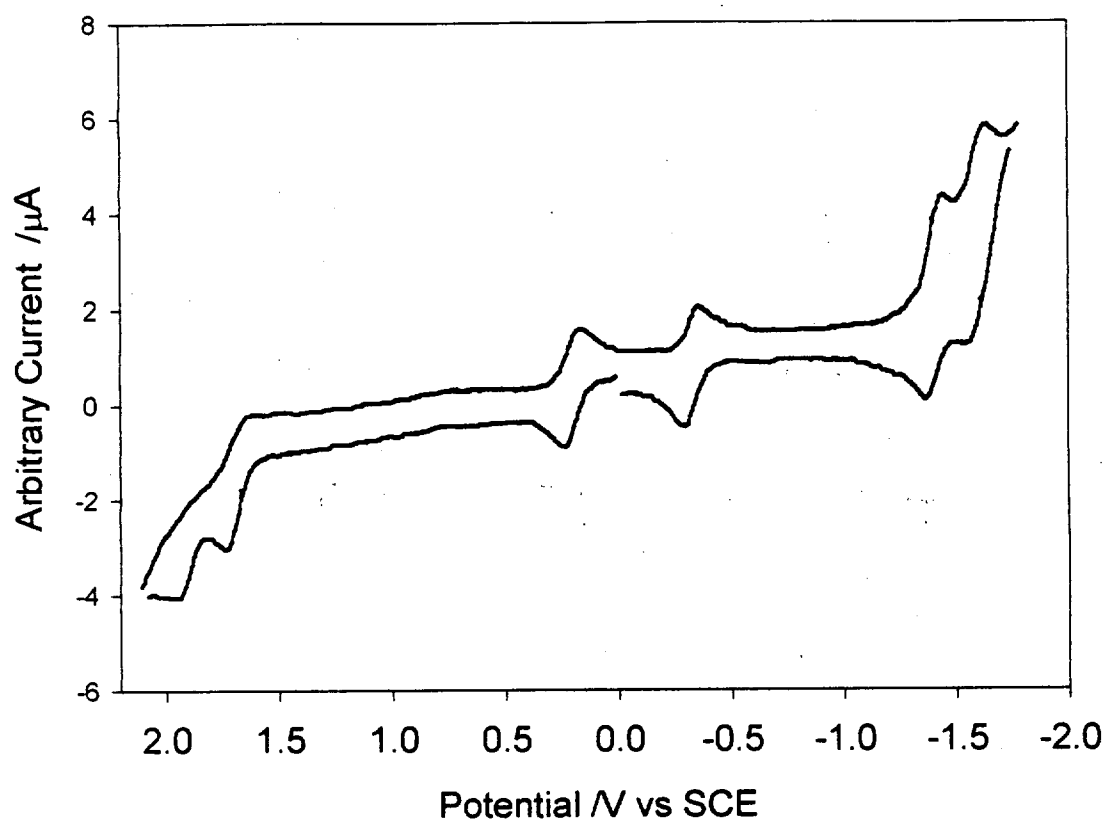


Figure S1. The cyclic voltammogram of $[(bpy)_2Ru(34-2H)]^{2+}$ in Acetonitrile. Scan rate 100 mV/s Electrolyte 0.1 M TBAPF₆

