

Poster Presentation

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XRPD study of photo-induced HS→LS relaxation of hydrated $[\text{Fe}(\text{pyrazine})\text{Pt}(\text{CN})_4]$

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The 2D layer compound $[\text{Fe}(\text{pyrazine})\text{Pt}(\text{CN})_4]$ has received a lot of attention because of its spin transition with a large hysteresis at room temperature, the possibility of bidirectional light-switching, and its potential as sensor for various gases [1], and in a recent study it served as test case for time-resolved electron diffraction on the nano-second time scale [2]. The present study focuses on the photo-induced HS → LS relaxation of the hydrated compound monitored by synchrotron XRPD measurements at 10 K (Figure 1). For the title compound, the time evolution of the XRD pattern shows a complex relaxation behaviour, which can be modelled with an initial random relaxation followed by a nucleation and growth process.

[1] a) Agusti G. et al., *Chemistry of Materials*, 2008, 20, 6721; b) Cobo S. et al. *Angew. Chem. Int. Ed.*, 2006, 45, 5786; c) Cobo S. et al., *J. Amer. Chem. Soc.*, 2008, 130, 9019; d) Ohba M. et al., *Angew. Chem. Int. Ed.*, 2009, 48, 4767., [2] R. M. van der Veen, O.-H. Kwon, A. Tissot et al., *Nature Chemistry*, 2013, 5, 395

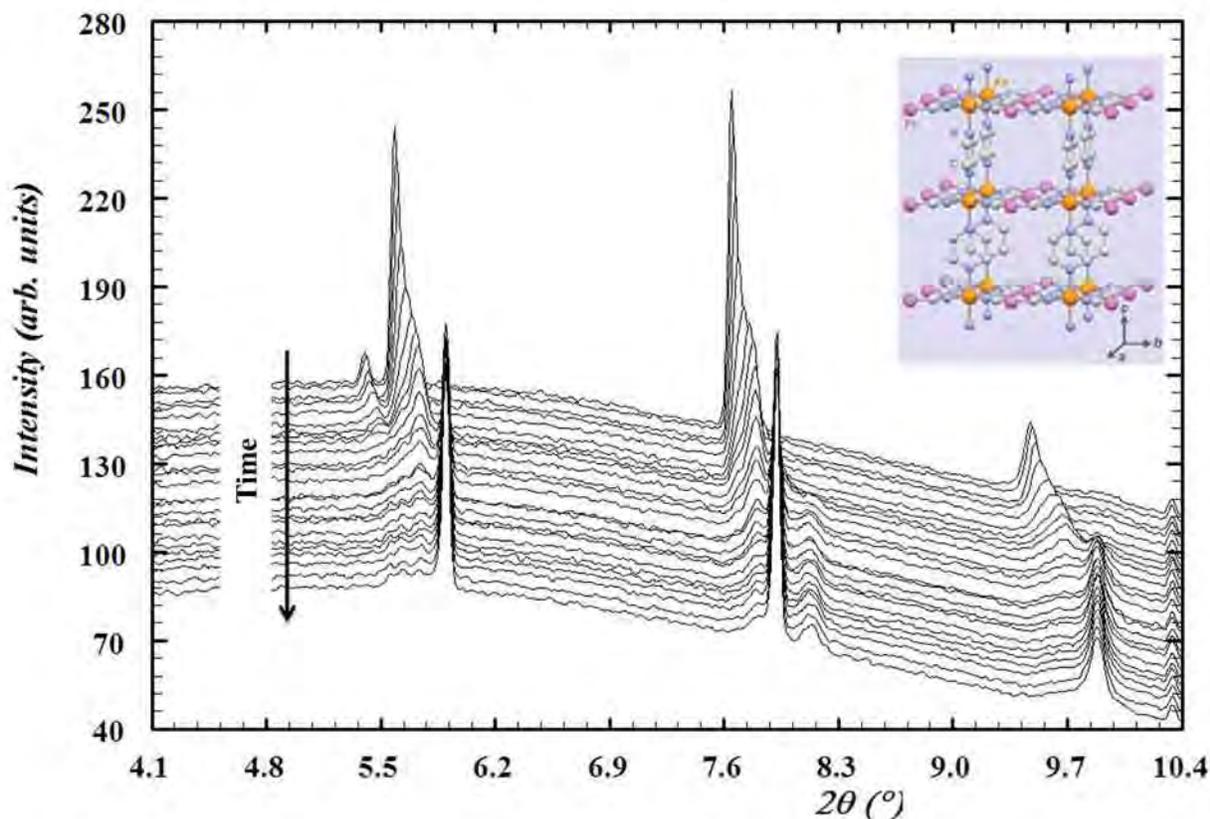


Figure 1. XRPD patterns of hydrated $[\text{Fe}(\text{pyrazine})\text{Pt}(\text{CN})_4]$ recorded at 10 K in intervals of 15 minutes following irradiation at 532 nm for 5 minutes.

Keywords: Spin crossover, Light induced phase transition