

# Synthesis, Structure and Photophysical Properties of [UO<sub>2</sub>X<sub>2</sub>(O=PPh<sub>3</sub>)<sub>2</sub>] (X = Cl, Br, I)

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## Supplementary Information.

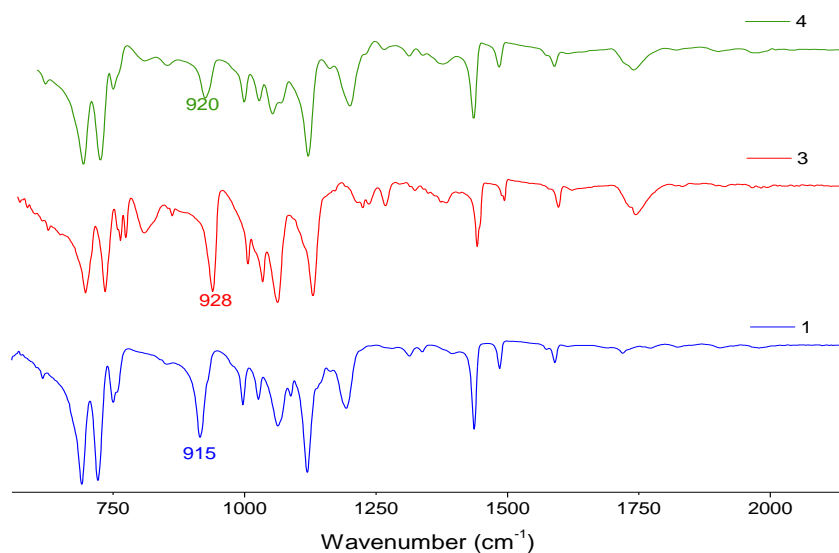


Figure S1. IR spectral profile for complexes 1, 3 and 4

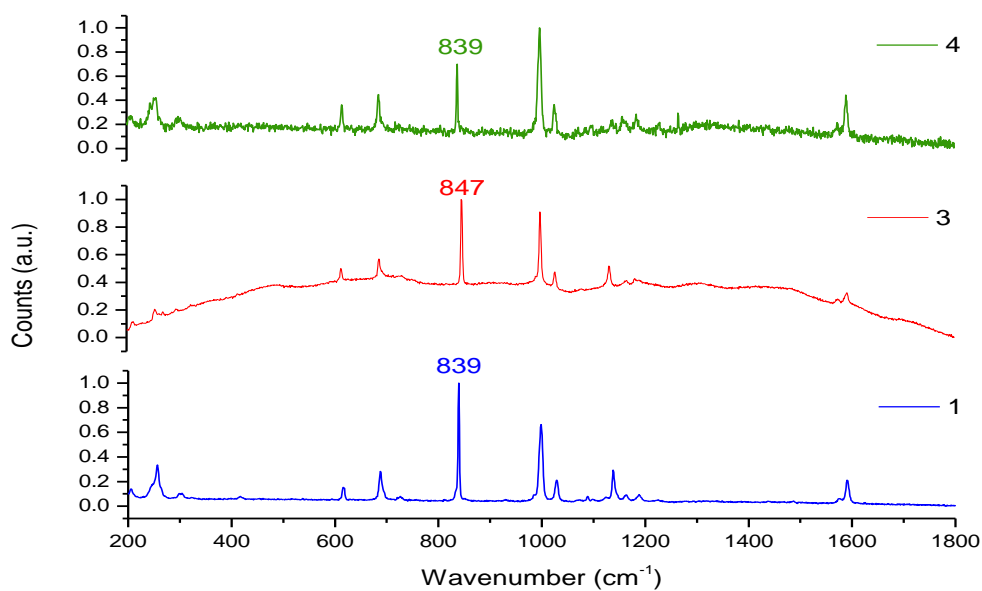
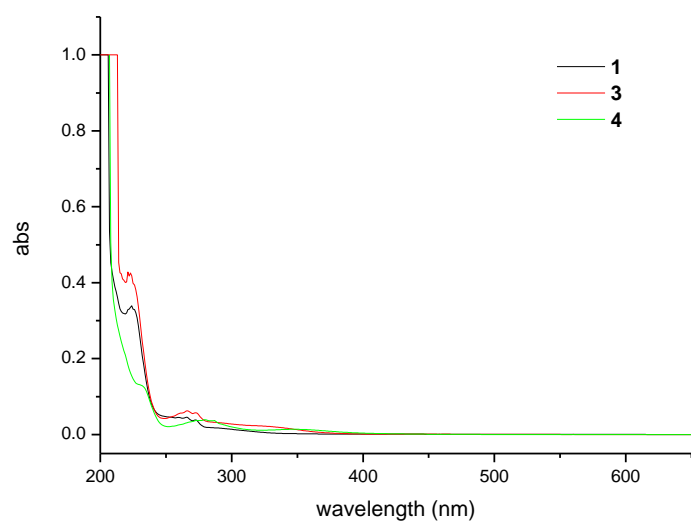
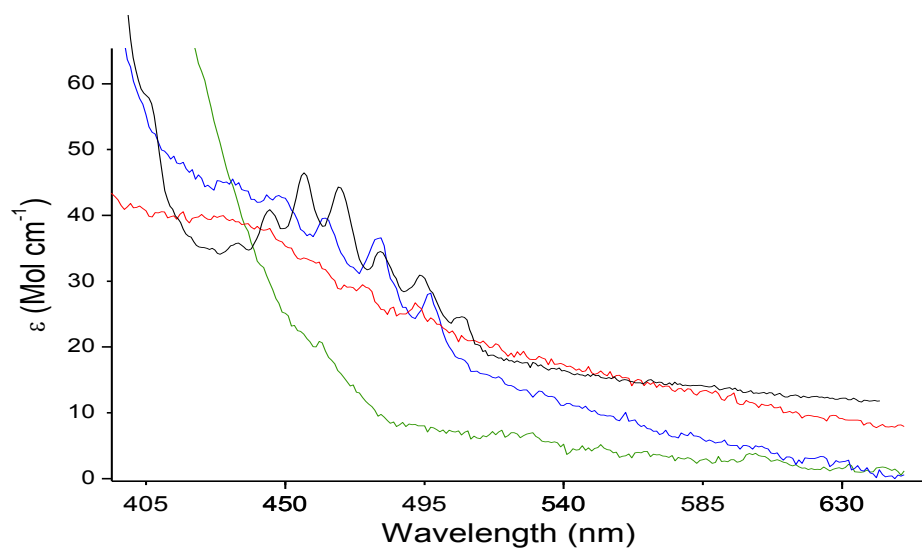


Figure S2. Raman spectrum of complexes 1, 3 and 4



**Figure S3.** UV-Vis absorption spectra for complex **1**, **3** and **4** in MeCN at *ca.* 1 mmol concentration.



**Figure S4.** UV-Vis absorption spectra for complex **1** (blue), **3** (red), **4** (green), and [PyH]<sub>2</sub>[UO<sub>2</sub>Cl<sub>4</sub>] (black), in MeCN at *ca.* 1 mmol concentration, showing the [UO<sub>2</sub>]<sup>2+</sup> vibronic coupling transitions.