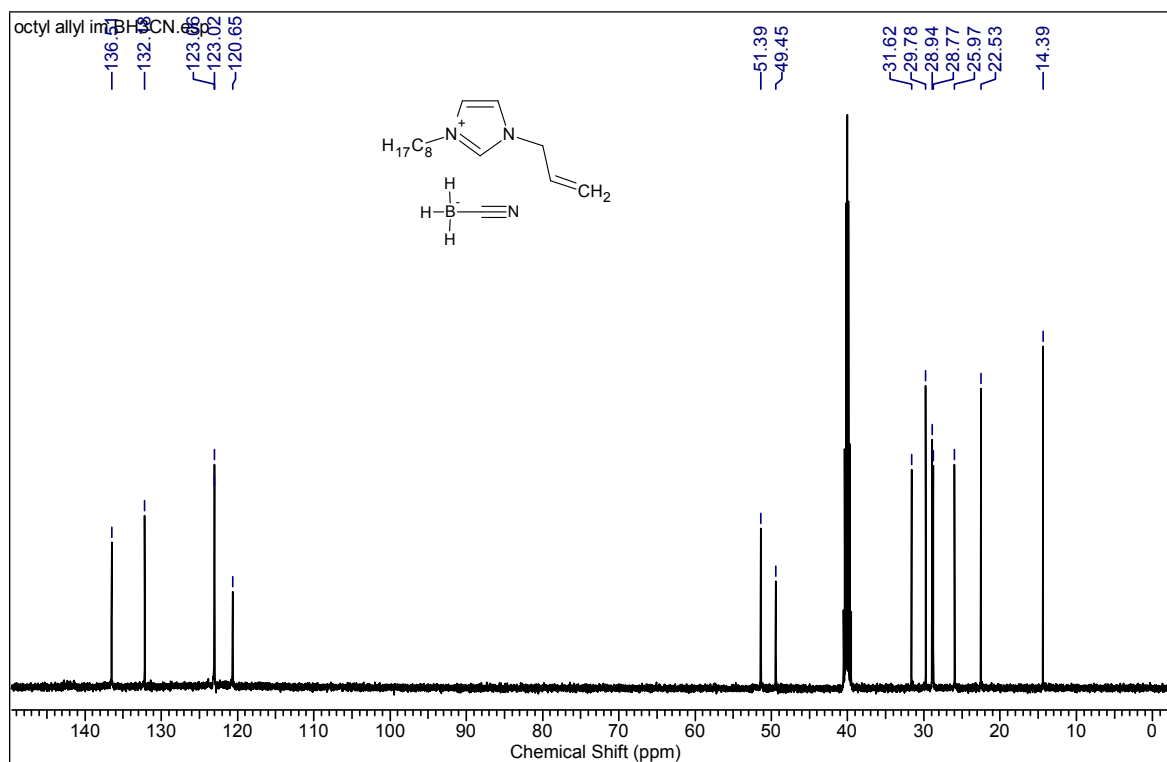


Figure SI-A28. ¹³C-NMR spectra of compound 14

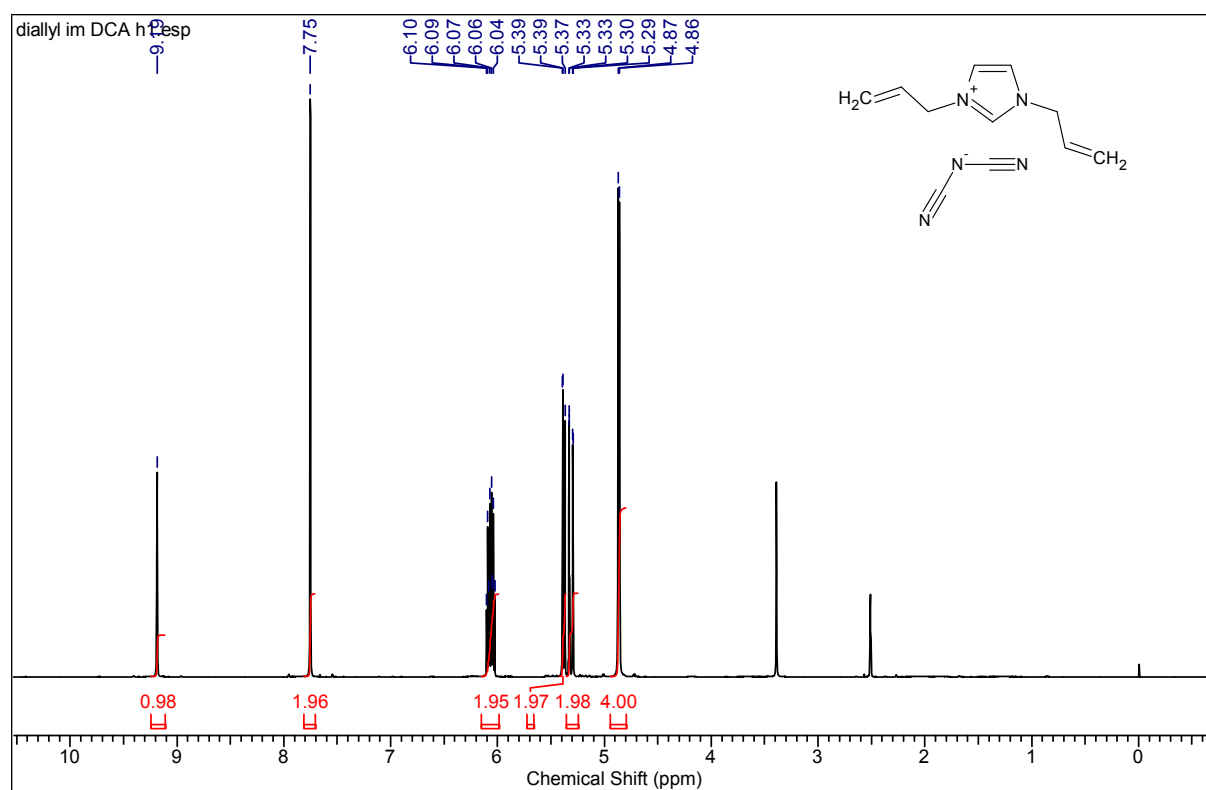


Figure SI-A29. ^1H -NMR spectra of compound **15**

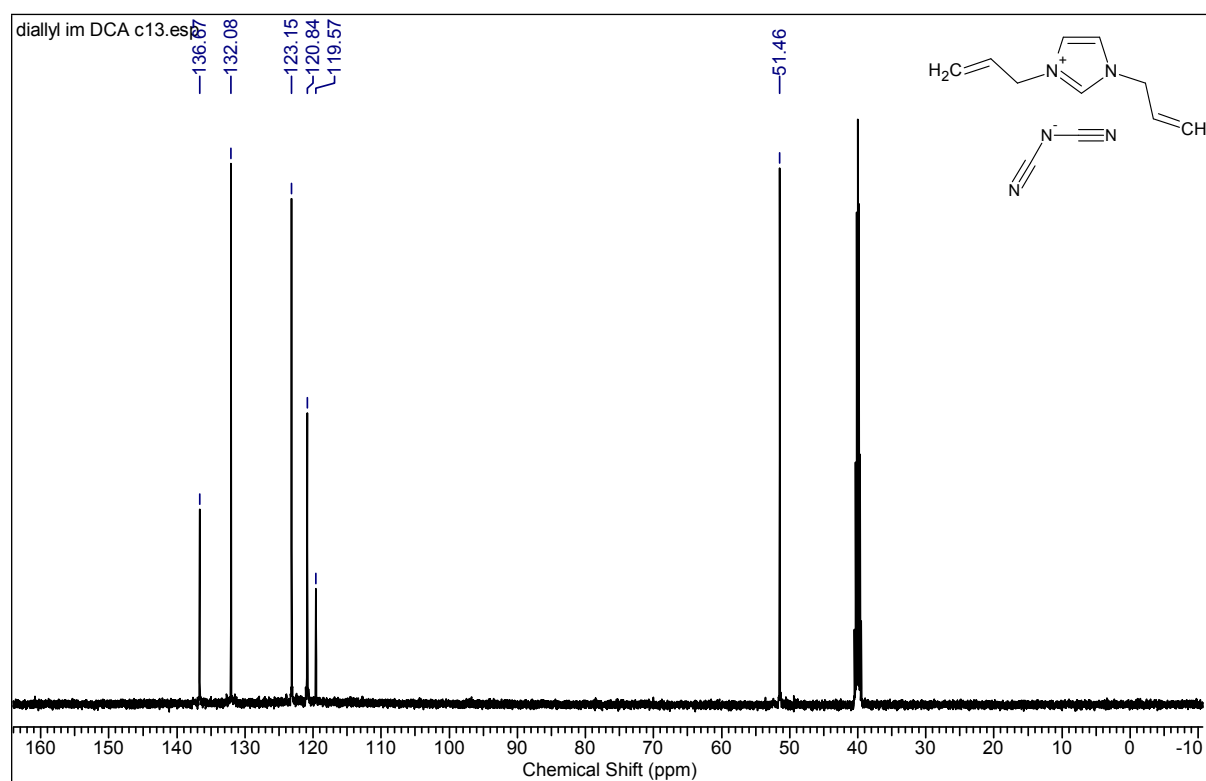


Figure SI-A30. ^{13}C -NMR spectra of compound **15**

