

**Synthesis, single crystal structural investigation, Hirshfeld surface analysis,
thermoanalysis and spectroscopic study of two new Cu(II) and Co(II)
transition-metal complexes**

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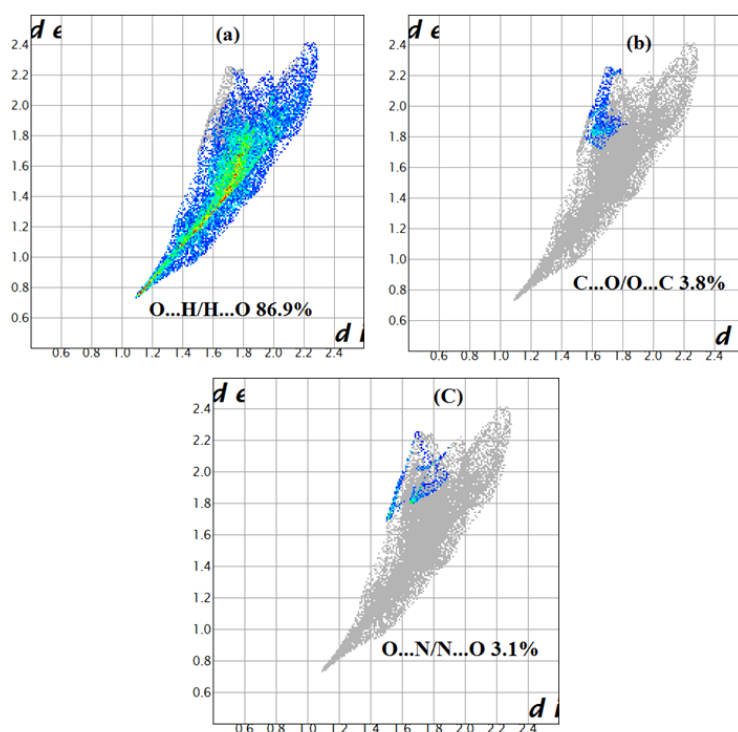


Figure S1. Decomposed fingerprint plots of the major contacts around the nitrate group of compound (**1**).

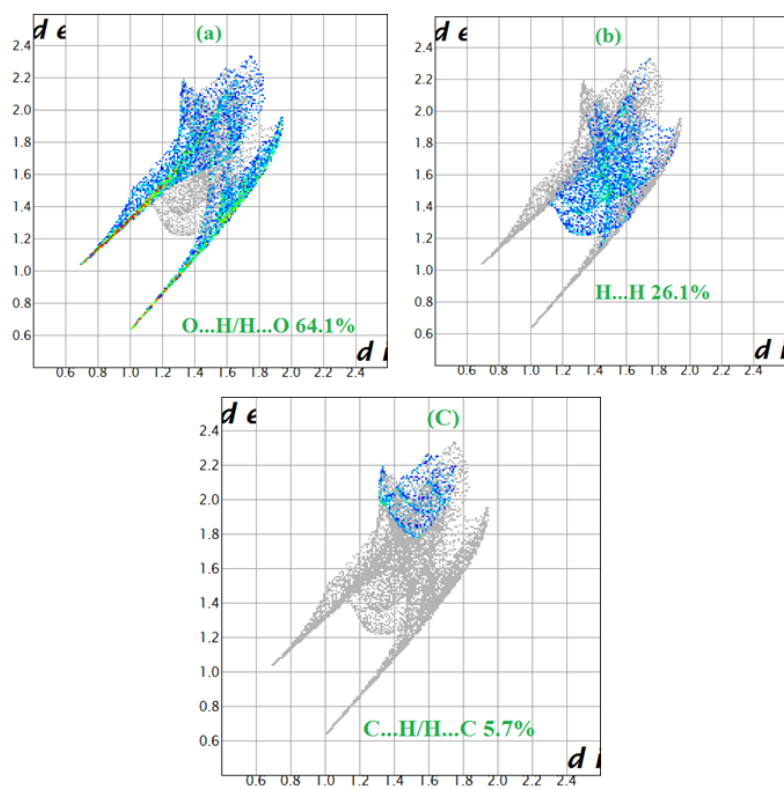


Figure S2. Decomposed fingerprint plots of the major contacts around the water molecule of compound (1).

