

## Supporting Information

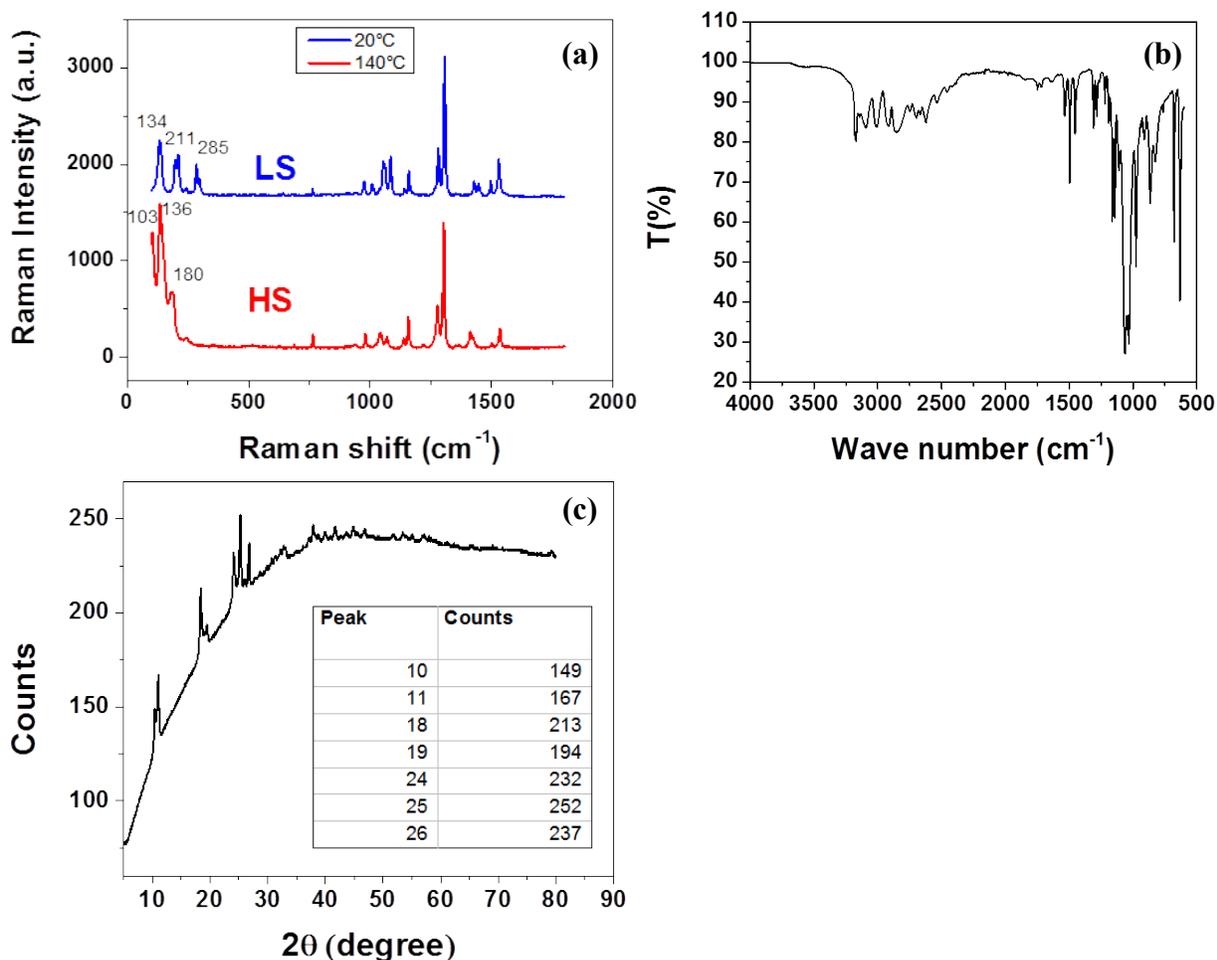
### Photocurrent phenomena across the bistability region in $[\text{Fe}(\text{Htrz})_2(\text{trz})](\text{BF}_4)$ spin crossover micro-rods

Constantin Lefter <sup>a,b</sup>, Reasmei Tan <sup>c</sup>, Julien Dugay <sup>c</sup>, Simon Tricard <sup>a</sup>, Gábor Molnár <sup>a</sup>, Lionel Salmon <sup>a</sup>,  
Julian Carrey <sup>c</sup>, Aurelian Rotaru <sup>b\*</sup>, Azzedine Bousseksou <sup>a\*</sup>

