

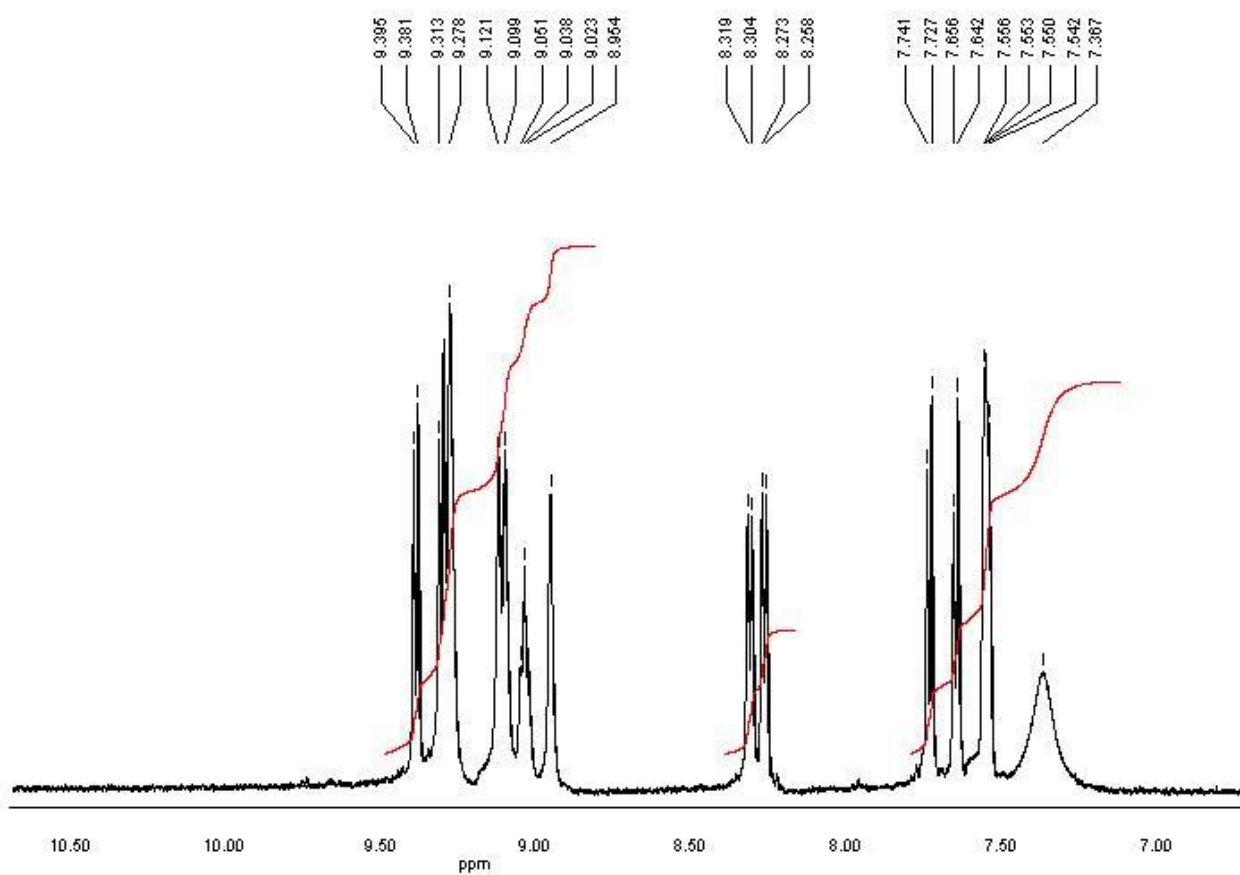
## Supporting information

# Purification-free synthesis of a highly efficient ruthenium dye complex for dye-sensitised solar cells (DSSCs)

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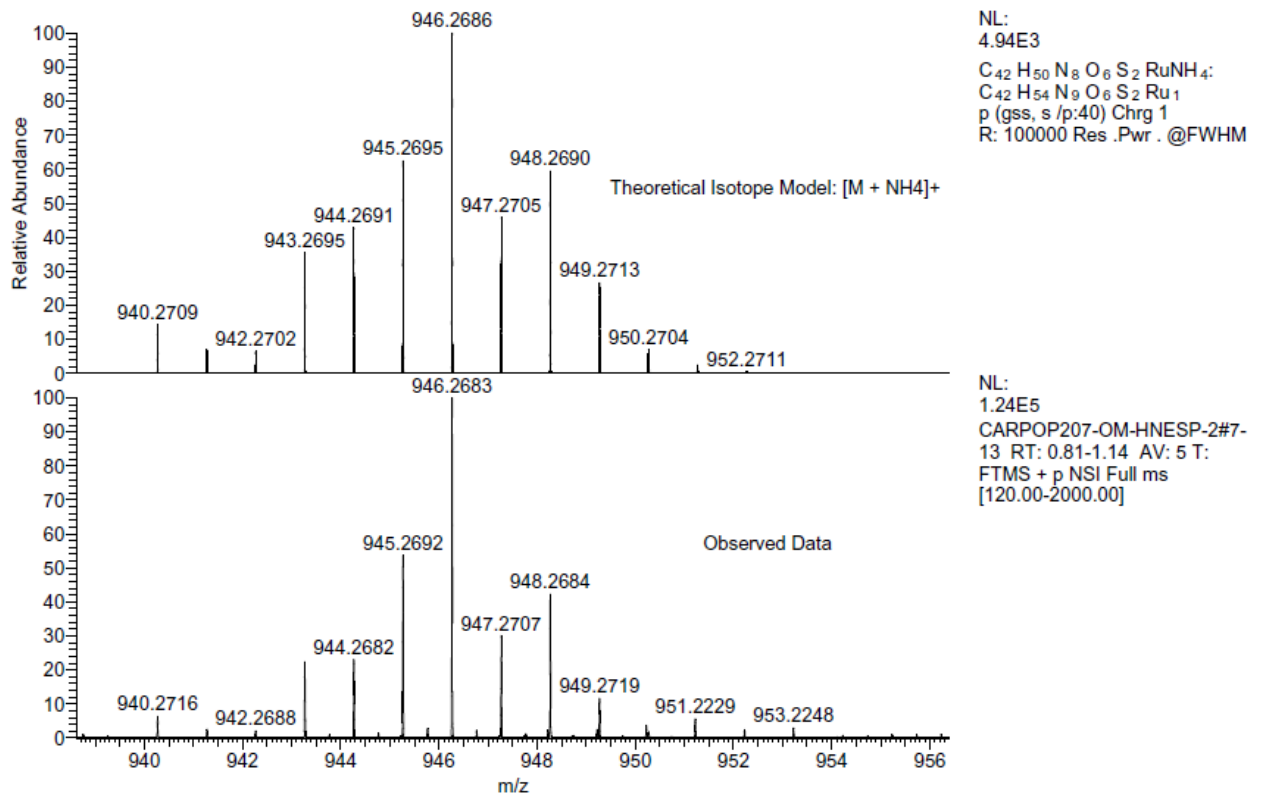
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## <sup>1</sup>H NMR