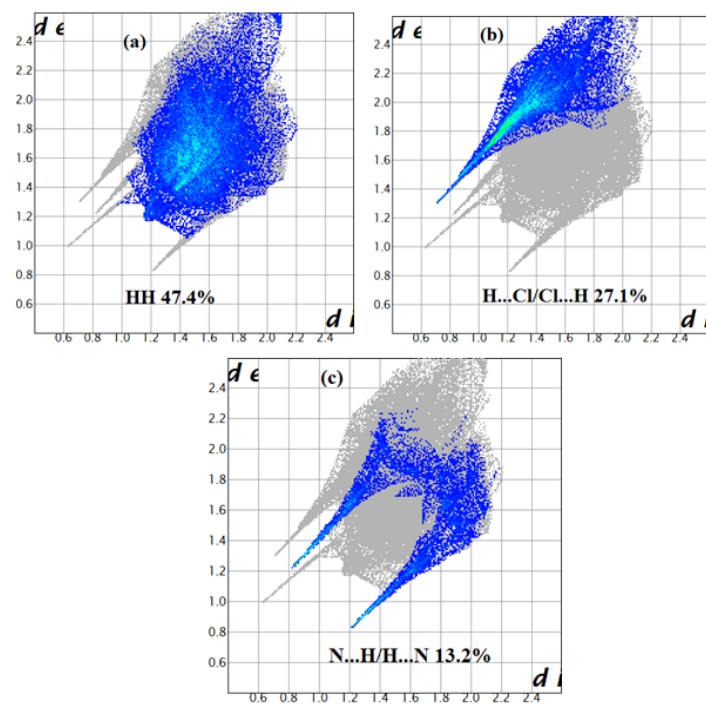


Figure S3. Decomposed fingerprint plots of the major contacts around organic cations of compound **(2)**.

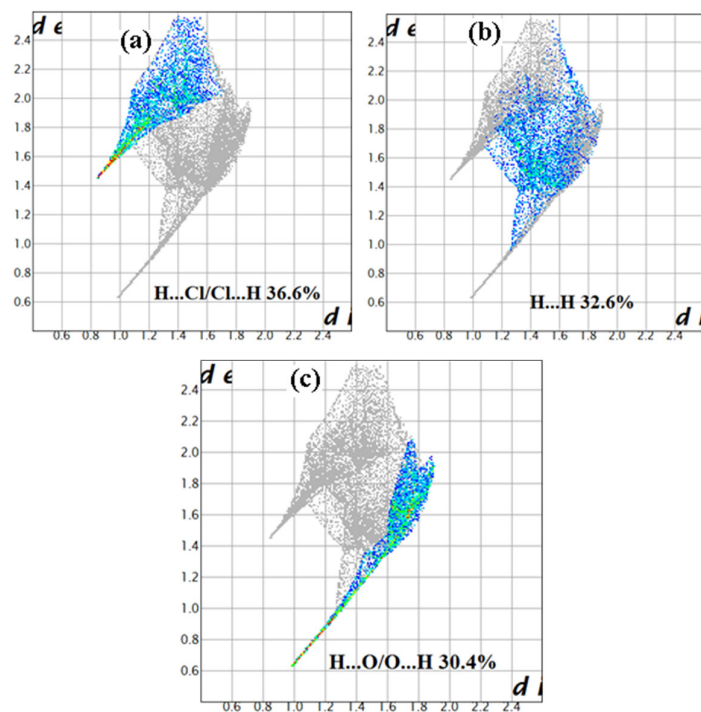


Figure S4. Decomposed fingerprint plots of the major contacts around the water molecule of compound (2).