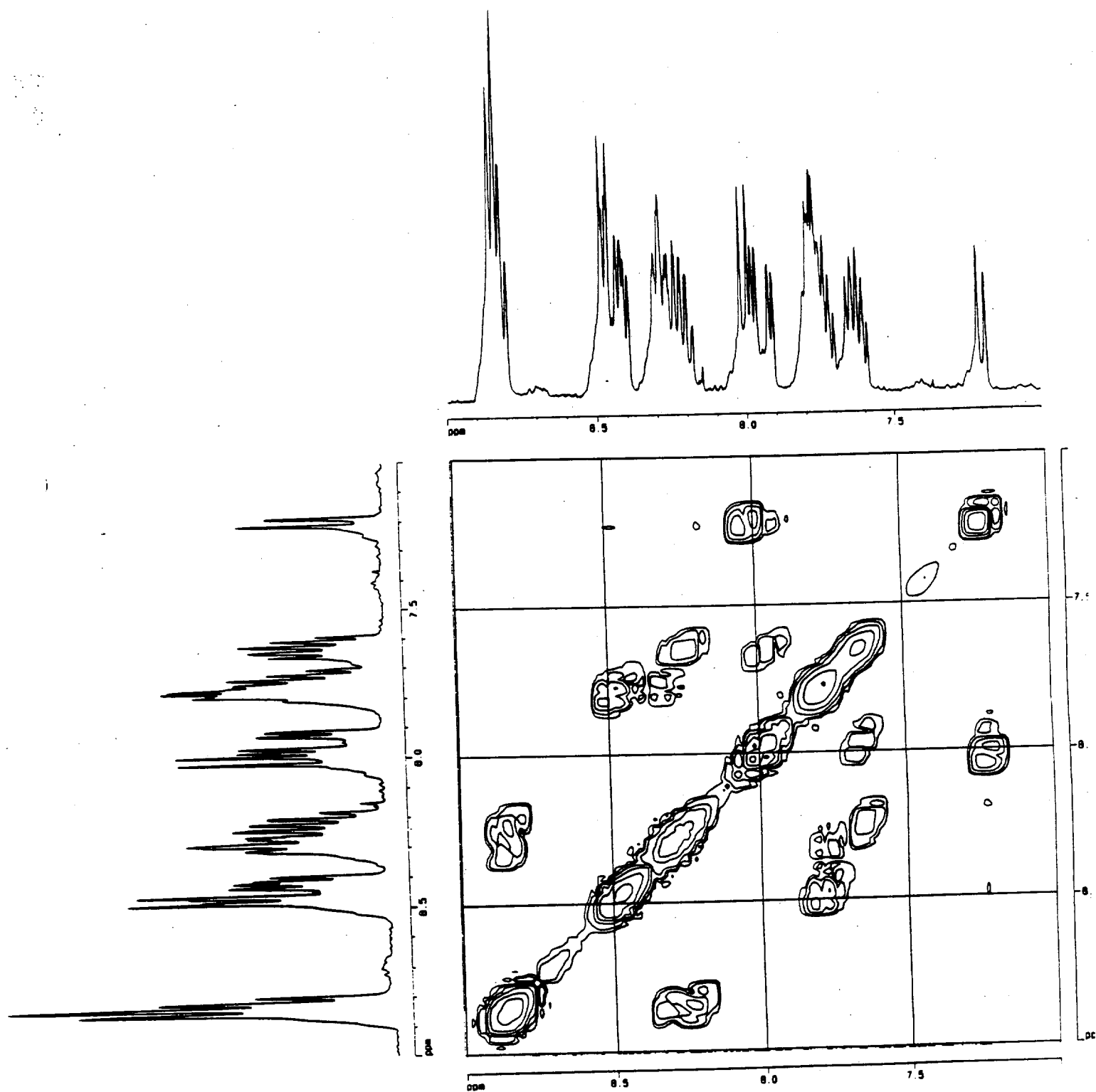




●

●

assignments.



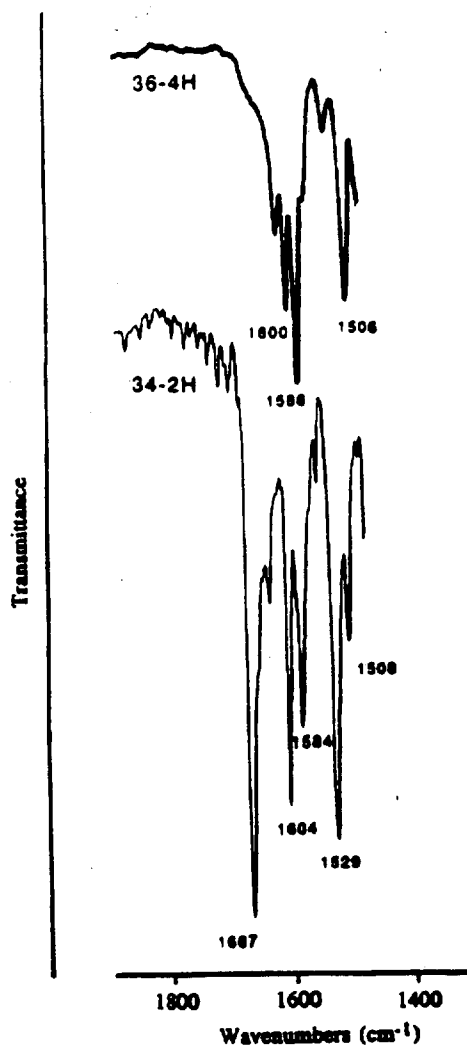


Figure S4. A section of the FTIR spectra of complexes [36-4H] (top) and [34-2H] (bottom) in Nujol mull.