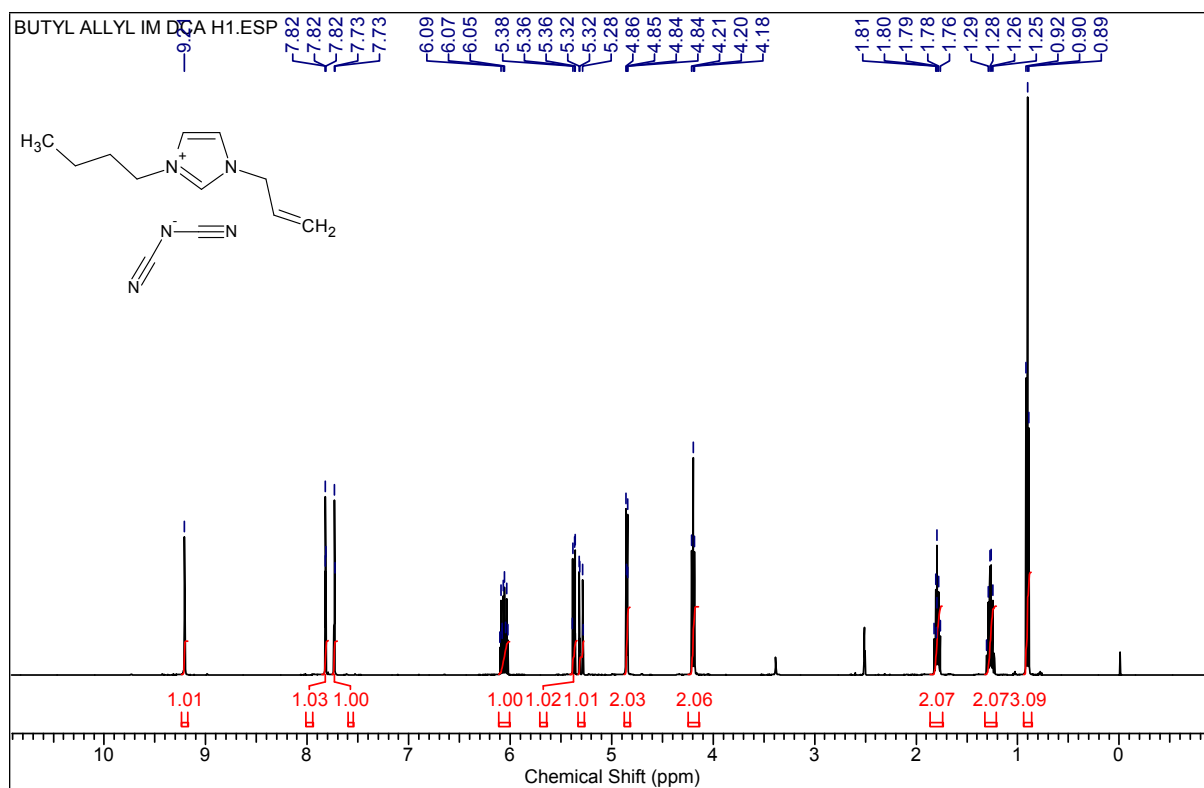


Figure SI-A31. ¹H-NMR spectra of compound 16

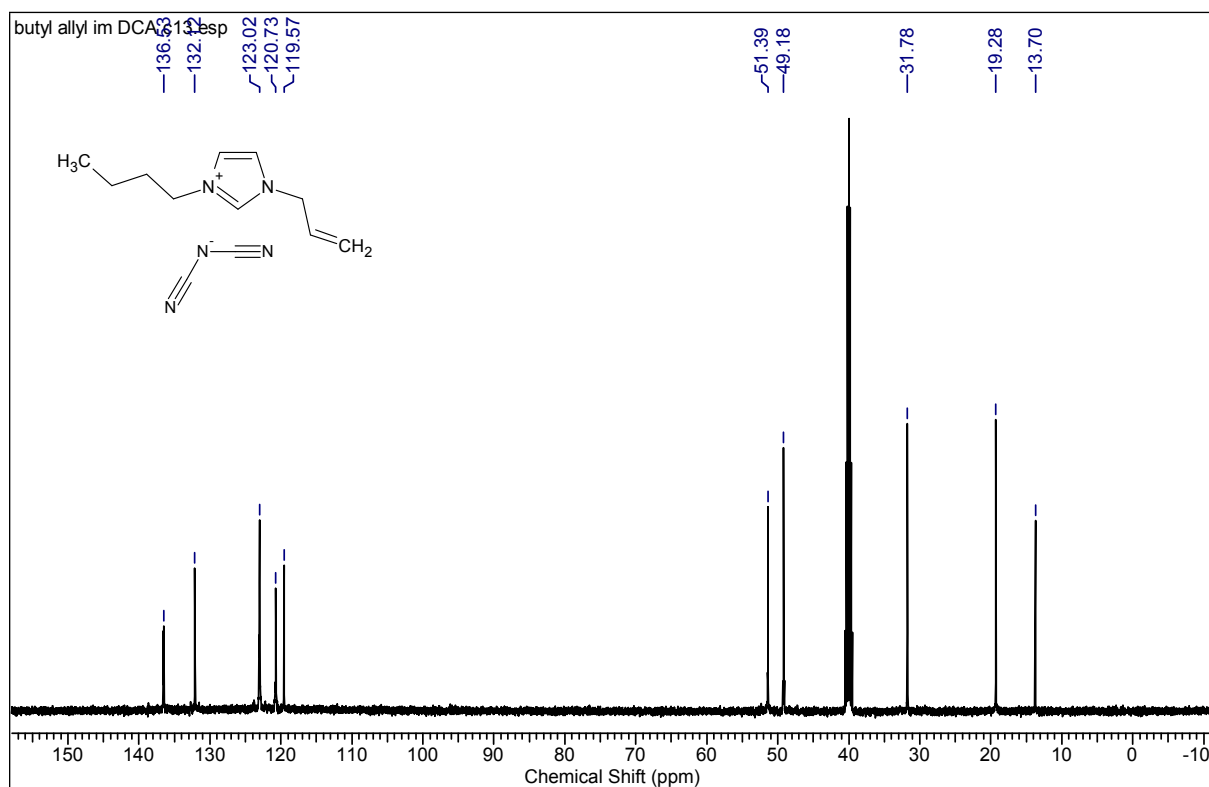


Figure SI-A32. ¹³C-NMR spectra of compound 16

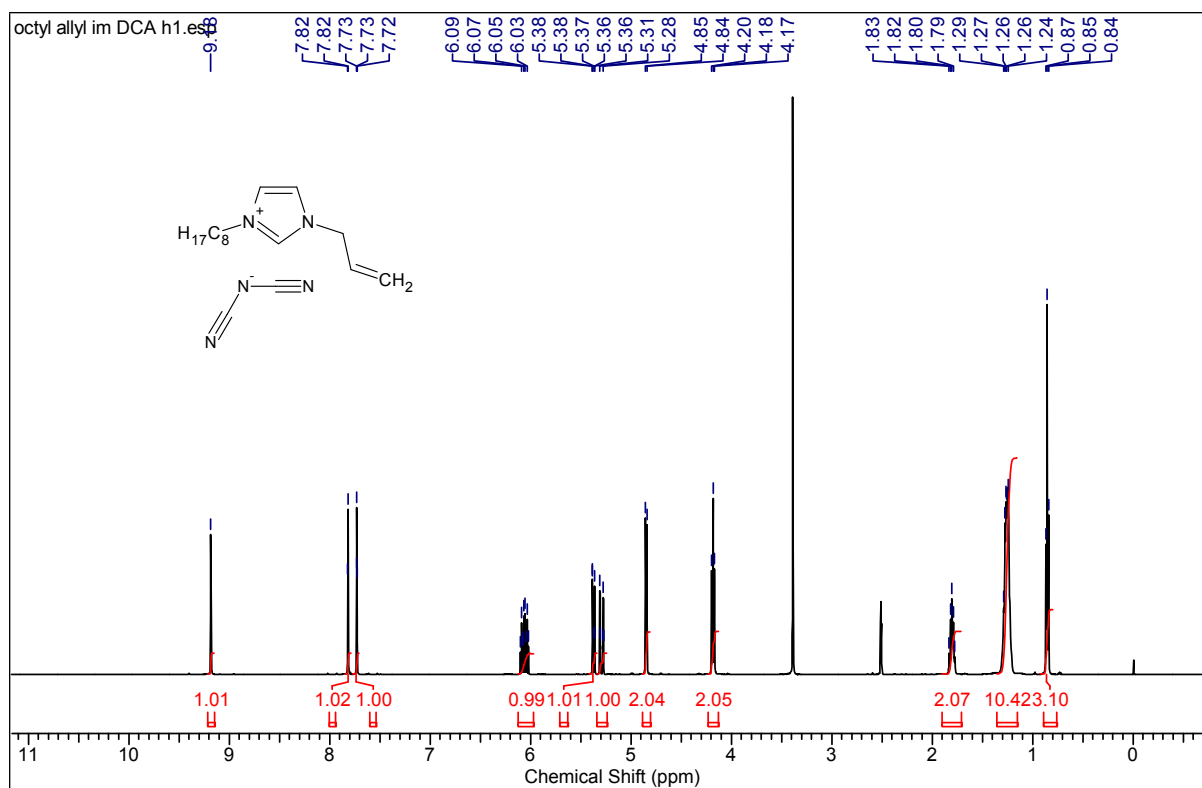


Figure SI-A33. ^1H -NMR spectra of compound 17

