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Supplementary Information

A highly sensitive and selective fluorescent sensor for Al^{3+} ions based on thiophene 2-carboxylic acid hydrazide Schiff base

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Figure 1: IR spectra of THN.

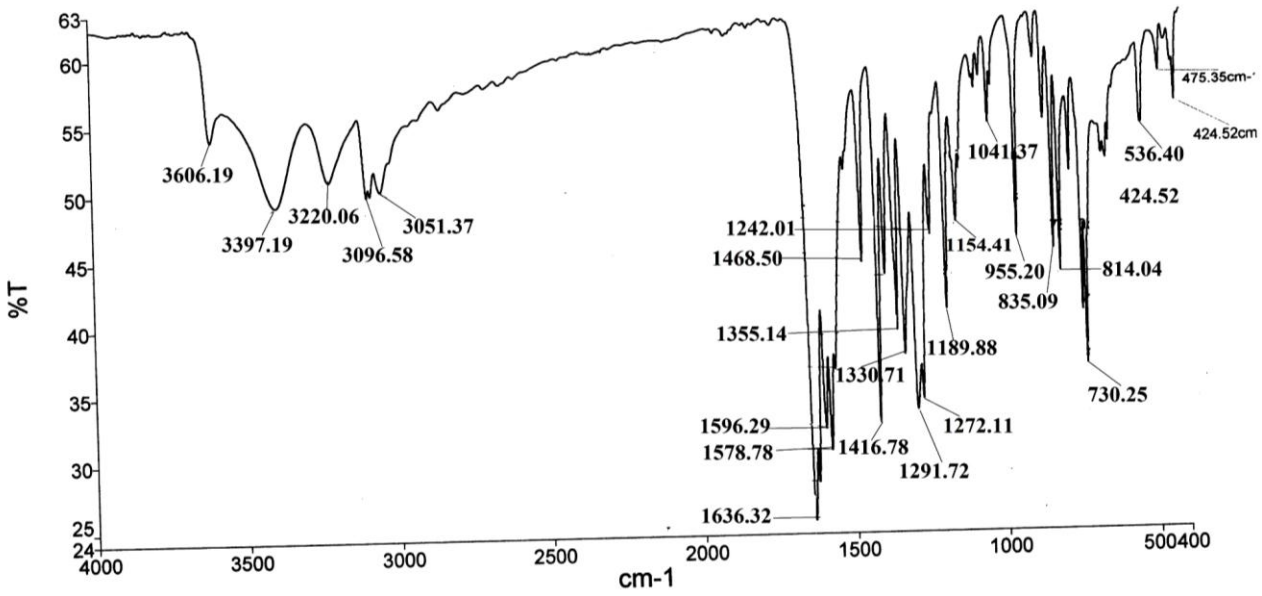

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Figure 2: ^{1}H NMR spectra of THN in DMSO-d_6**.**