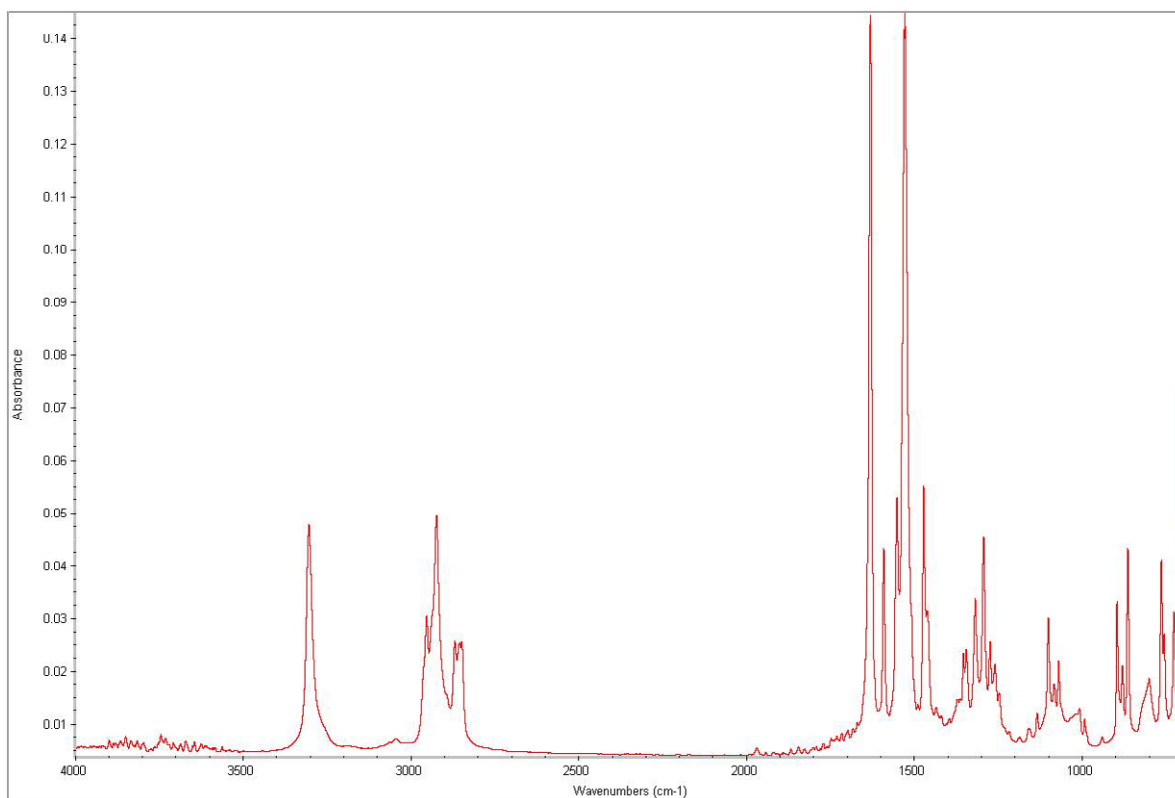
**Fig. 1** Aromatic region of the <sup>1</sup>H NMR spectrum of A597.

