

Study of a plate of the magnetocaloric material La(Fe,Co,Si)₁₃

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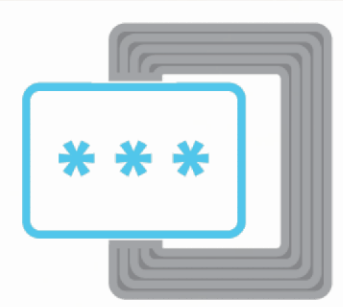
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Study of a plate of the magnetocaloric material $\text{La}(\text{Fe},\text{Co},\text{Si})_{13}$

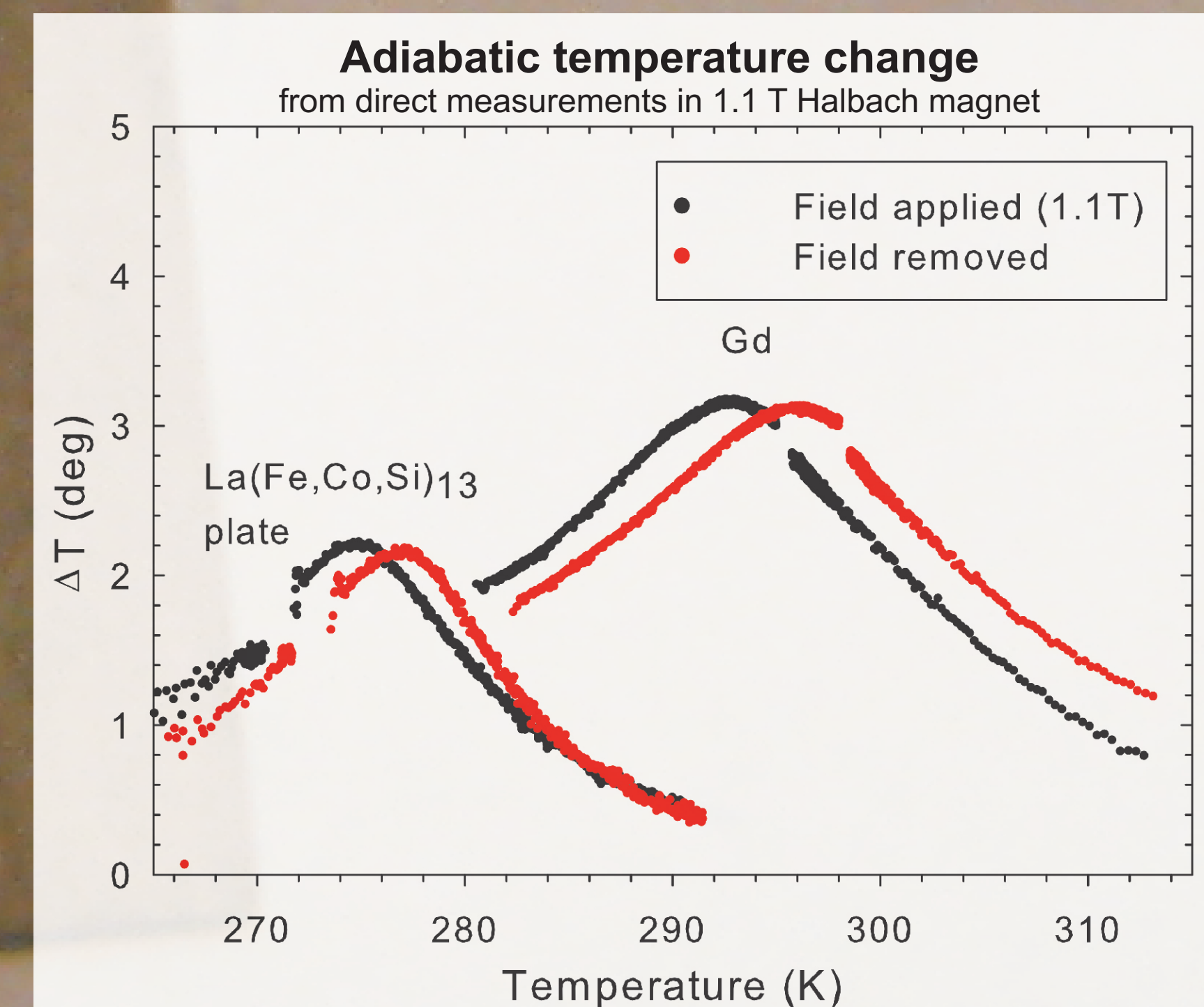
