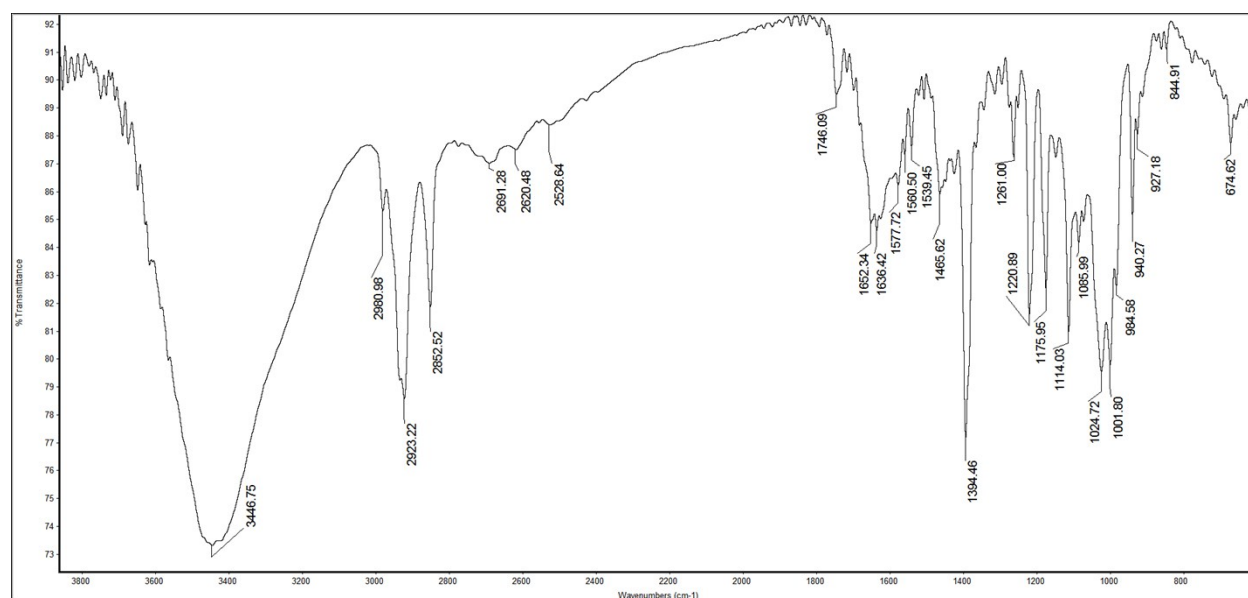


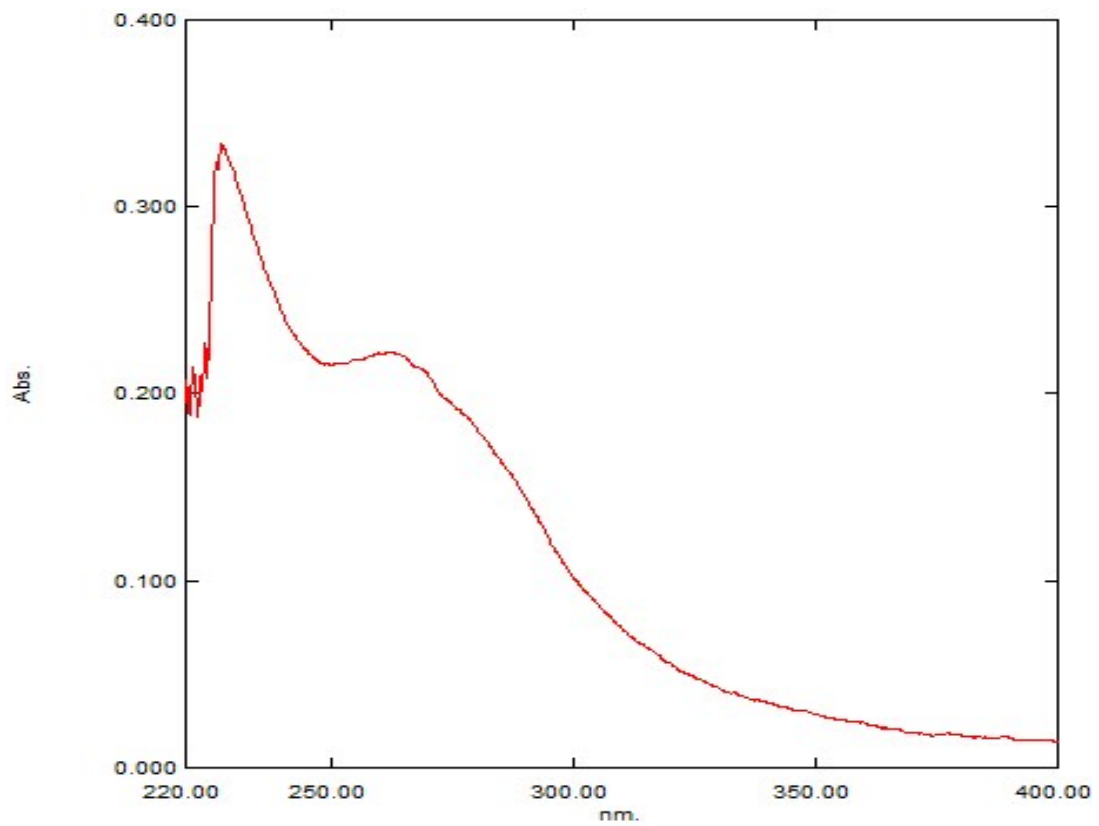
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Title: Mono and trivalent thallium-sulfur interactions and their influence on the formation of nano thallium sulphide: Single crystal X-ray structural and spectral studies on thallium(I) / (III) – cyclohexylpiperazine dithiocarbamates