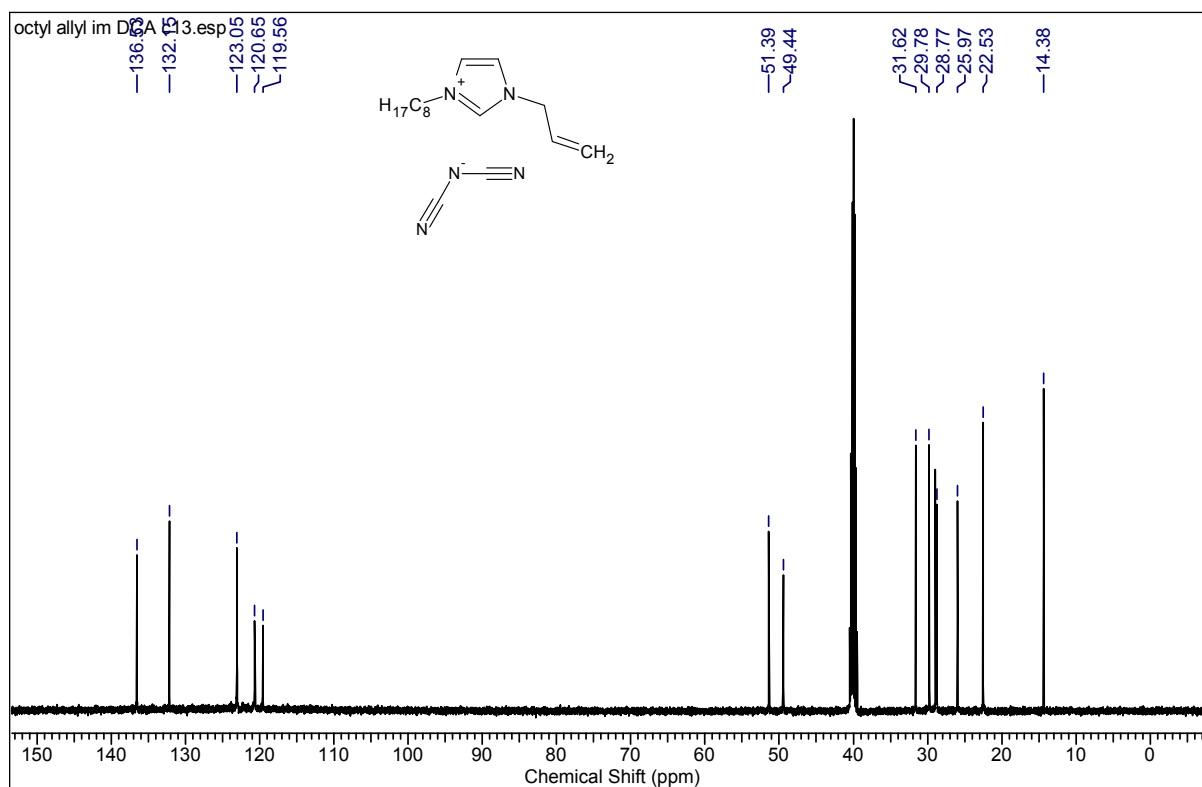


Figure SI-A34. ^{13}C -NMR spectra of compound 17

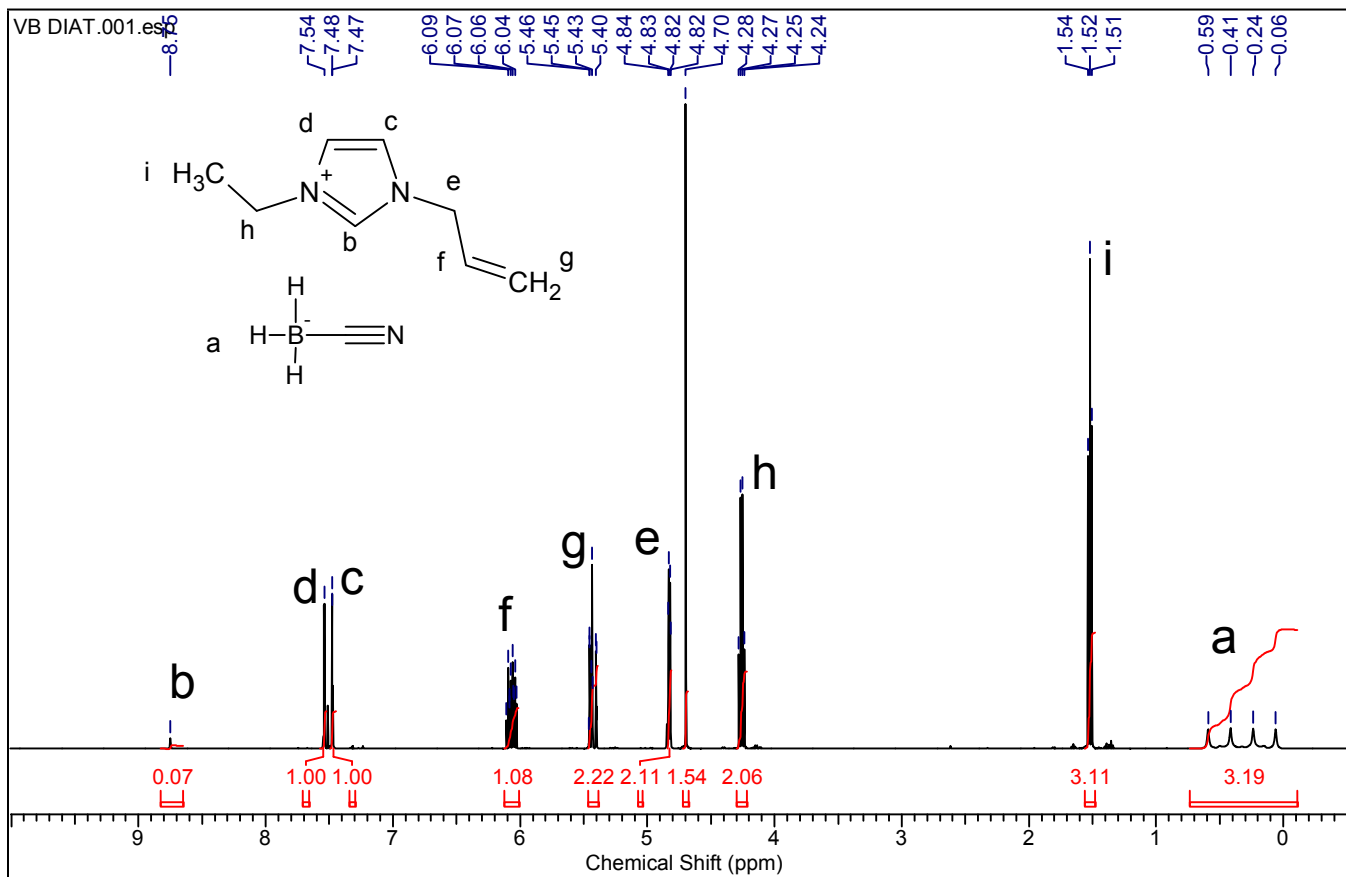


Figure SI-A35. ^1H -NMR spectra of compound **11** in D_2O

SI- B. DSC & TGA-DTA study of ionic liquids (8-17)

