

## **Electronic Supplementary Information**

*Short descriptive title: The propagation of the thermal spin transition of Fe(btr)\_ videos 1-17*

### **Video legends:**

Videos 1, 2: The spin transition of a set of bare batch crystals of Fe-btr, on cooling at 0.5 K/min; on heating at 0.5 K/min (Figure 3).

Videos 3, 4: The spin transition of a second set of bare batch crystals of Fe-btr, in isothermal conditions after cooling at 0.2 K/min; on heating at 0.2 K/min (Figure 4).

Videos 5, 6: Dehydration of batch crystals of Fe-btr, at room temperature, under vacuum (Figure 6).

Videos 7-10: Repeated spin transition of a bare batch crystal of Fe-btr, embedded in oil, in isothermal conditions after cooling or heating at 0.2 K/min.

Videos 11, 12: The spin transition of a crystal of Fe-btr, selected from the batch, embedded in oil, in isothermal conditions after cooling at 0.2 K/min; on heating at 0.2 K/min (Figure 7a).

Video 13: The spin transition of another crystal of Fe-btr, selected from the batch, embedded in oil, in isothermal conditions after cooling at 0.2 K/min (Figure 7b).

Videos 14, 15: The spin transition of a carefully grown crystal of Fe-btr, embedded in oil, in isothermal conditions after cooling at 0.2 K/min; on heating at 0.2 K/min (Figure 7c).

Video 16: The spin transition of a third crystal of Fe-btr, selected from the batch, embedded in oil, in isothermal conditions after cooling at 0.2 K/min (Figure 7d).

Video 17: The spin transition of a further bare crystal of Fe-btr, selected from the batch, in isothermal conditions after cooling at 0.2 K/min (Figure 7e).

**Table of video files**

Video	Figure	Crystal type bare / in oil	Thermal mode		Video time	Real time	Speed factor(*)
			0.2 K/min	isothermal stage			
1	3	batch, bare	cooling (**)	-	13 s	10 min	variable
2			heating (**)	-	14 s	13 min	variable
3	4	batch, bare	cooling	120 K	16 s	1 min	× 4
4			heating	-	12 s	40 min	variable
5	6	batch, bare	cooling		22 s	5 min 30 s	× 15
6		(vacuum)	heating		22 s	5 min 30 s	× 15
7	B	batch, in oil (thick layer)	cooling	118 K	16 s	1 min	× 4
8			heating	141 K	31 s	8 min	× 15
9			cooling	118.5 K	27 s	2 min 30 s	× 5.5
10			heating	140 K	15 s	3 min 20 s	× 13
11	7 a	batch, in oil	cooling	118.8 K	43 s	2 min	× 3
12			heating	-	44 s	10 min	× 14
13	7 b	batch, in oil		119.5 K	28 s	3 min	× 6
14	7 c	carefully	cooling	107.9 K	13 s	1 min	× 4.5
15		grown, in oil	heating	-	26 s	22 min	× 50
16	7 d	batch, in oil	cooling	119.5 K	37 s	2 min	× 4
17	7 e	batch, bare	cooling	120.7 K	18 s	1 min 30 s	× 5

(\*) speed factor = real time / video time (\*\*) 0.5 K/min