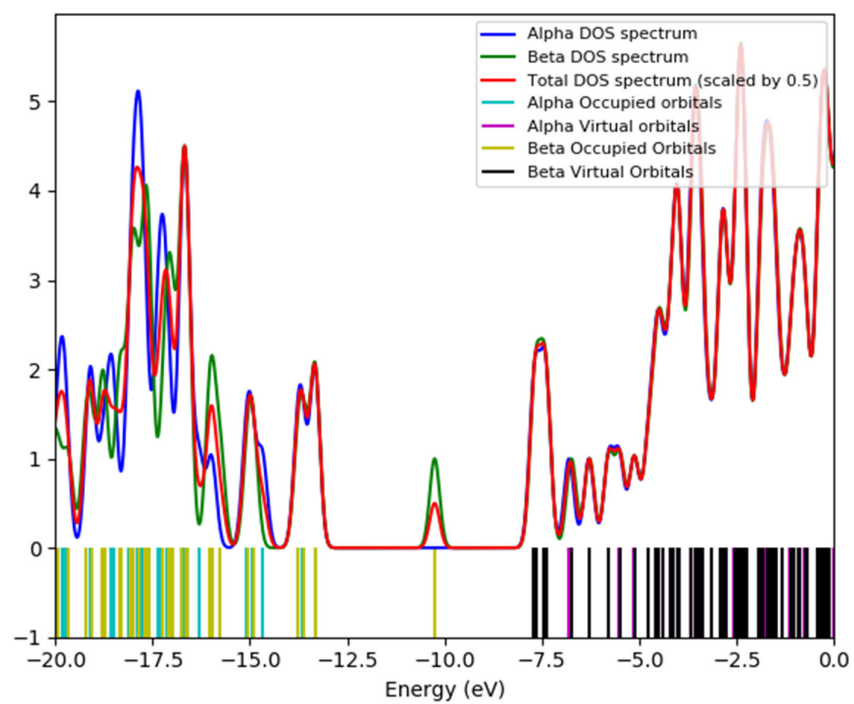


Figure S5. Energy distribution of the different orbitals of **1**.

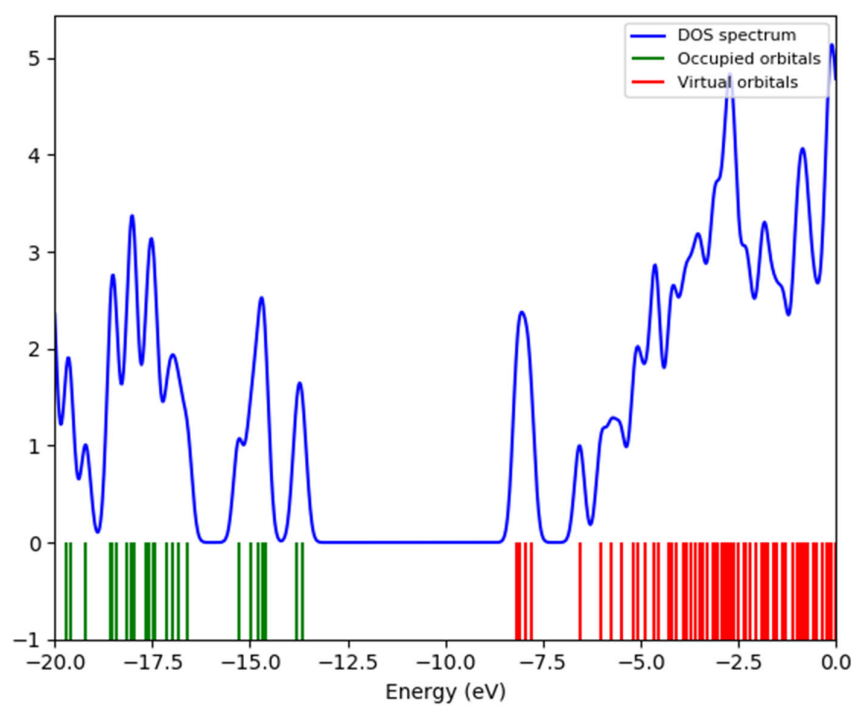


Figure S6. Energy distribution of the different orbitals of the two organic cations in (2).