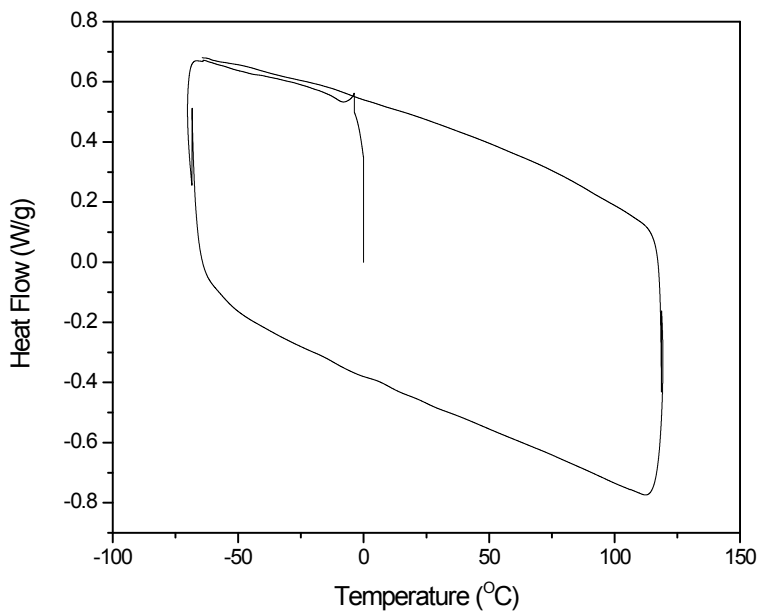


Figure SI-B1. DSC of compound 8

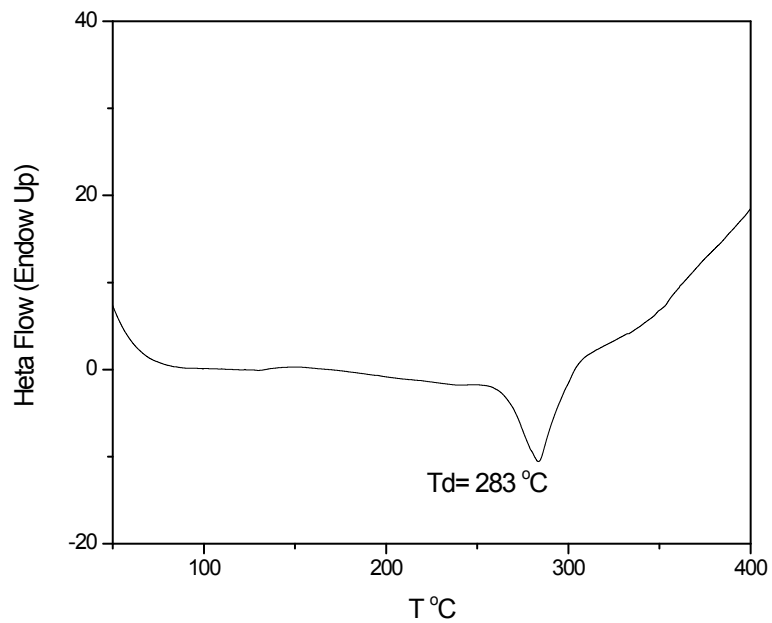


Figure SI-B2. DTA of compound **8**

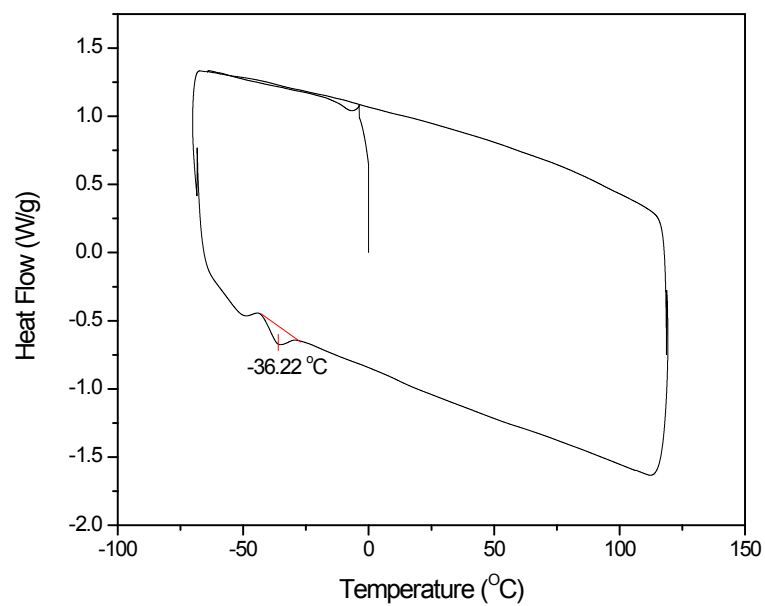


Figure SI-B3. DSC of compound **9**

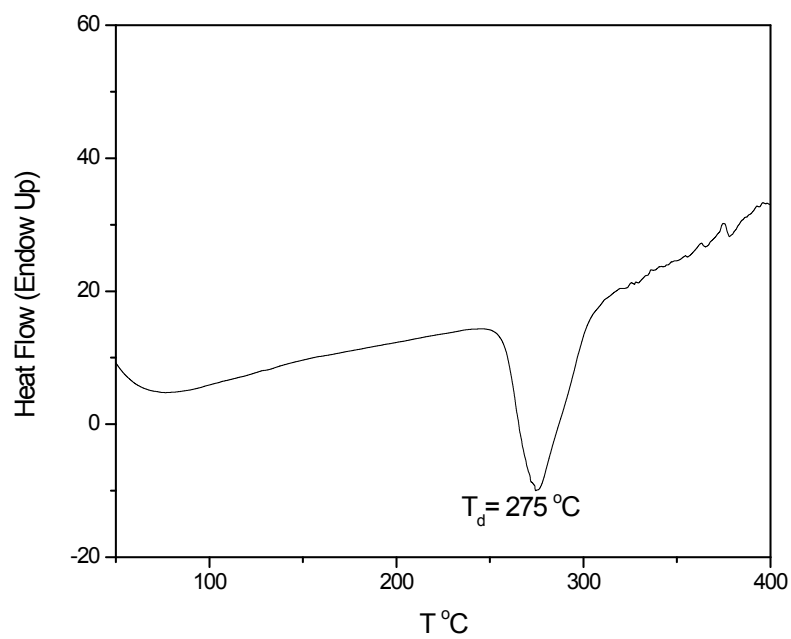


Figure SI-B4. DTA of compound **9**

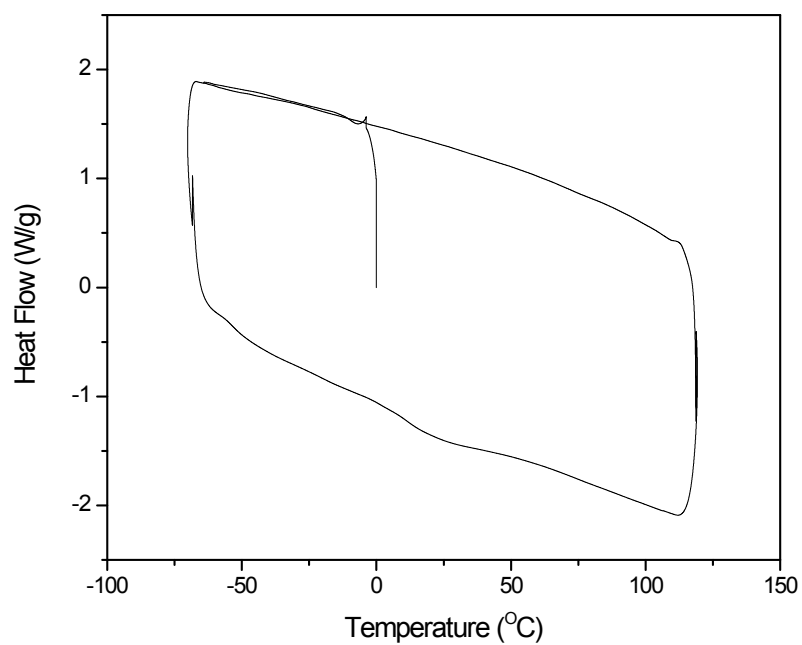