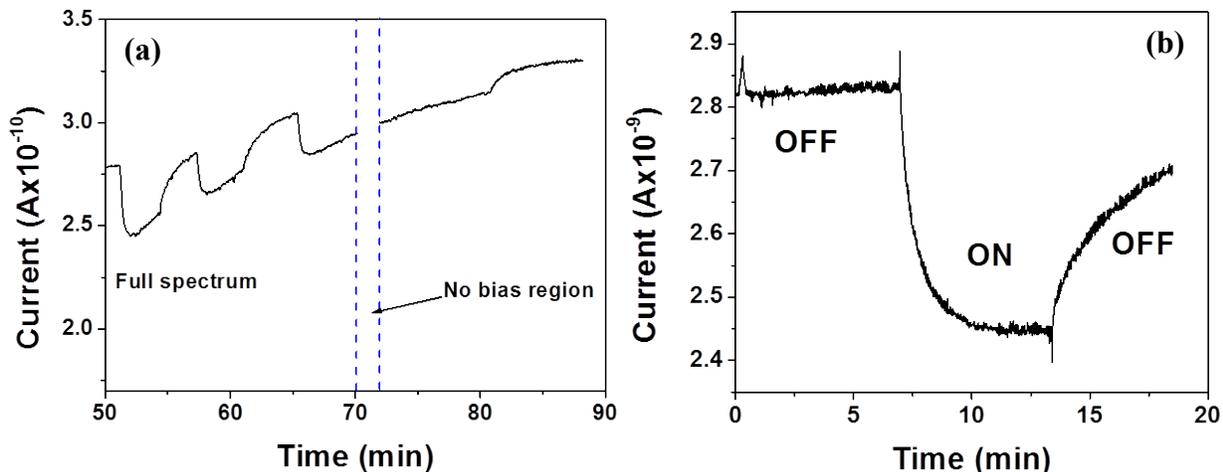
<sup>a</sup> LCC, CNRS & Université de Toulouse (UPS, INP), Toulouse, France

<sup>b</sup> Faculty of Electr. Eng. & Computer Sci. & AMNOL, Stefan cel Mare University, Suceava, Romania

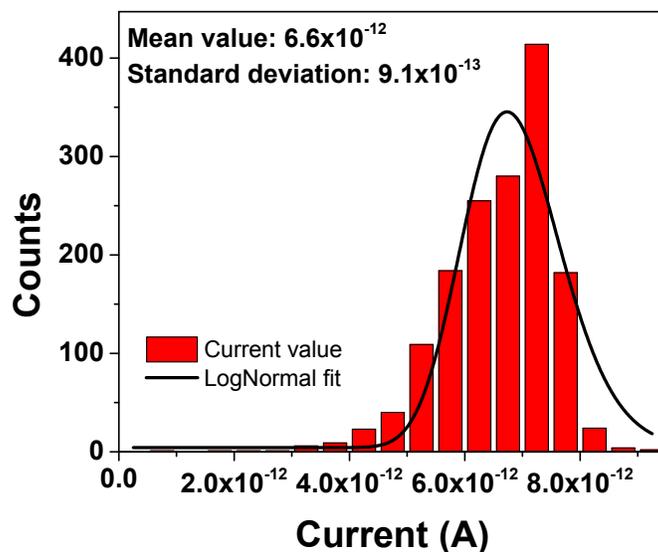
<sup>c</sup> LPCNO, INSA, CNRS, Université de Toulouse, Toulouse, France