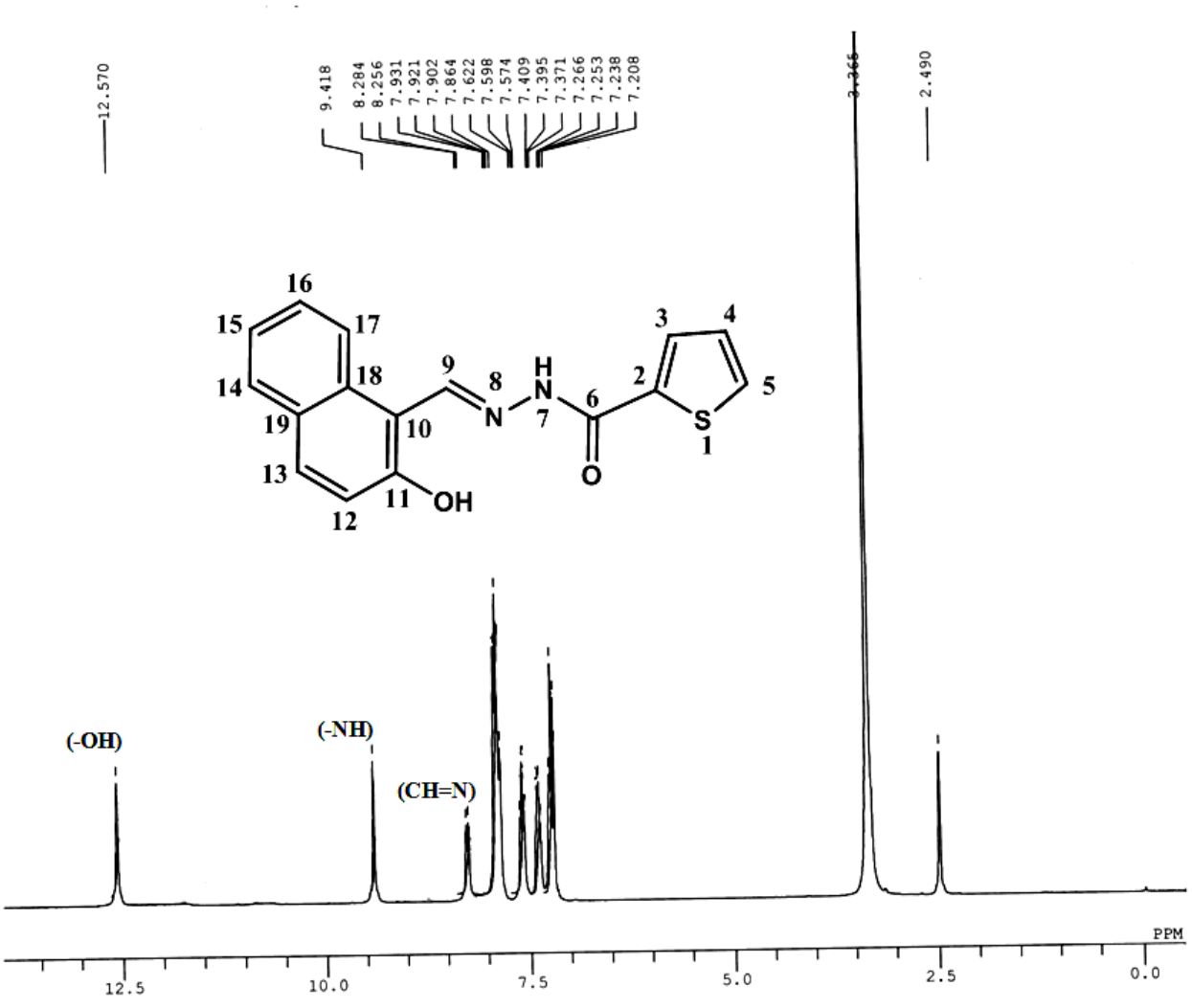

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Figure 3: ^{13}C NMR spectra of THN in DMSO-d_6**.**

