

## *Supporting materials*

### **A ladder based on paddlewheel diruthenium(II, II) rungs connected by TCNQ rails: a polymorph of the hexagonal 2-D network phase**

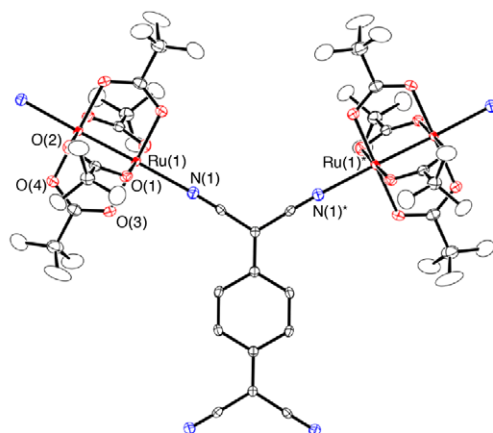
Natsuko Motokawa, Tomomi Oyama, Satoshi Matsunaga, Hitoshi Miyasaka,\* Kuniyisa Sugimoto, Masahiro Yamashta, Nazario Lopez and Kim R. Dunbar

#### Contents

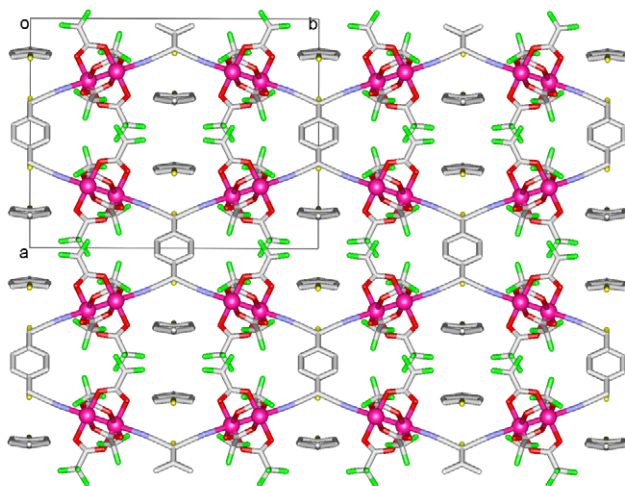
**Fig. S1** ORTEP drawing (a) and a two-dimensional network (b) of  $[\{\text{Ru}_2(\text{O}_2\text{CCF}_3)\}_4\text{TCNQ}]\cdot 3(4\text{-chlorotoluene})$  (**1c**). Hydrogen atoms and solvent molecules, three 4-chlorotoluene molecules, were omitted for clarity.

**Fig. S2** A powder reflection spectrum of **3**, together with those of TCNQ, LiTCNQ, and  $[\text{Ru}_2(\text{O}_2\text{CCF}_3)_4]$ , in the region of UV-Vis.

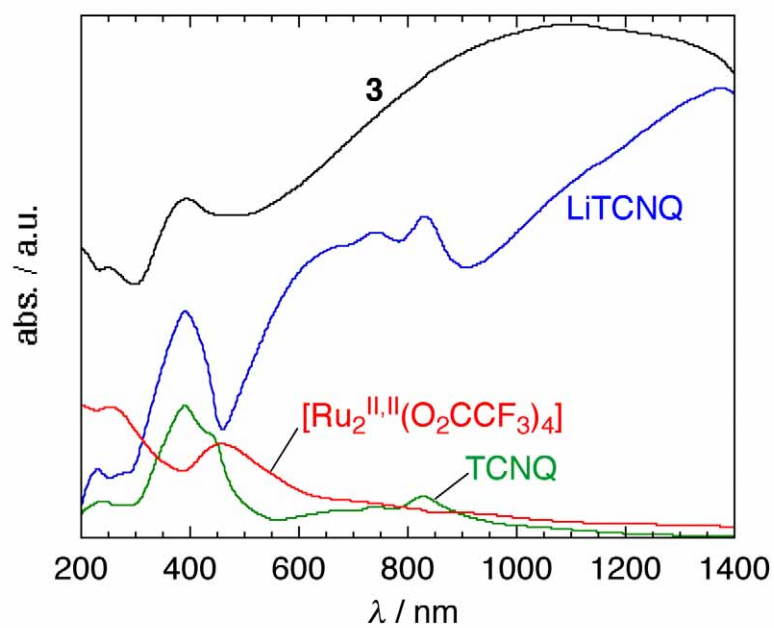
a)



b)



**Fig. S1** ORTEP drawing (a) and a two-dimensional network (b) of  $[\{\text{Ru}_2(\text{O}_2\text{CCF}_3)\}_4\text{TCNQ}]\cdot 3(4\text{-chlorotoluene})$  (**1c**). Hydrogen atoms and solvent molecules, three 4-chlorotoluene molecules, were omitted for clarity.



**Fig. S2** A powder reflection spectrum of **3**, together with those of TCNQ, LiTCNQ, and [Ru<sub>2</sub>(O<sub>2</sub>CCF<sub>3</sub>)<sub>4</sub>], in the UV-Vis range, where BaSO<sub>4</sub> was used for background.