

## Supplementary Material

### Photoconduction in $[\text{Fe}(\text{Htrz})_2(\text{trz})](\text{BF}_4)\cdot\text{H}_2\text{O}$ nanocrystals

Celine Etrillard,<sup>a</sup> Vina Faramarzi<sup>b</sup>, Jean-Francois Dayen<sup>b</sup>, Jean-Francois Letard<sup>\*a</sup> and Bernard Doudin<sup>\*</sup>

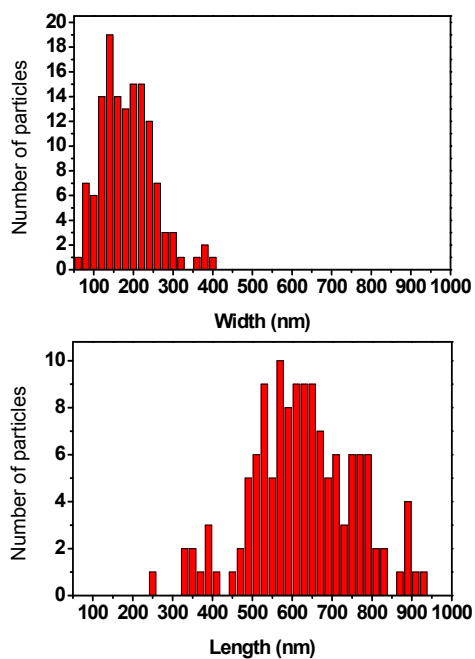


Fig S1. Size distribution of particles of  $[\text{Fe}(\text{Htrz})_2(\text{trz})]\text{BF}_4\cdot\text{H}_2\text{O}$  coordination polymer (with Htrz = 1,2,4-*H*-triazole and trz = the deprotonated triazolato(-) ligand) used as initial powder for trapping between electrodes.

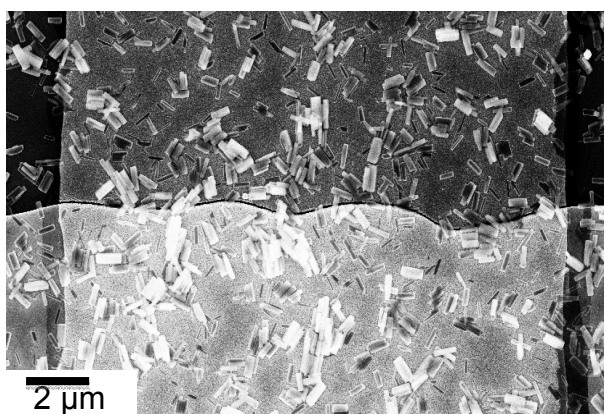


Fig S2. SEM micrograph of a 20 μm wide nanotrench covered by spin transition particles after drop casting.



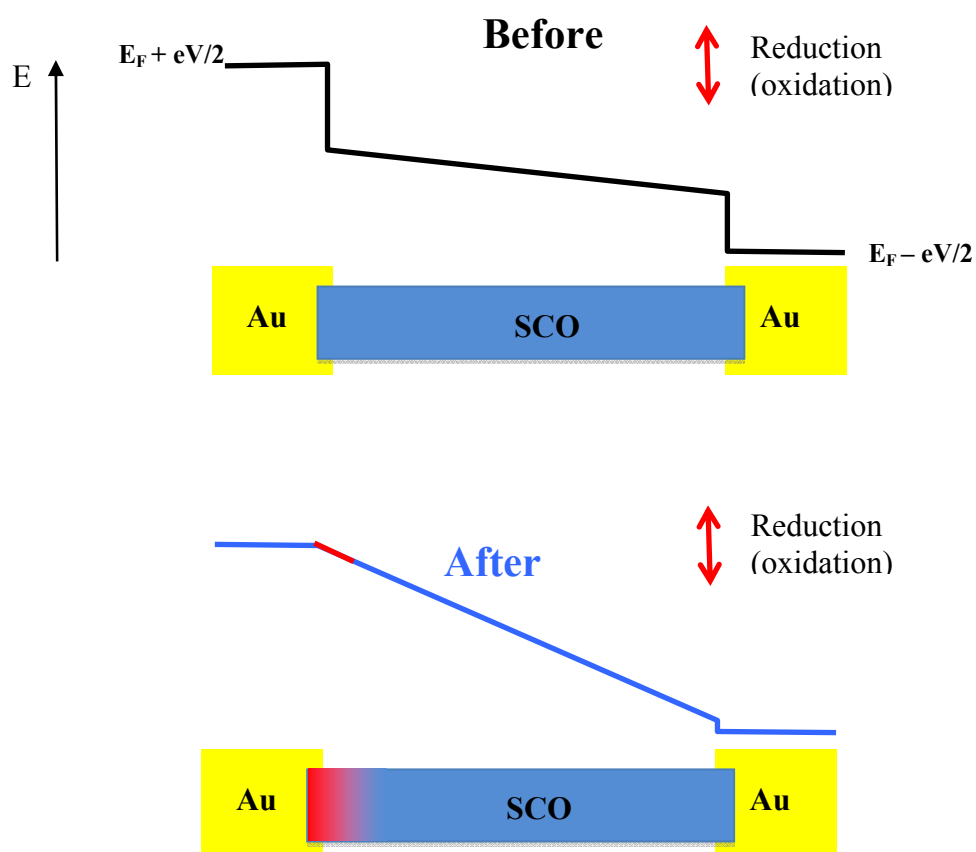


Fig. S5. Potential energy landscape of the SCO nanoparticle (long blue area) trapped between the two Au electrodes (yellow squares). In the 'Before' state, for as-deposited samples, the voltage drop occurs essentially at the interfaces, and the SCO particle is mostly equipotential, owing to the negligible current flowing. In the 'After' state, voltage poling results in much larger current flow, imposing a voltage drop occurring essentially through the entire particle. If we suppose that a given reduction or oxidation reaction occurs with a given energy threshold (related to oxidation or reduction potential), indicated by the arrow energy window, only a small fraction of the nanoparticle will experience this energy (potential) scale, limiting therefore the nanoparticle volume, indicated by the red area, where a change of oxidation state can be expected.