## Mass spectrometry

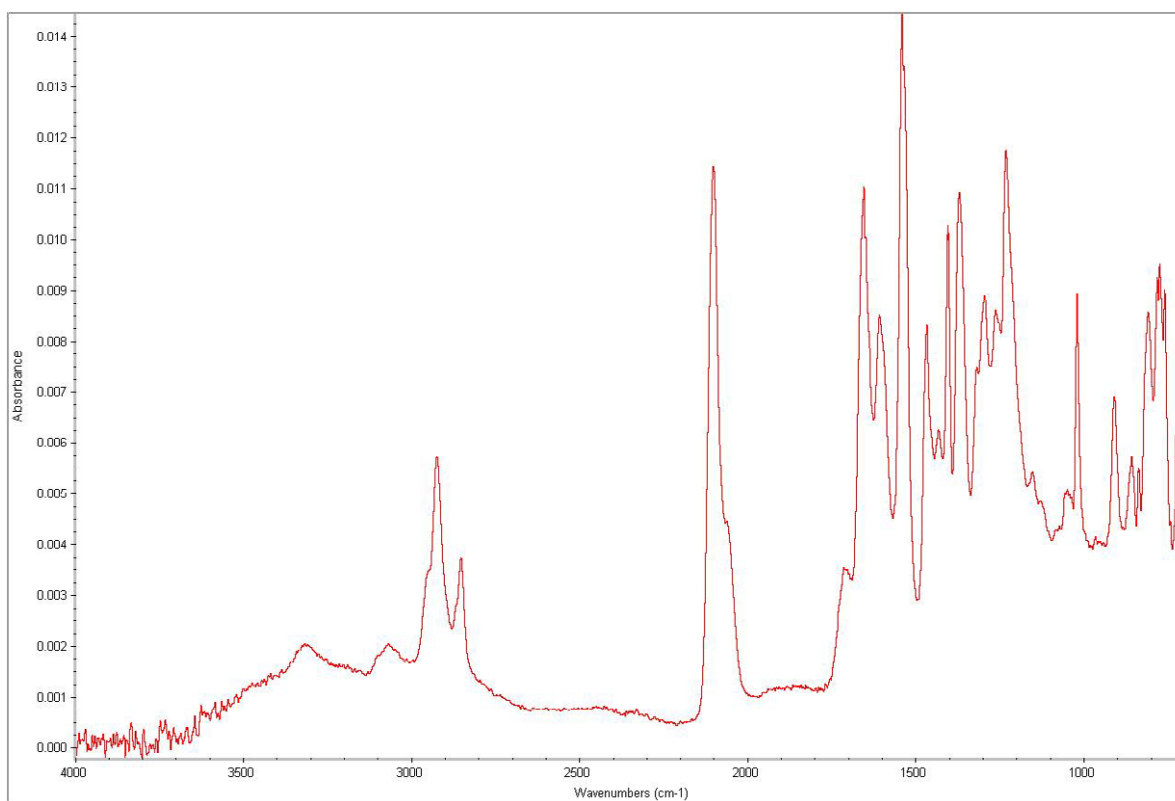


**Fig.2** Mass spectra of A597 and theoretical isotope model.

## IR Spectroscopy

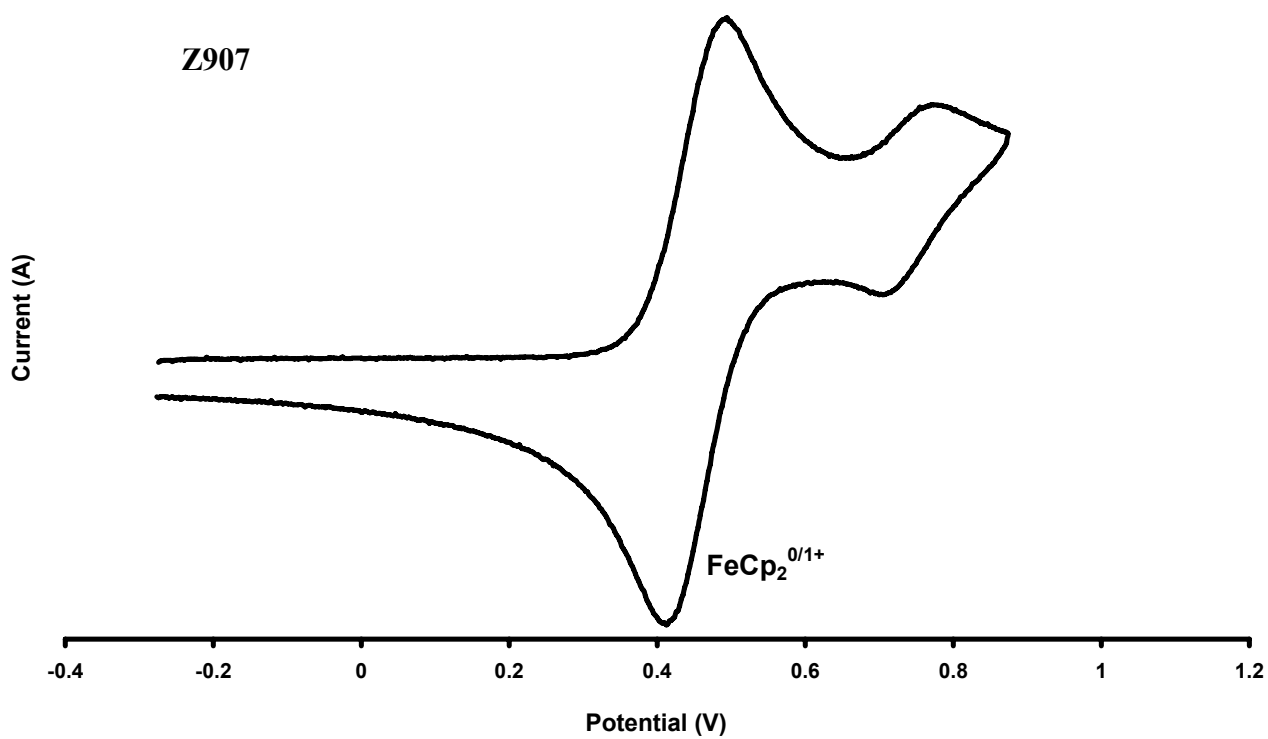


**Fig. 3** IR spectrum of 4,4'-dioctylamido-2,2'-bipyridine



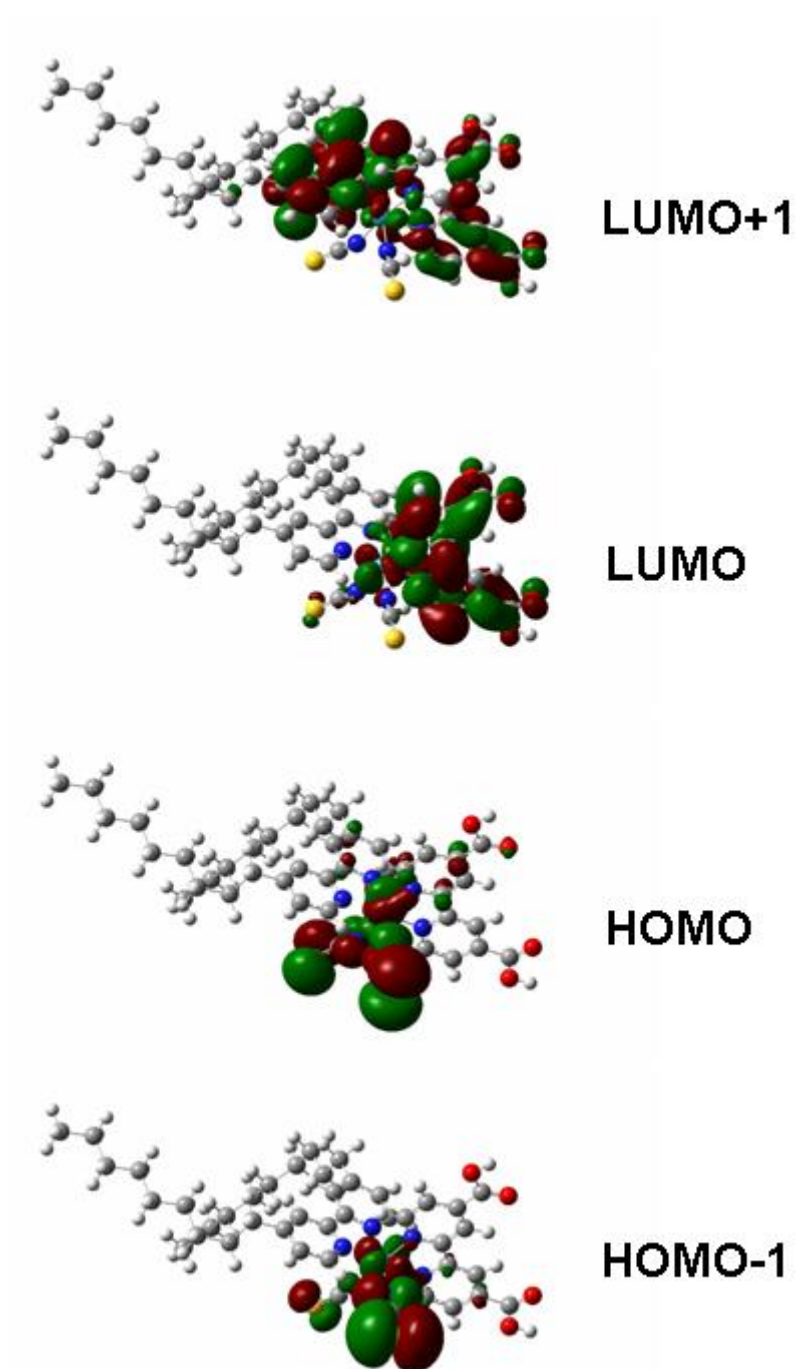
**Fig. 4** IR spectrum of A597

## Cyclic voltammetry



**Fig. 5** Cyclic voltammograms of **Z907** at 200 mV/s (ferrocene added as a calibrant)

DFT studies



**Fig 6.** Graphical representation of the frontier orbitals for **Z907**