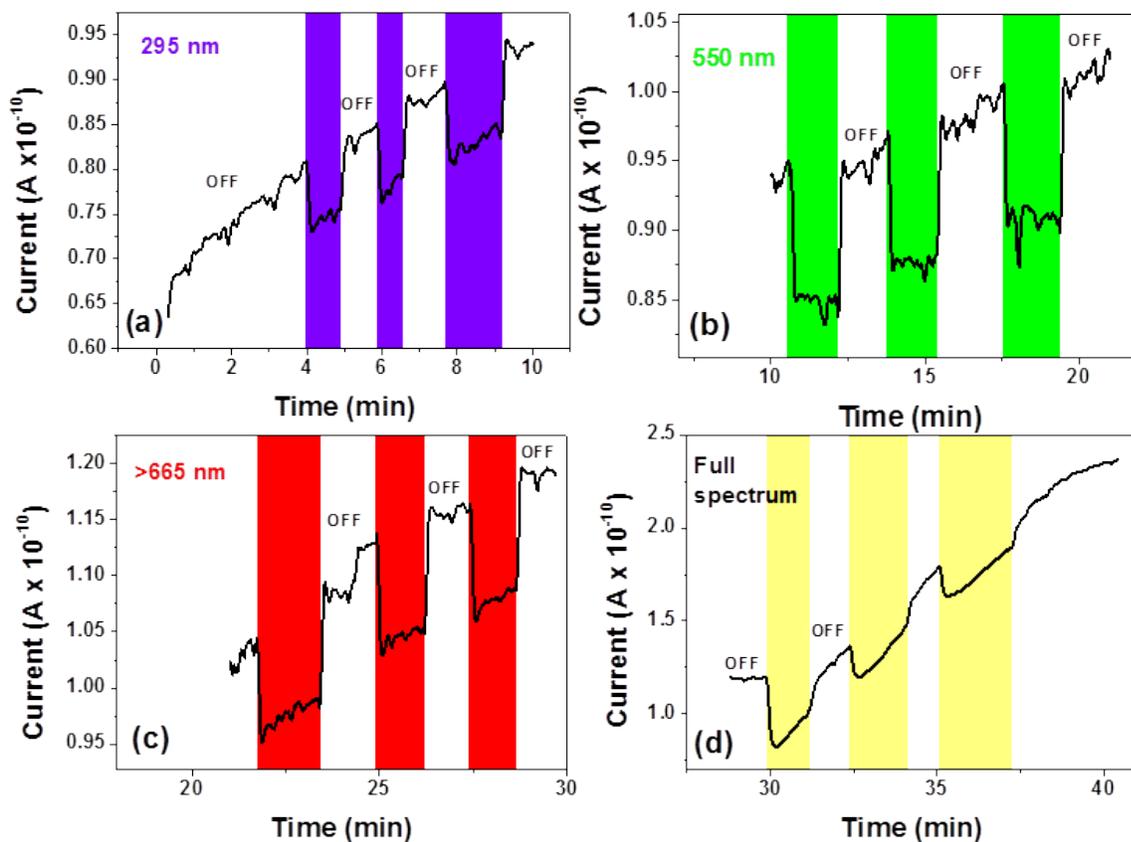
**Figure S1** (a) Raman spectra (633 nm excitation) of  $[\text{Fe}(\text{Htrz})_2(\text{trz})](\text{BF}_4)$  in the LS (20 °C) and HS (140 °C) states. (b) FTIR spectra recorded at room temperature. (c) XRD diffractogram and tabulated peak positions acquired at room temperature. These data are in good agreement with previous results on the same compound published in the literature (see ref. R1-R).



**Figure S2 (a)** Photocurrent variation recorded in air at 95 °C during light irradiation with full spectrum. Between 70 and 72 minutes the voltage bias was cut off. The current drift tendency was not changed by bias removal. **(b)** Current intensity measured in dark (OFF) – light (ON) – dark (OFF) sequence at 95 °C in LS state. The current drift is not present in the first OFF region. In the ON region the sample was irradiated with light and the current intensity dropped. When the light was switched OFF the current does not recover in the same manner, instead it presents an increasing current drift.



**Figure S3** Current intensity distribution in HS state and lognormal fit. The detection limit of the photocurrent is defined as three times the standard deviation of the dark current, *i.e.* 2.7 pA, which is *ca.* 40 % of the current intensity.



**Figure S4** Photocurrent variation recorded in air at 95 °C during light irradiation at different wavelengths: (a) 295 nm (b) 550 nm, (c) >665 nm and (d) full spectrum.

R1 A. Rotaru, J. Dugay, R. P. Tan, I. y. A. Gural'skiy, L. Salmon, P. Demont, J. Carrey, G. Molnar, M. Respaud and A. Bousseksou, *Advanced Materials*, 2013, **25**, 1745-1749.

R2 N. O. Moussa, D. Ostrovskii, V. M. Garcia, G. Molnar, K. Tanaka, A. B. Gaspar, J. A. Real and A. Bousseksou, *Chemical Physics Letters*, 2009, **477**, 156-159.

R3 A. Grosjean, P. Négrier, P. Bordet, C. Etrillard, D. Mondieig, S. Pechev, E. Lebraud, J.-F. Létard and P. Guionneau, *European Journal of Inorganic Chemistry*, 2013, **5-6**, 796-802.