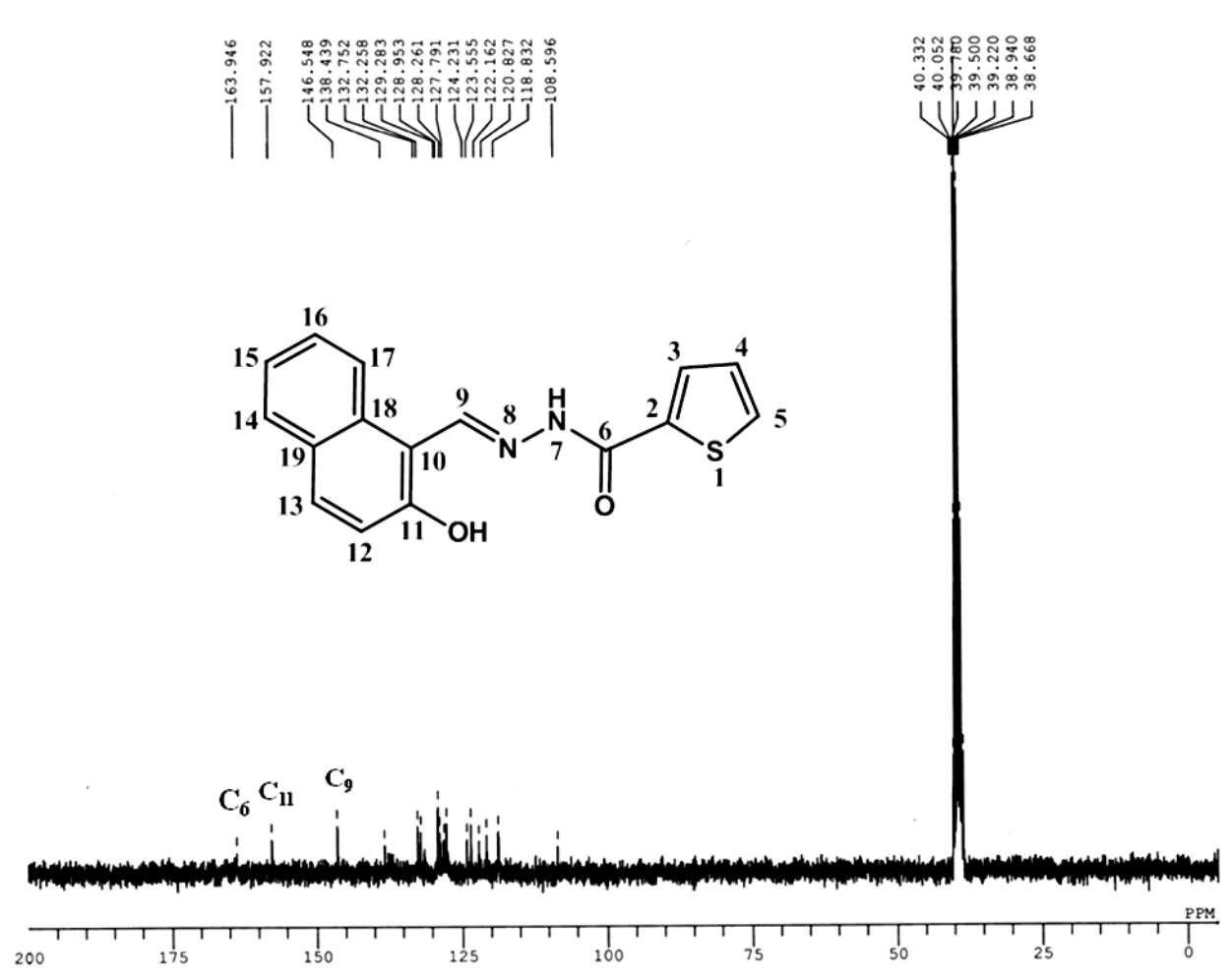

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Figure 4: Mass spectra of THN.