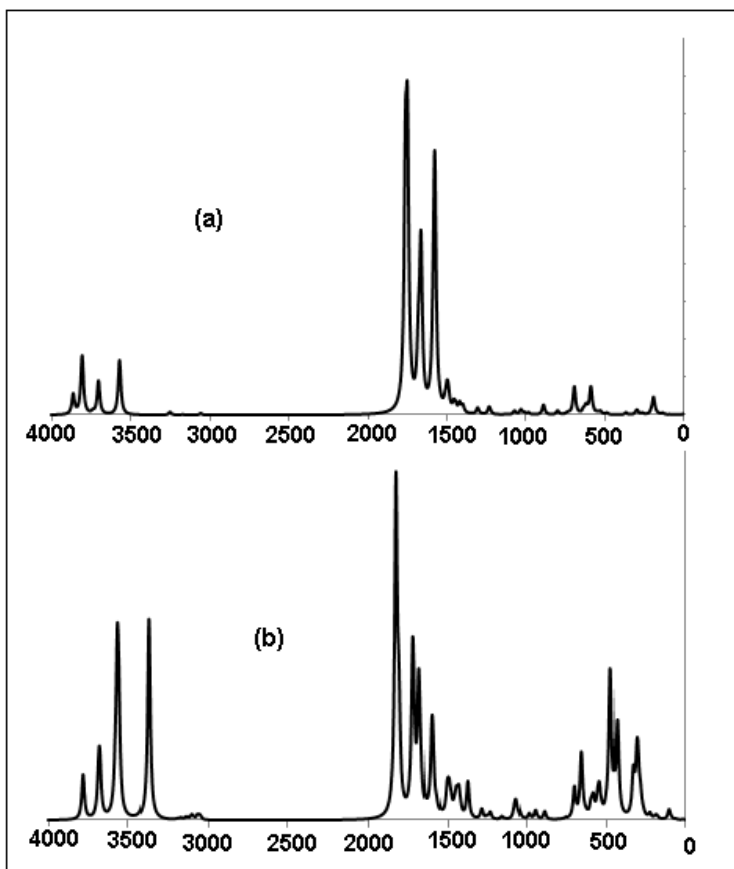


Figure S7. Calculated infrared absorption spectrum of (1) and (2).

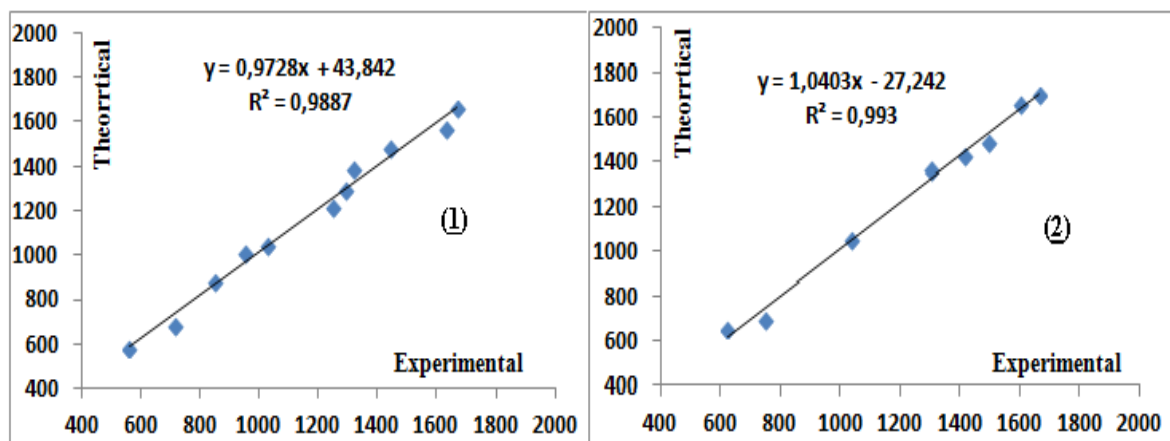


Figure S8. Comparison between experimental and calculated IR frequencies of (1) and (2).