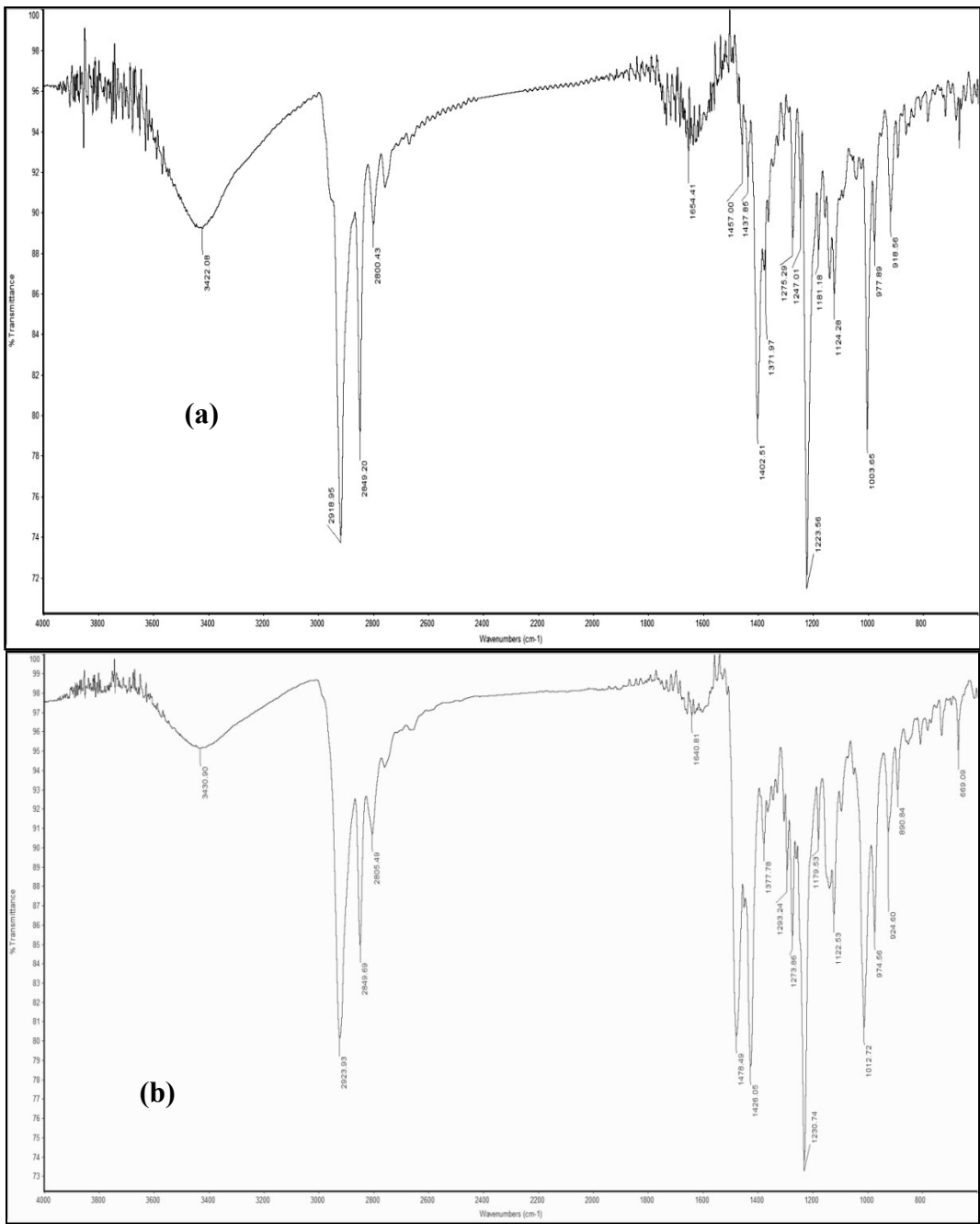
Kuppukkannu Ramalingam*, Corrado Rizzoli and Gurunathan Senthilkumar Sivagurunathan