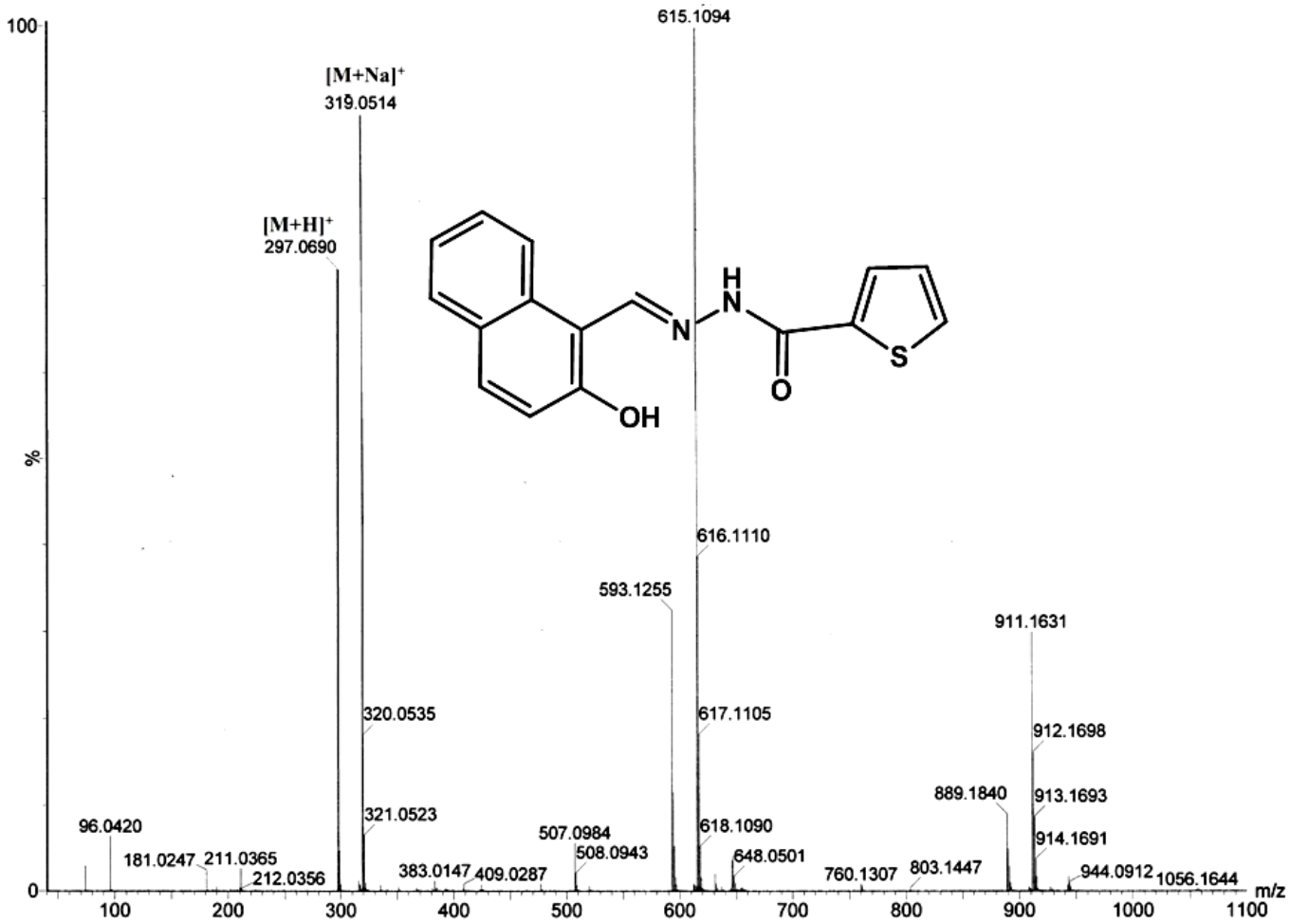

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Figure 5: Effect of addition of various metal ions (1 equivalent) on the UV-visible spectra of 20 μM EtOH–H_2O (1: 4 v/v) solution of THN.