Figure SI-B5. DSC of compound **10**

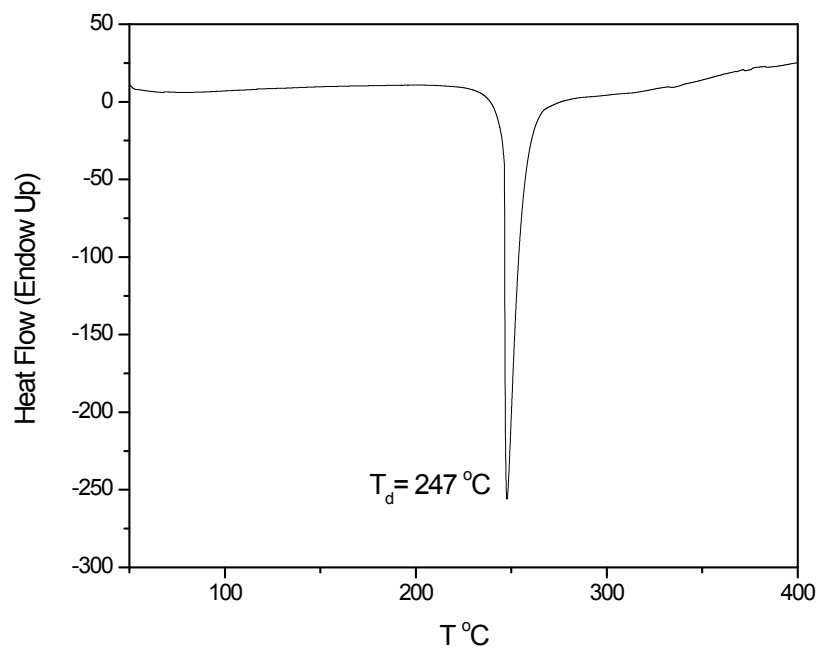


Figure SI-B6. DTA of compound **10**

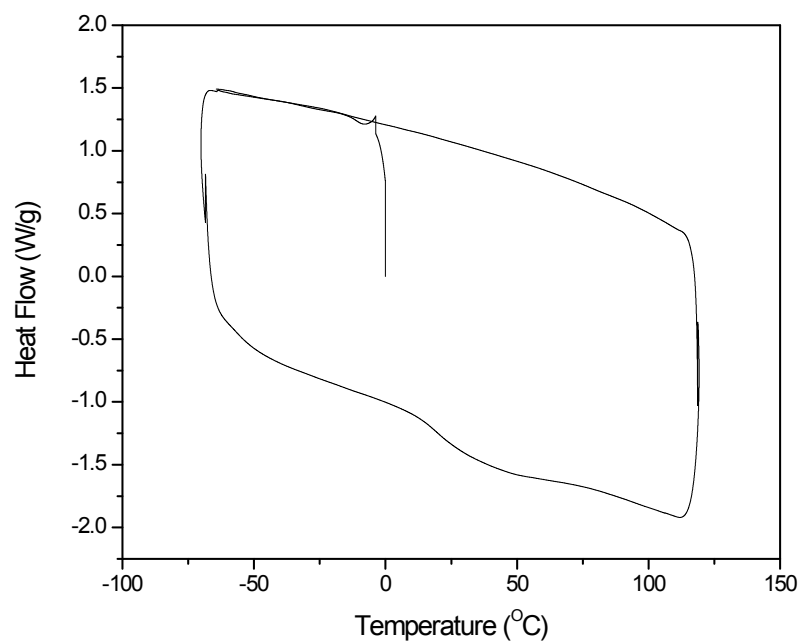


Figure SI-B7. DSC of compound 11

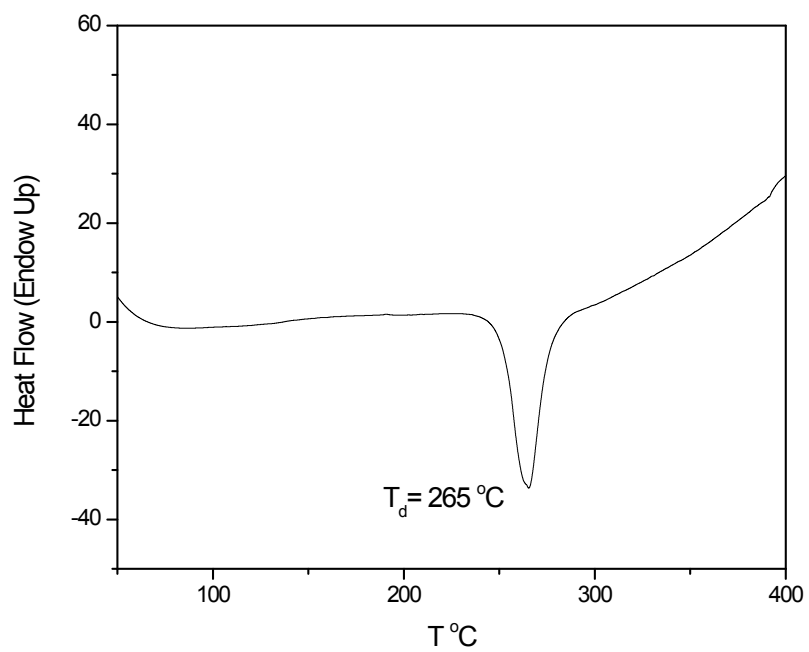


Figure SI-B8. DTA of compound 11

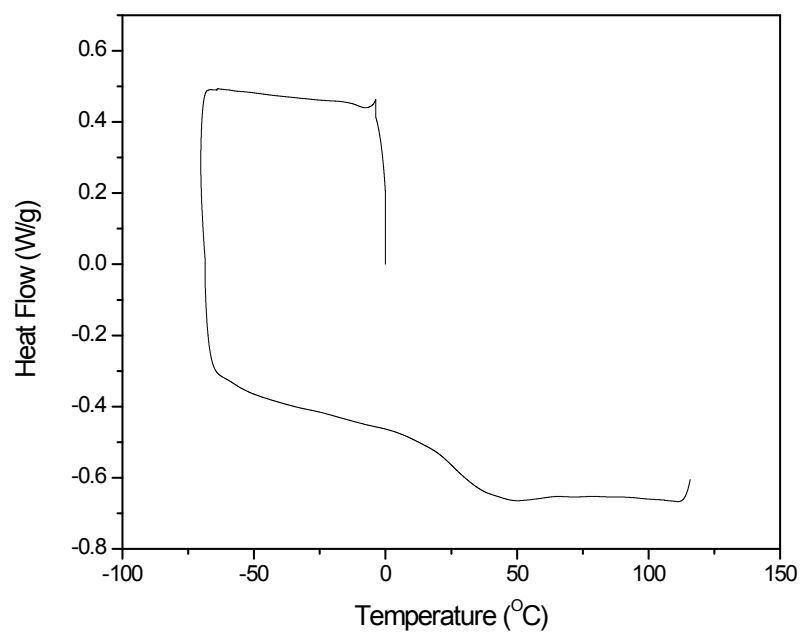


Figure SI-B9. DSC of compound **12**

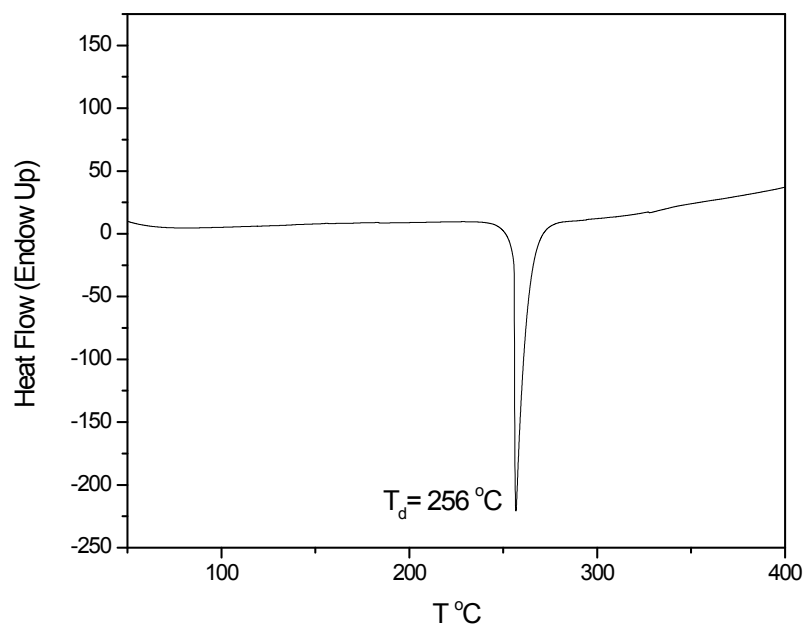