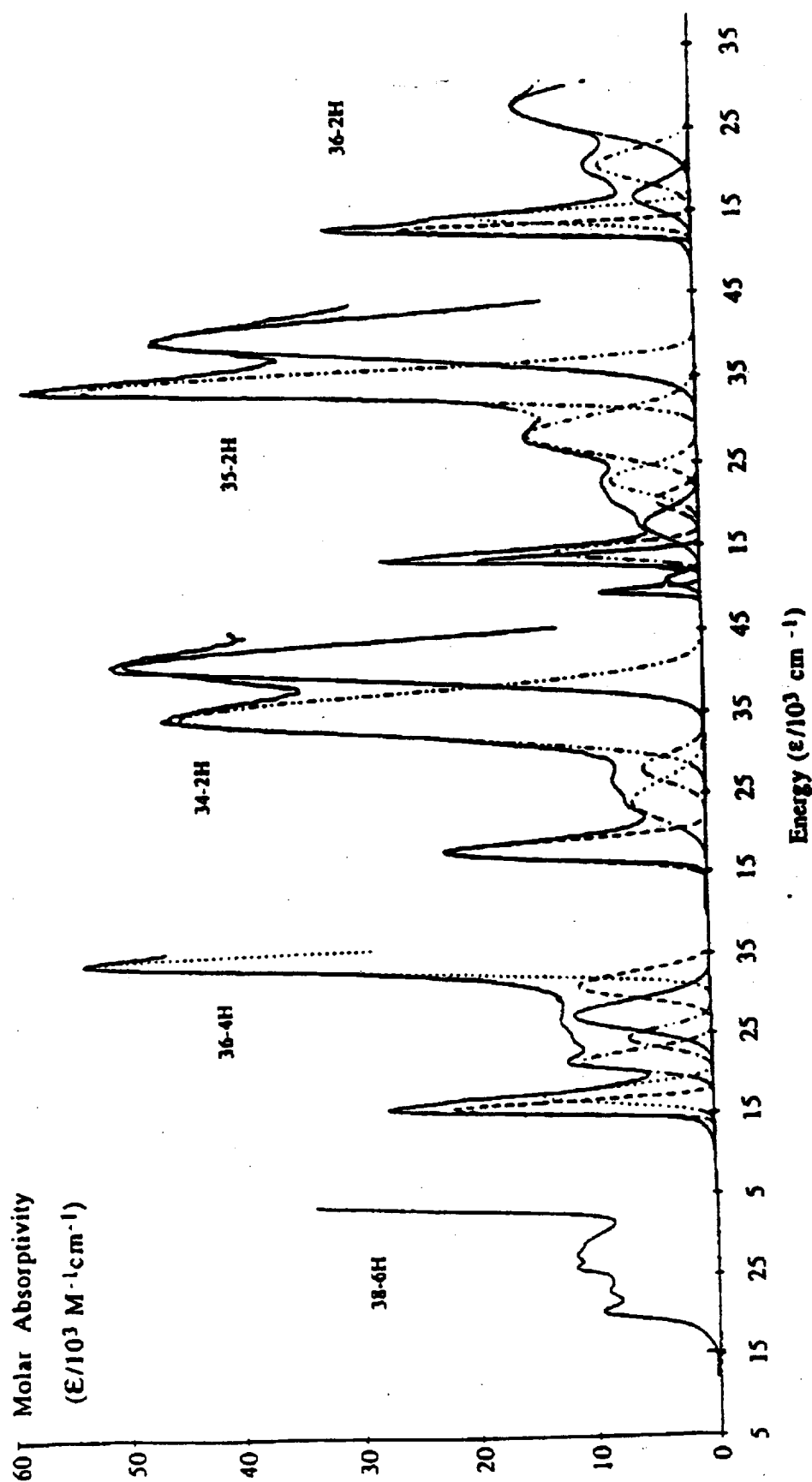


Figure S5. - Gaussian deconvolution of the uv/vis electronic absorption spectra of the complexes $[\text{Ru}(\text{bpy})_2(38\text{-}6\text{H})]^{2+}$, $[\text{Ru}(\text{bpy})_2(36\text{-}4\text{H})]^{2+}$, $[\text{Ru}(\text{bpy})_2(34\text{-}2\text{H})]^{2+}$, $[\text{Ru}(\text{bpy})_2(35\text{-}2\text{H})]^+$ and $[\text{Ru}(\text{bpy})_2(36\text{-}2\text{H})]$ in methanol.

Table S2. NMR assignments for species $[\text{Ru}(\text{bpy})_2(36\text{-}4\text{H})]^{2+}$ dissolved in acetone- d_6 .

region (ppm)	proton assignments	integration
8.95 to 8.75	3 b,c,d,e	4
8.55 to 8.35	5a,8a, 6c, 6e	4
8.35 to 8.15	4 b,c,d,e	4
8.00 7.96 to 7.91	3 a 6b, 6d	3
7.85 to 7.70	6a,7a, 5c, 5e	4
7.70 to 7.55	5b, 5d	2
7.20	4 a	1