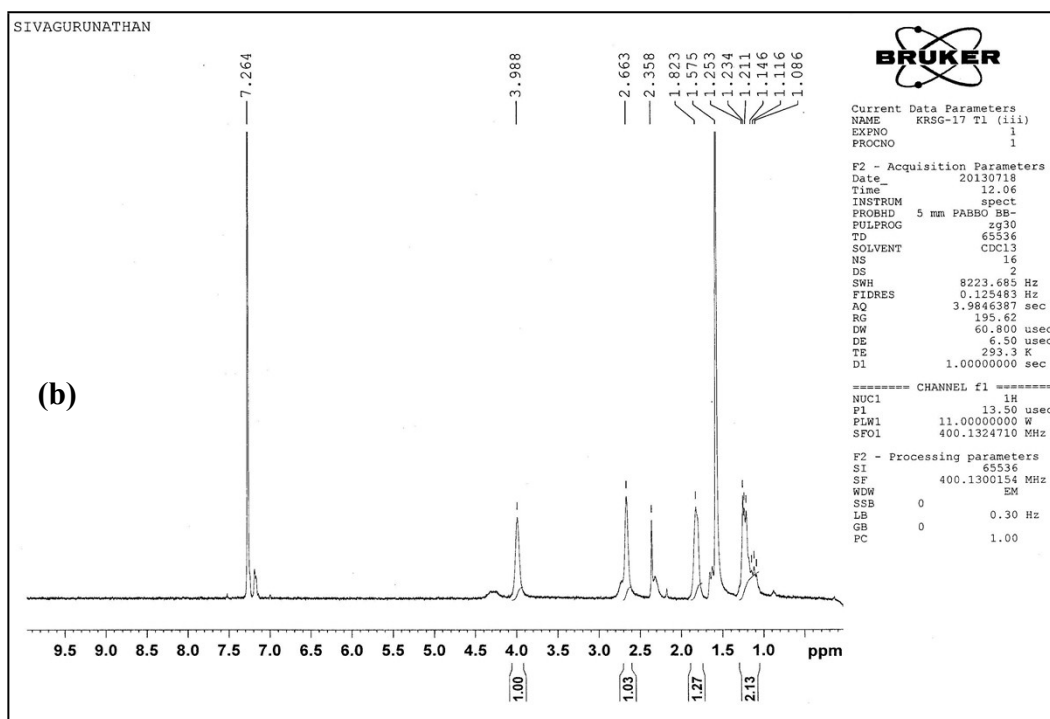
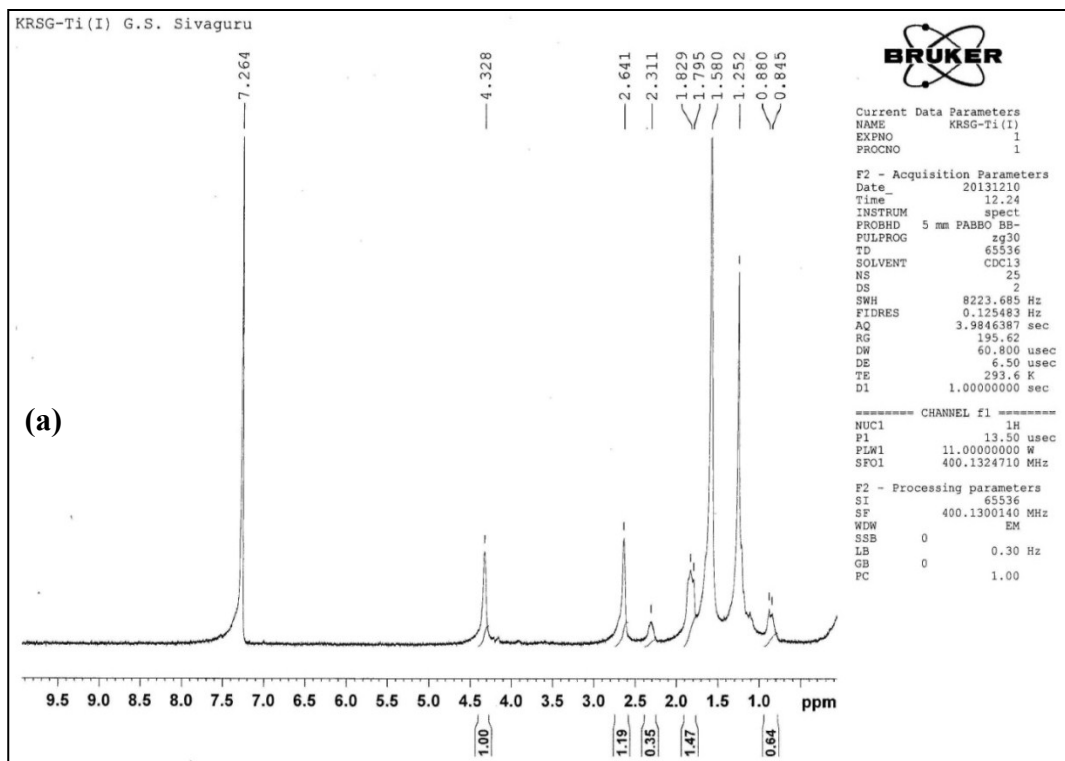
IR spectrum of 1-cyclohexylpiperazinedithiocarbamic acid