Figure SI-B10. DTA of compound **12**

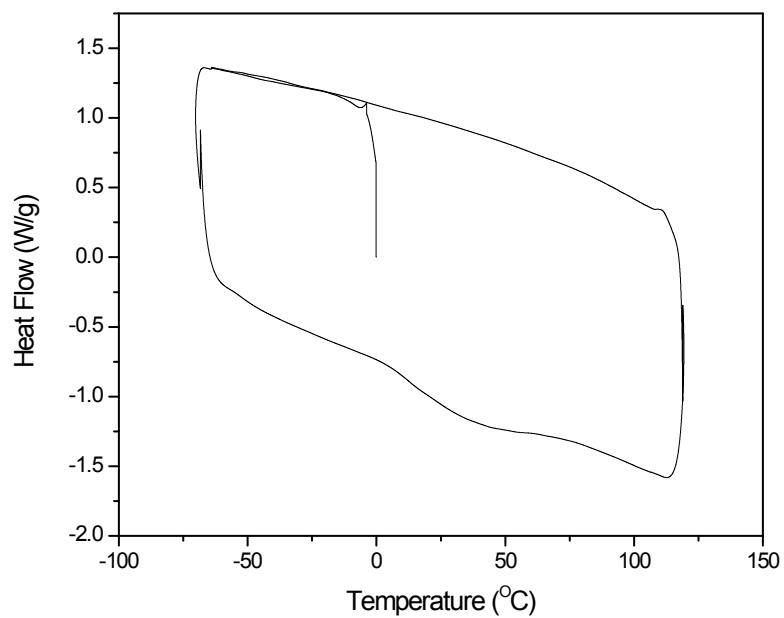


Figure SI-B11. DSC of compound 13

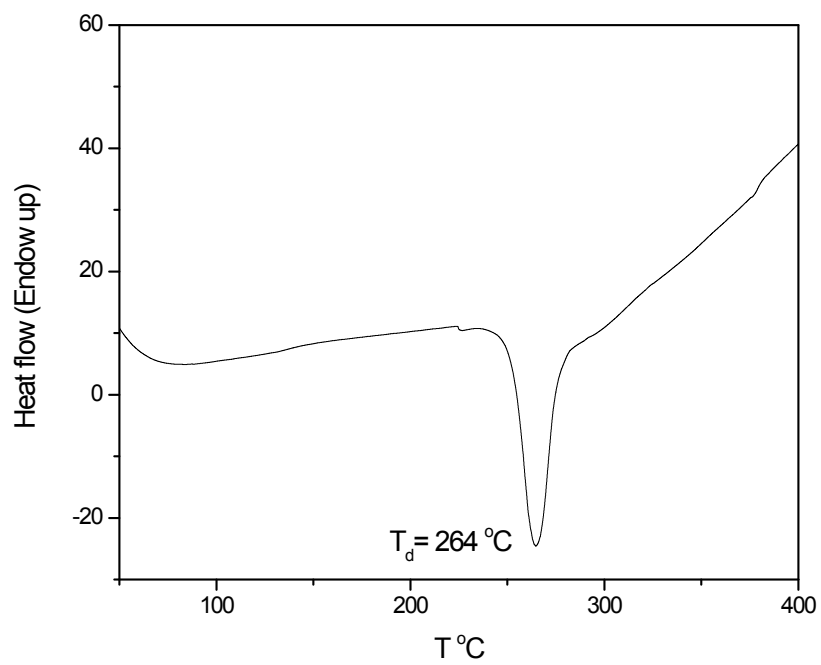


Figure SI-B12. DTA of compound 13

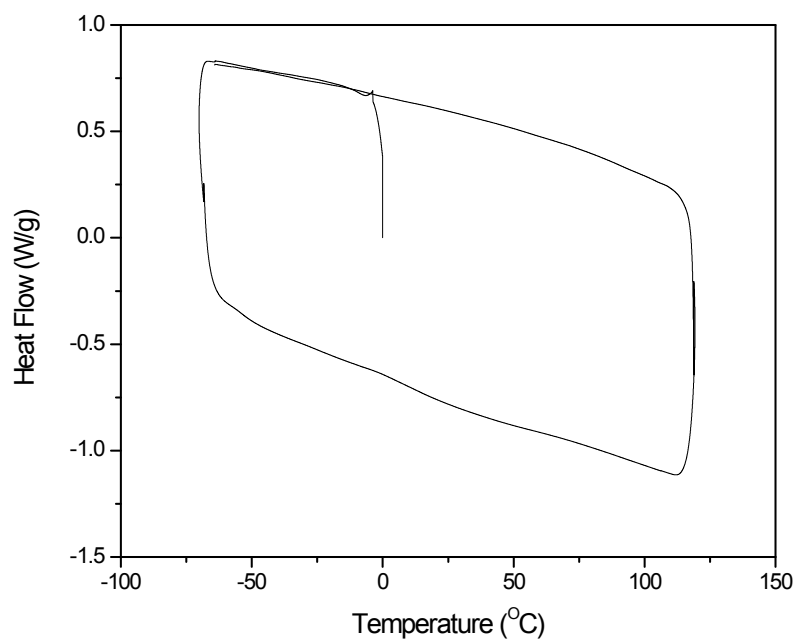


Figure SI-B13. DSC of compound **14**

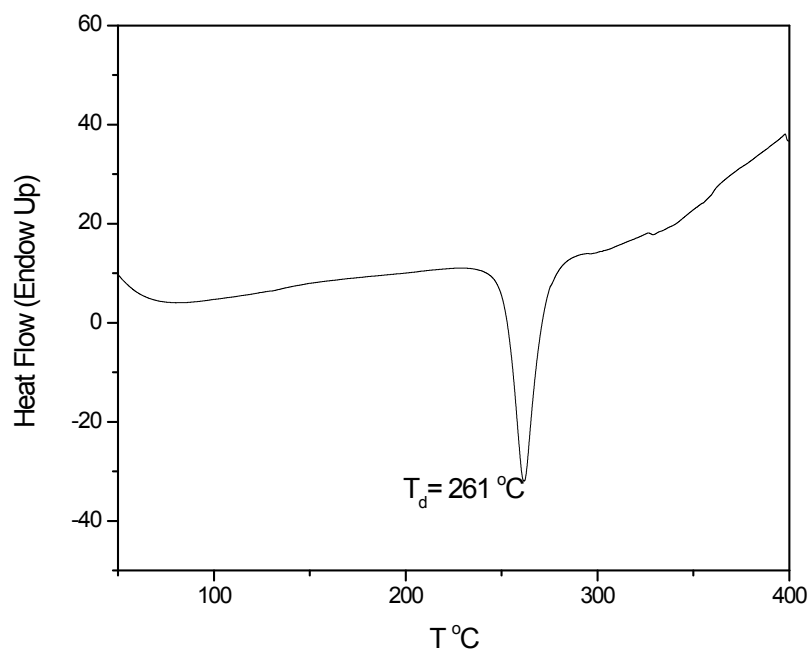


Figure SI-B14. DTA of compound **14**