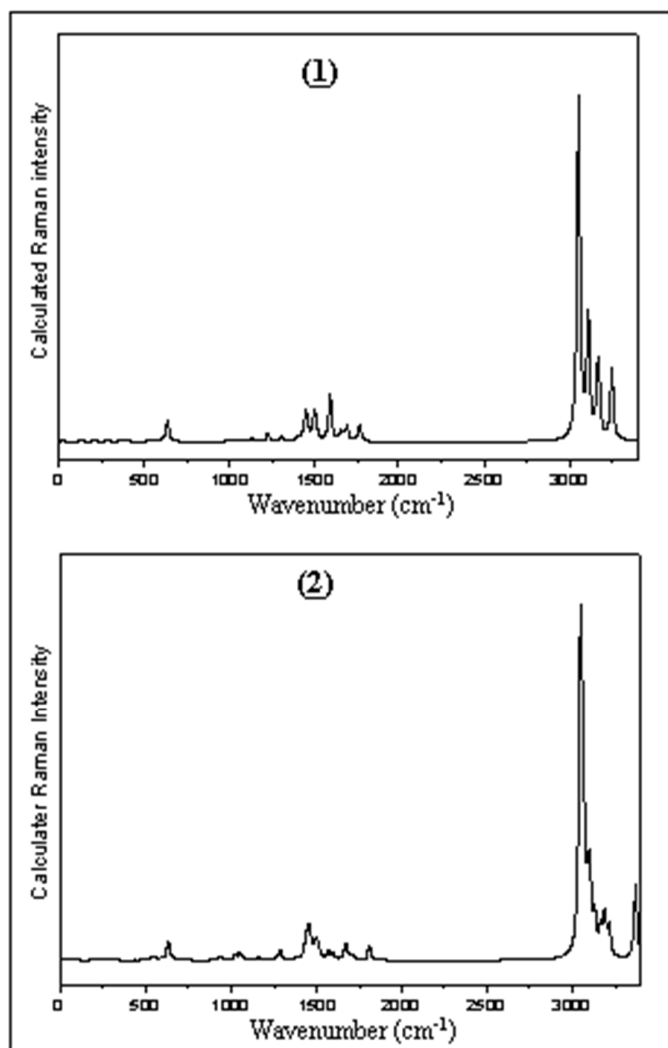


Figure S9. Theoretical Raman spectrum of **(1)** and **(2)**.

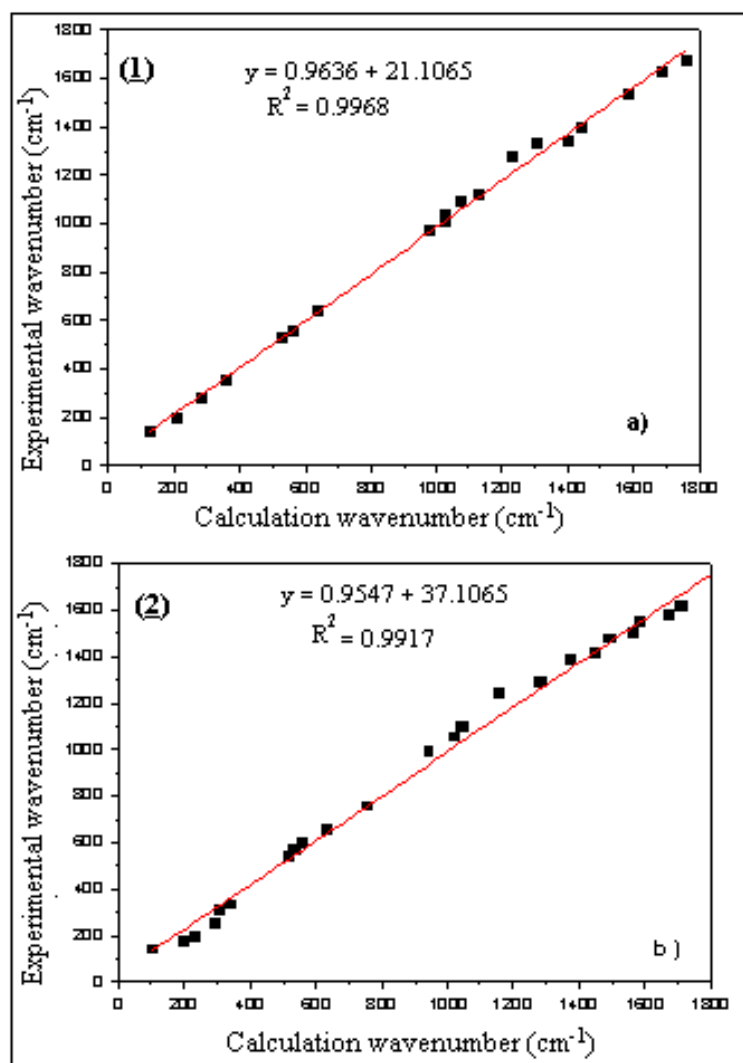


Figure S10. Comparison between experimental and calculated Raman frequencies of (1) and (2)