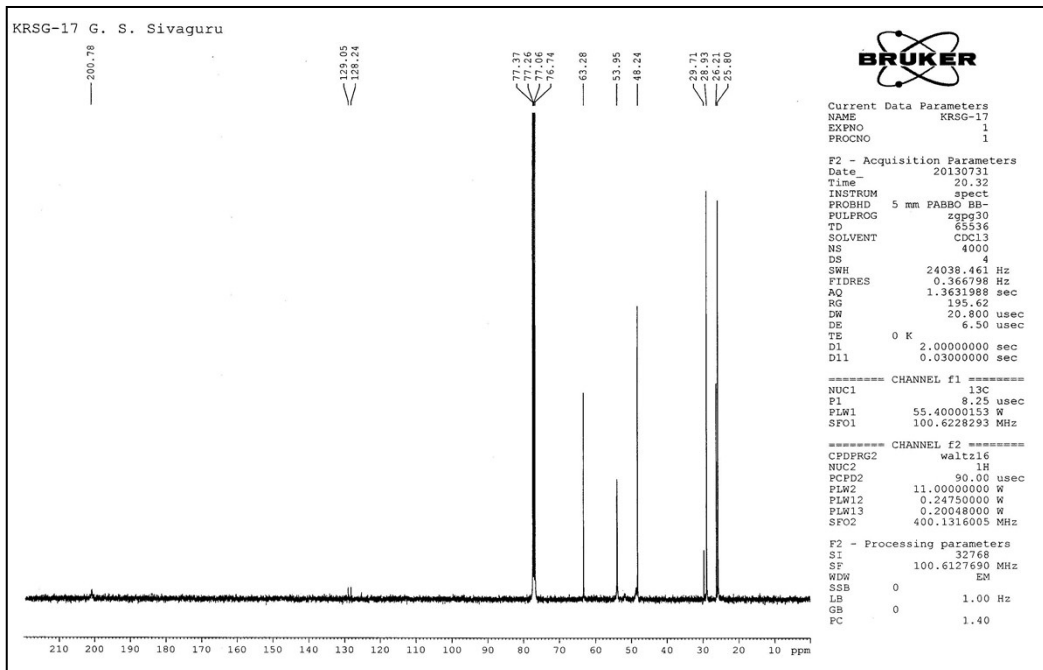
UV spectrum of 1-cyclohexylpiperazinedithiocarbamic acid



IR spectra of (a) $[Ti(chpzdtc)]_2$ and (b) $[Ti(chpzdtc)_3]$



^1H NMR Spectra of **(a)** $[\text{Ti}(\text{chpzdtc})_2]$ and **(b)** $[\text{Ti}(\text{chpzdtc})_3]$



^{13}C NMR Spectrum of $[\text{Tl}(\text{chpzdtc})_3]$