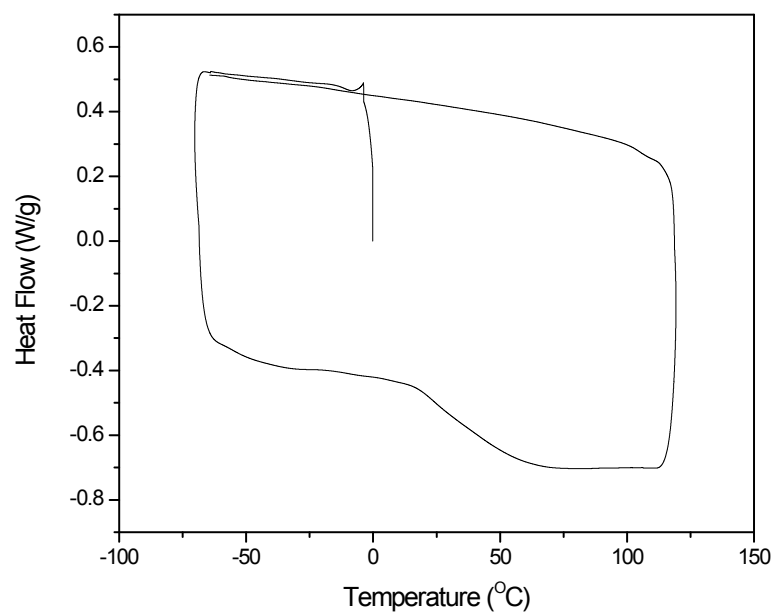


Figure SI-B15. DSC of compound **15**

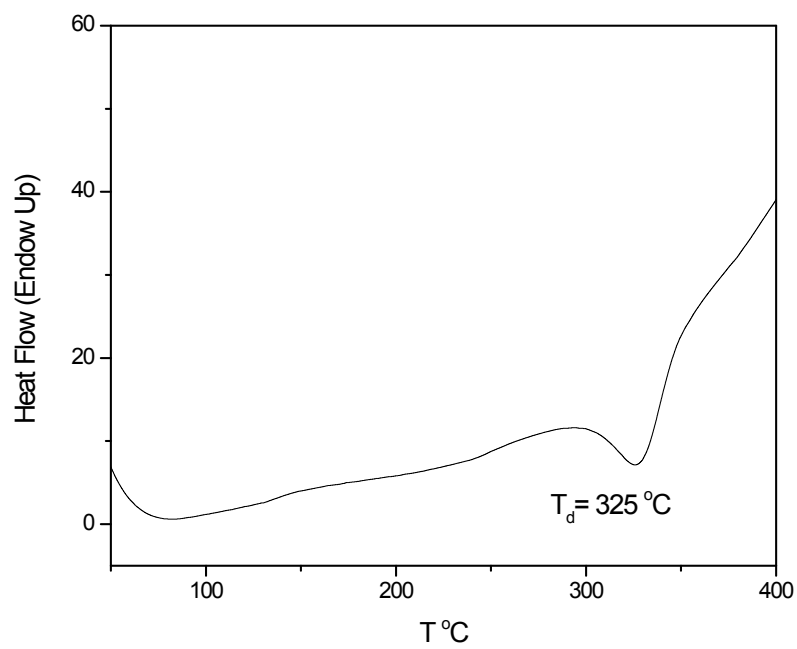


Figure SI-B16. DTA of compound **15**

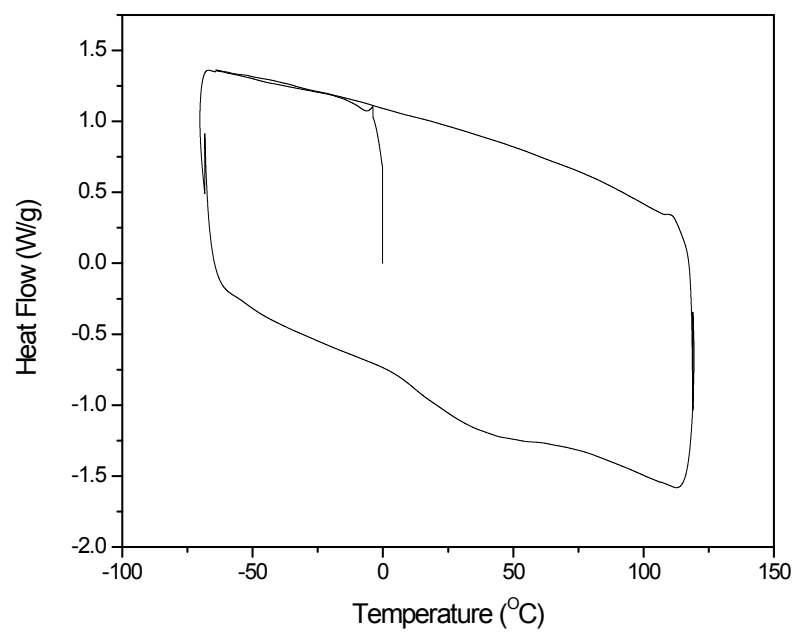


Figure SI-B17. DSC of compound **16**

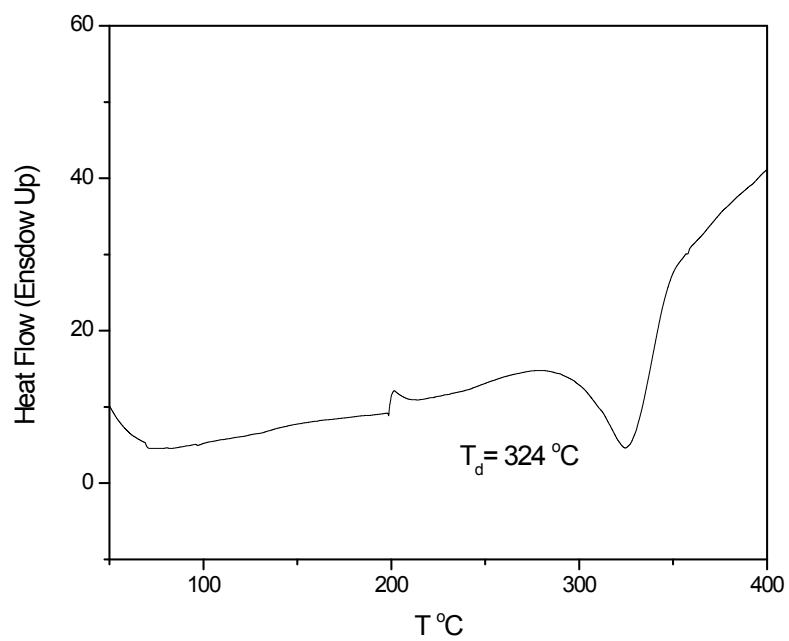


Figure SI-B18. DTA of compound **16**

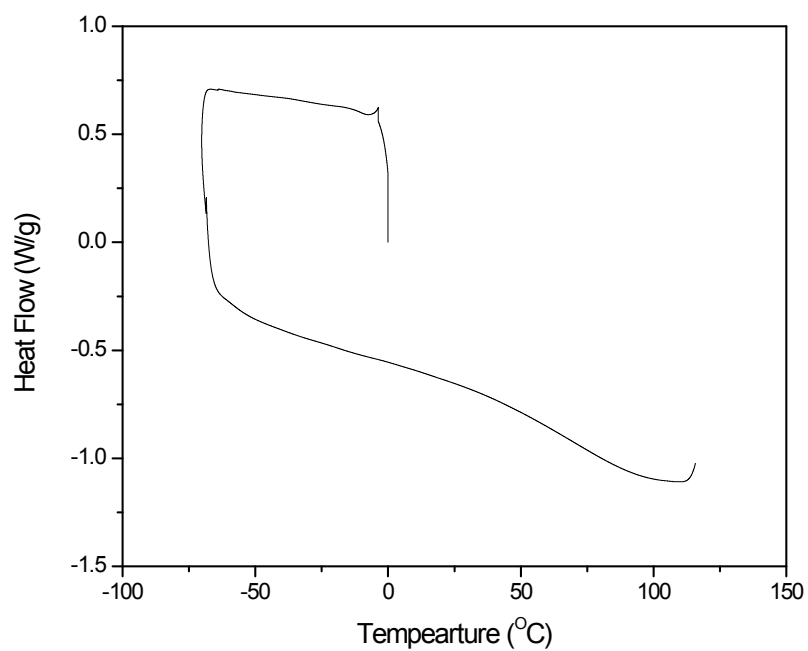


