Appendix-I. IR spectra

Fig- 1.14. IR spectra of compound 1
Fig. 1.15. IR spectra of 3b
Fig. 1.16. IR spectra of compound 3c
Fig. 1.17. IR spectra of compound 4c
Fig- 1.18. IR spectra of compound 4j
Figure 1.19. IR spectra of compound 5a

- 3460.63 cm⁻¹
- 2428.90 cm⁻¹
- 2097.21 cm⁻¹
- 1789.62 cm⁻¹
- 1747.19 cm⁻¹
- 1624.73 cm⁻¹
- 1572.67 cm⁻¹
- 1488.78 cm⁻¹
- 1382.71 cm⁻¹
- 1050.05 cm⁻¹
- 830.21 cm⁻¹
- 782.96 cm⁻¹
- 540.94 cm⁻¹
- 458.98 cm⁻¹
- 429.08 cm⁻¹
- 418.48 cm⁻¹
Fig. 1. IR spectra of compound 5b

Wave number [cm⁻¹]

%T

-3446.17 cm⁻¹
-1384.64 cm⁻¹
-1201.44 cm⁻¹
-1130.08 cm⁻¹
-1045.23 cm⁻¹
-1015.34 cm⁻¹
-839.24 cm⁻¹
-812.85 cm⁻¹
-693.28 cm⁻¹
-574.68 cm⁻¹
-457.05 cm⁻¹
-427.35 cm⁻¹
-385.21 cm⁻¹
-3446.17 cm⁻¹
-3002.89 cm⁻¹
-2689.66 cm⁻¹
-2376.44 cm⁻¹
-2063.21 cm⁻¹
-1749.99 cm⁻¹
-1436.77 cm⁻¹
-1123.55 cm⁻¹
-810.33 cm⁻¹
-597.11 cm⁻¹
-383.89 cm⁻¹
-171.67 cm⁻¹

Appendix-II. NMR spectra

Fig-1.21. $^1$H NMR spectra of compound 3a
Fig- 1.22. $^1$H NMR spectra of compound 3b
Fig- 1.23. $^1$H NMR spectra of compound 3c
Fig-1.24. $^1$H NMR spectra of compound 4c
Fig. 1.25. $^1$H NMR spectra of compound 4j
Fig- 1.26. $^1$H NMR spectra of compound 5a
Fig. 1.27. $^1$H NMR spectra of compound 5b
Fig. 1.28. $^{13}$C NMR spectra of compound 5a
Fig. 1.29. $^{13}$C NMR spectra of compound 5b
Appendix-III. MASS spectra

Fig- 1.30. MASS spectra of compound 3a
Fig- 1.31. MASS spectra of compound 3b
Fig- 1.32. MASS spectra of compound 3j
Fig. 1.33. MASS spectra of compound 4a
Fig. 1.34. MASS spectra of compound 4b
Fig- 1.35. MASS spectra of compound 4c
Fig- 1.36. MASS spectra of compound 5a
Fig. 1.37. MASS spectra of compound 5b