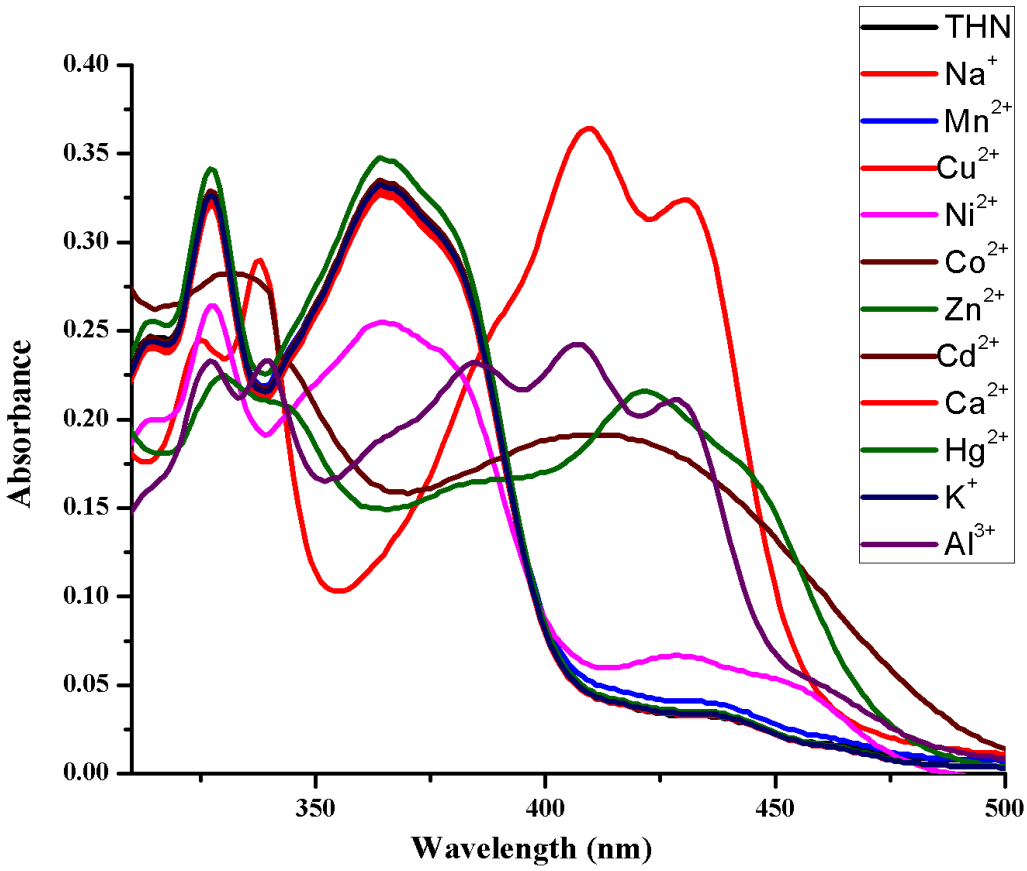

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Figure 6: Colorimetric change in receptor THN upon addition of 2 equivalents of Al^{3+} in EtOH–H_2O (1: 4 v/v) solution.

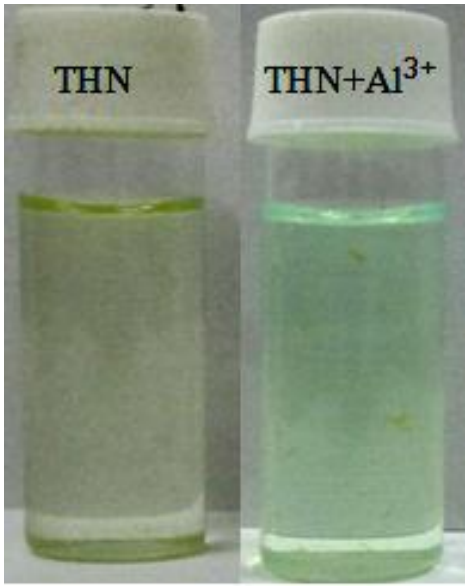

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Figure 7: Bensei-Hildebrand plot for THN with Al^{3+}, considering the 1:1 complexation. The goodness of the fit is shown by the R^2 value**.**