Figure SI-B19. DSC of compound **17**

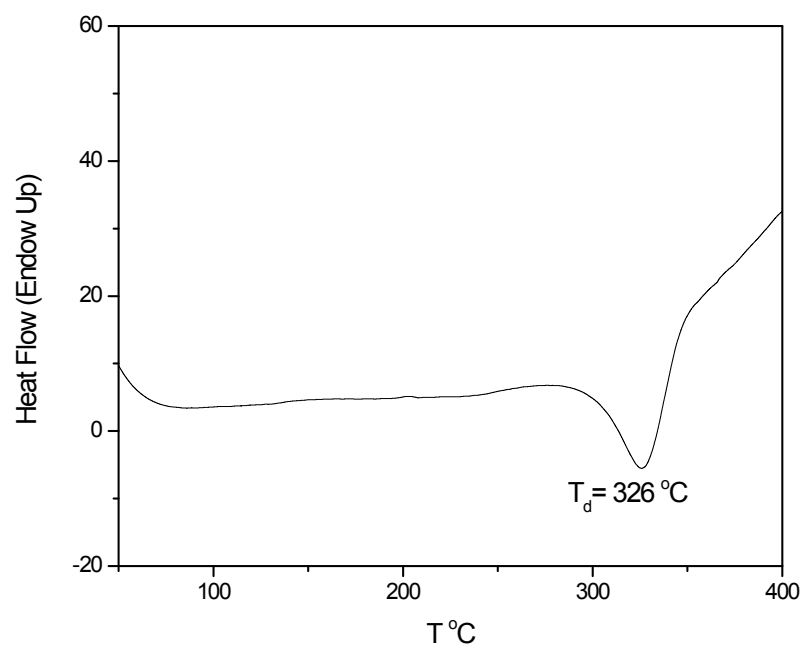
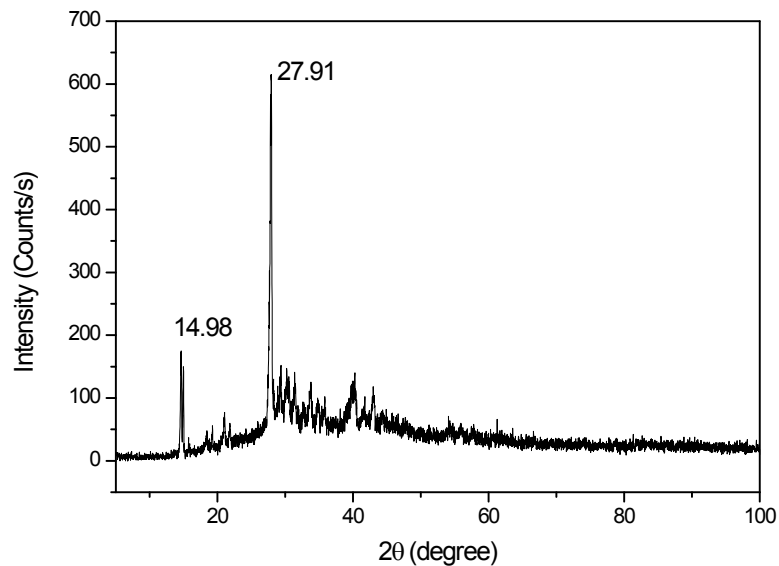


Figure SI-B20. DTA of compound **17**



SI- C. XRD graph of combustion products of ionic liquid **8**

SI- D. Hydrophobic image of ionic liquid **10**

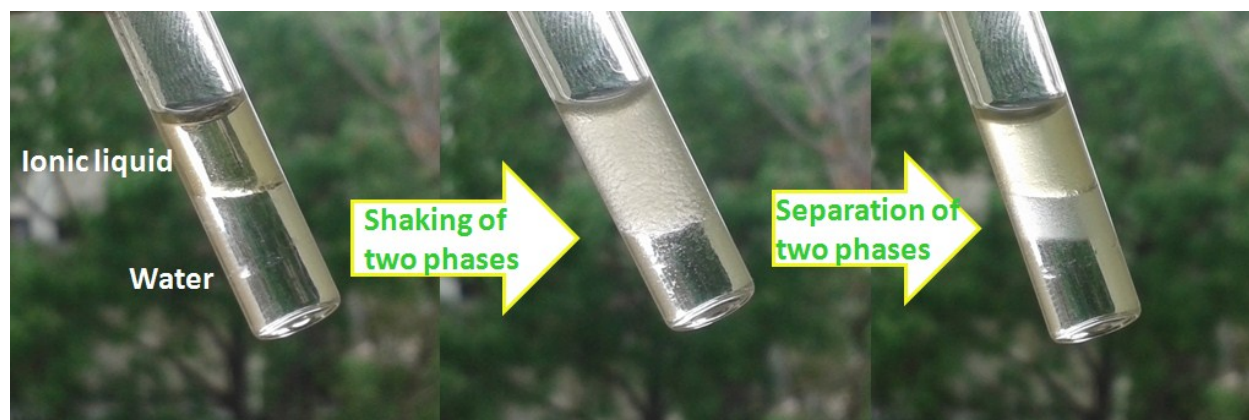


Figure SI-D1. Hydrophobic nature of ionic liquid **10**