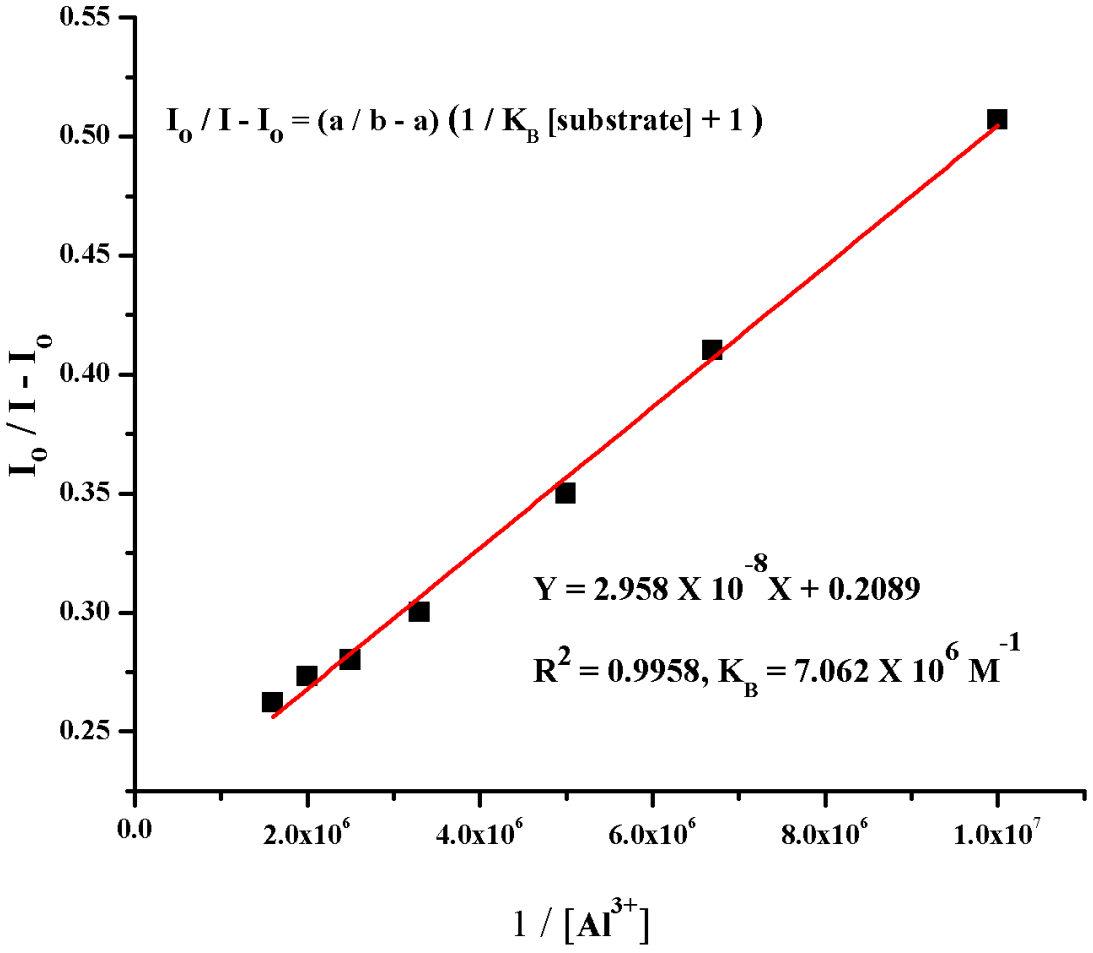

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Figure 8: Fluorescence intensity at 476 nm for THN (0.5 μM) in EtOH–H_2O (1: 4 v/v) solution as a function of the concentration of Al^{3+}. The excitation wavelength for the complex was 407 nm (R^2 = 0.9703, linear range = 9.9 x 10^{-9}–1.98 x 10^{-7})**.**

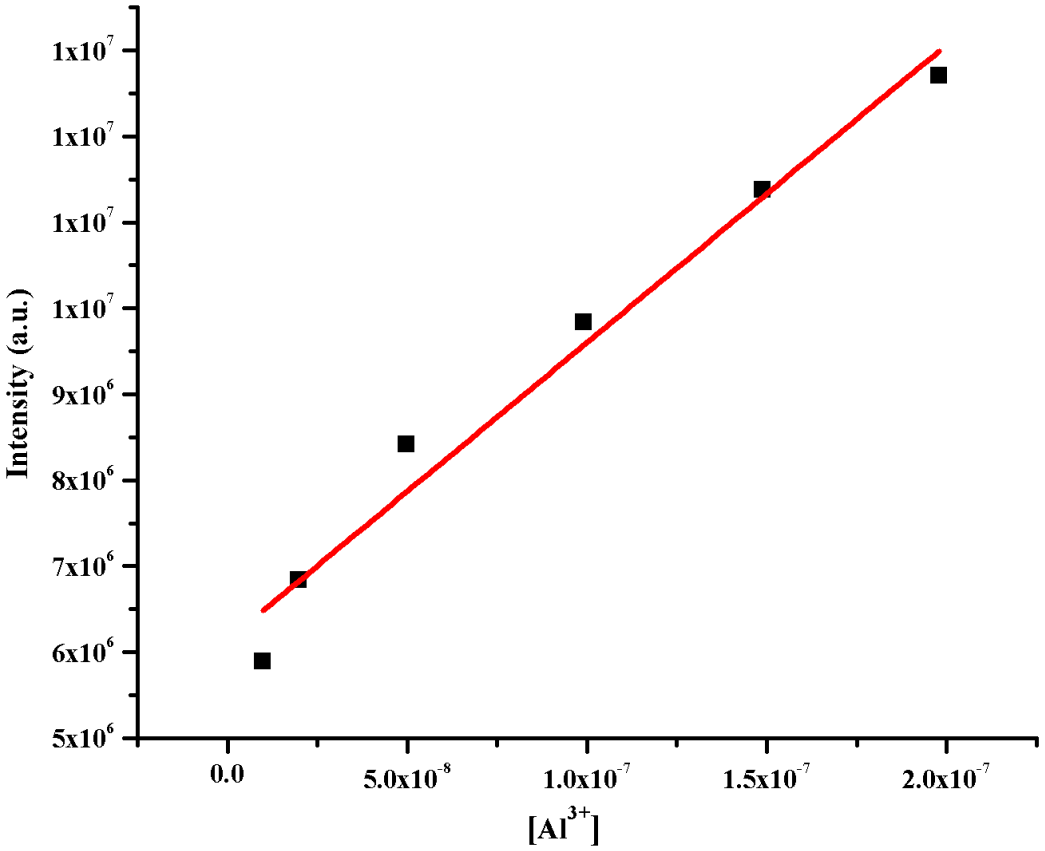

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Figure 9: IR spectra of THN-Al^{3+} complex.

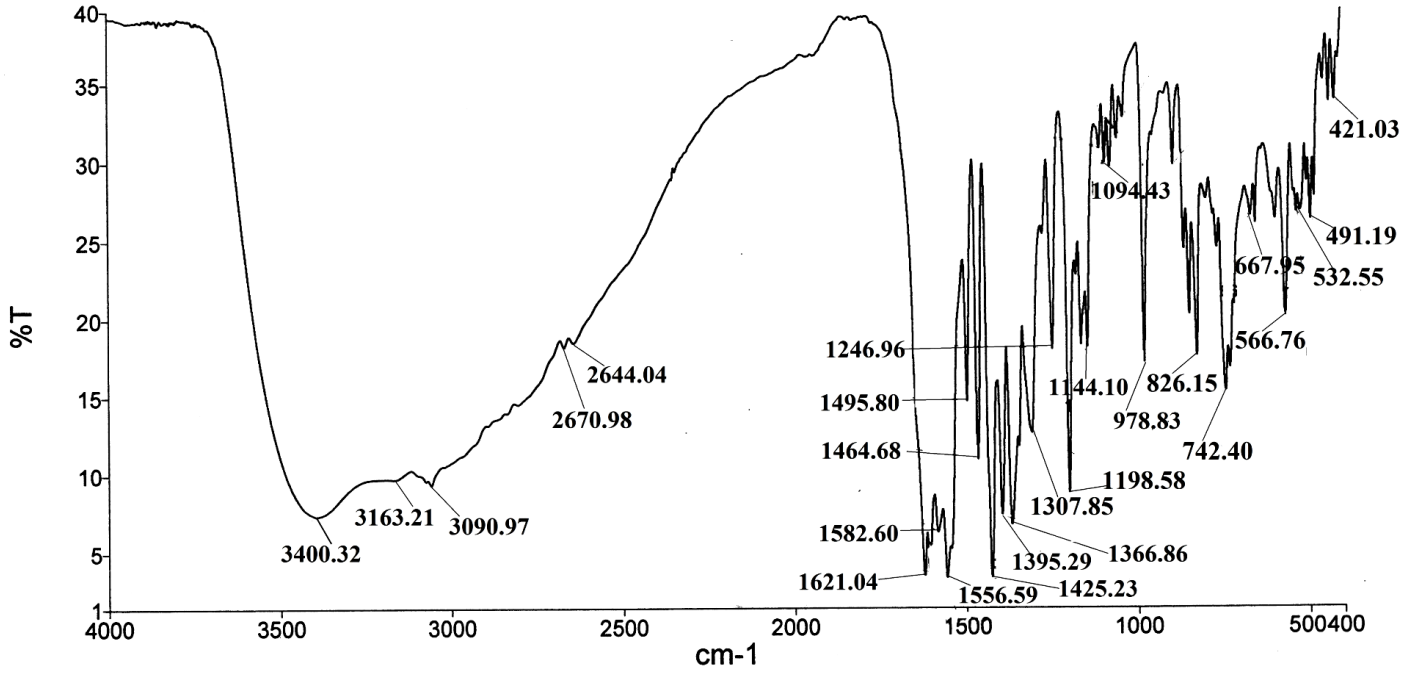

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Figure 10: Mass spectra of THN-Al^{3+} complex.