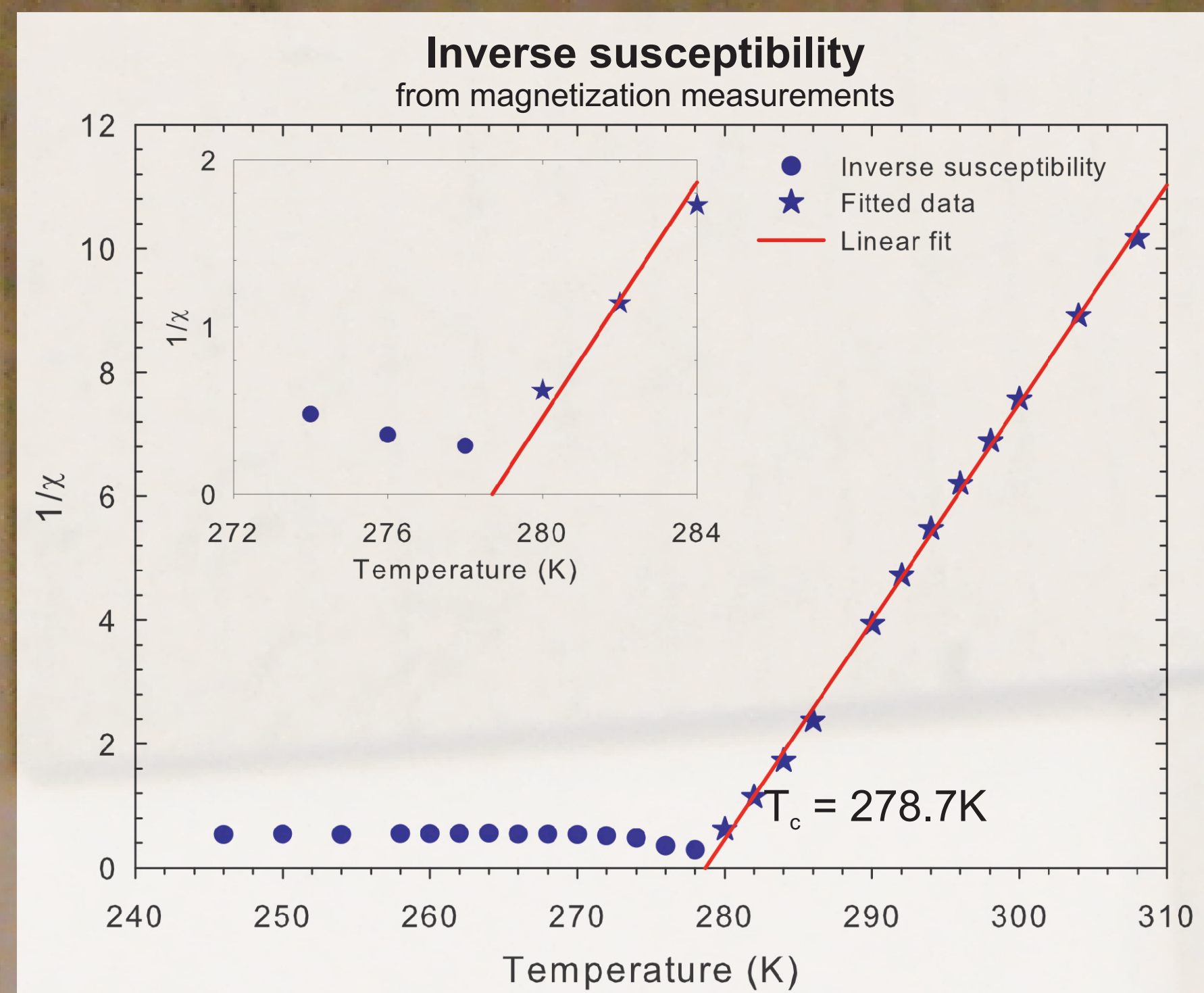
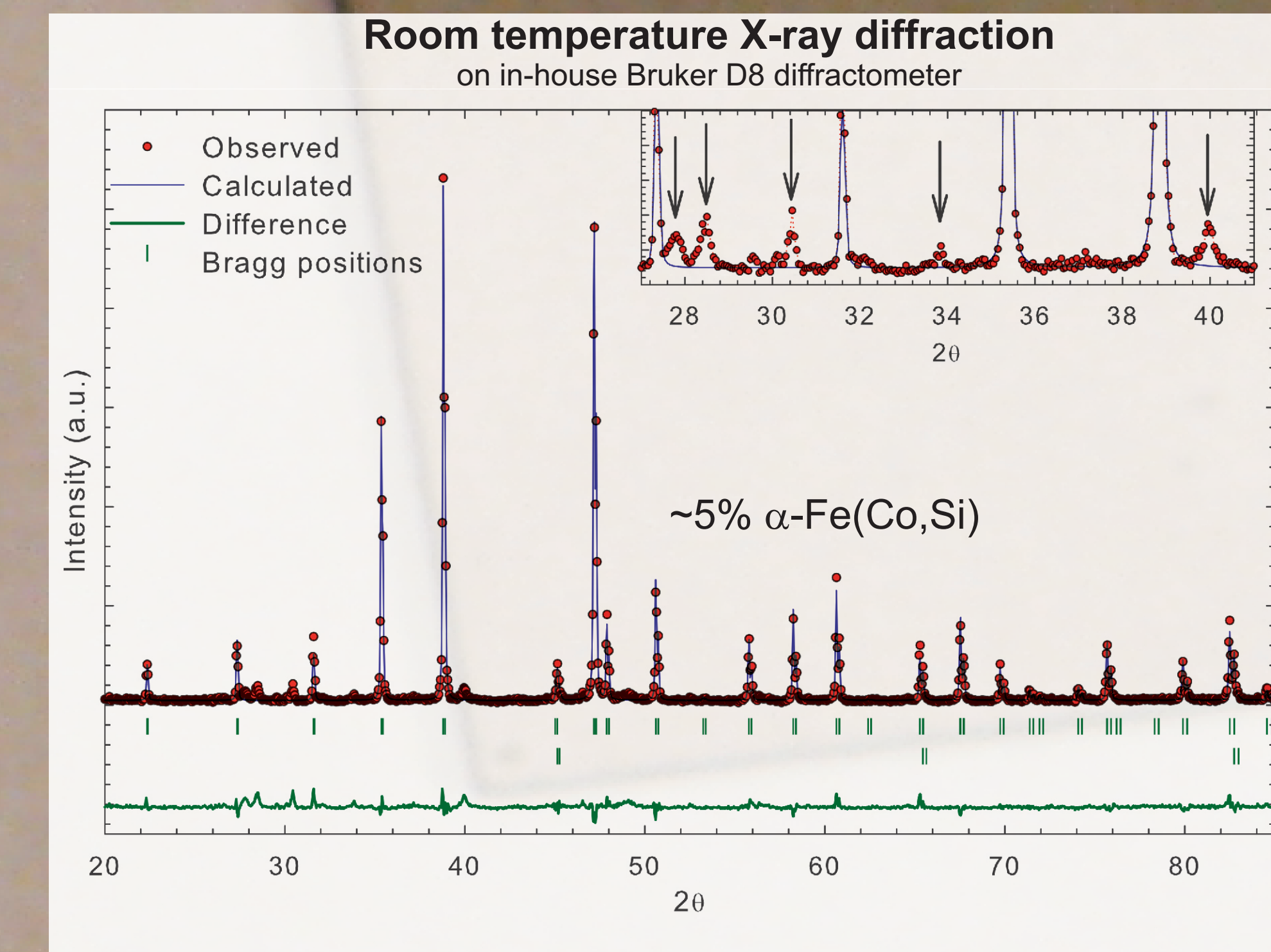
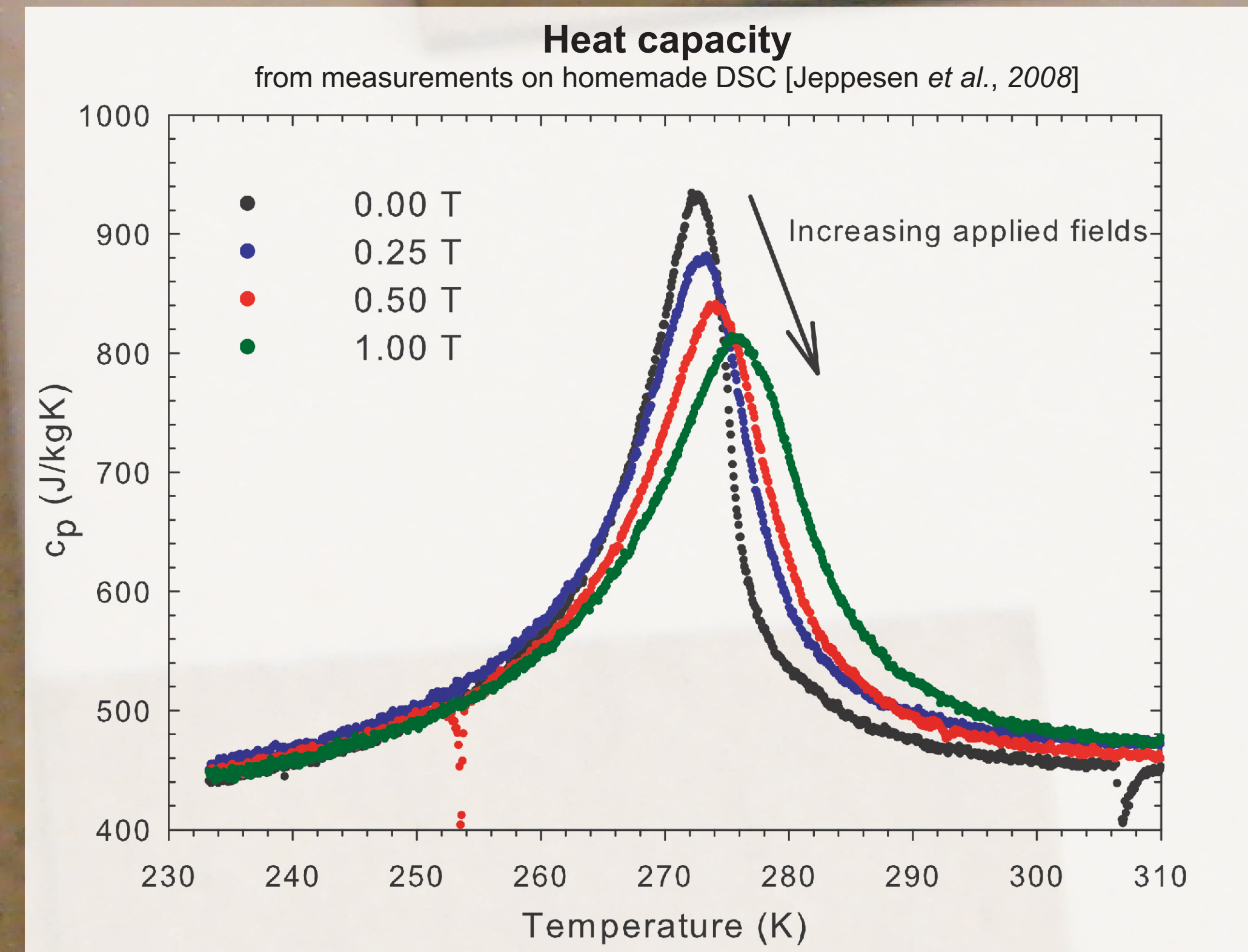
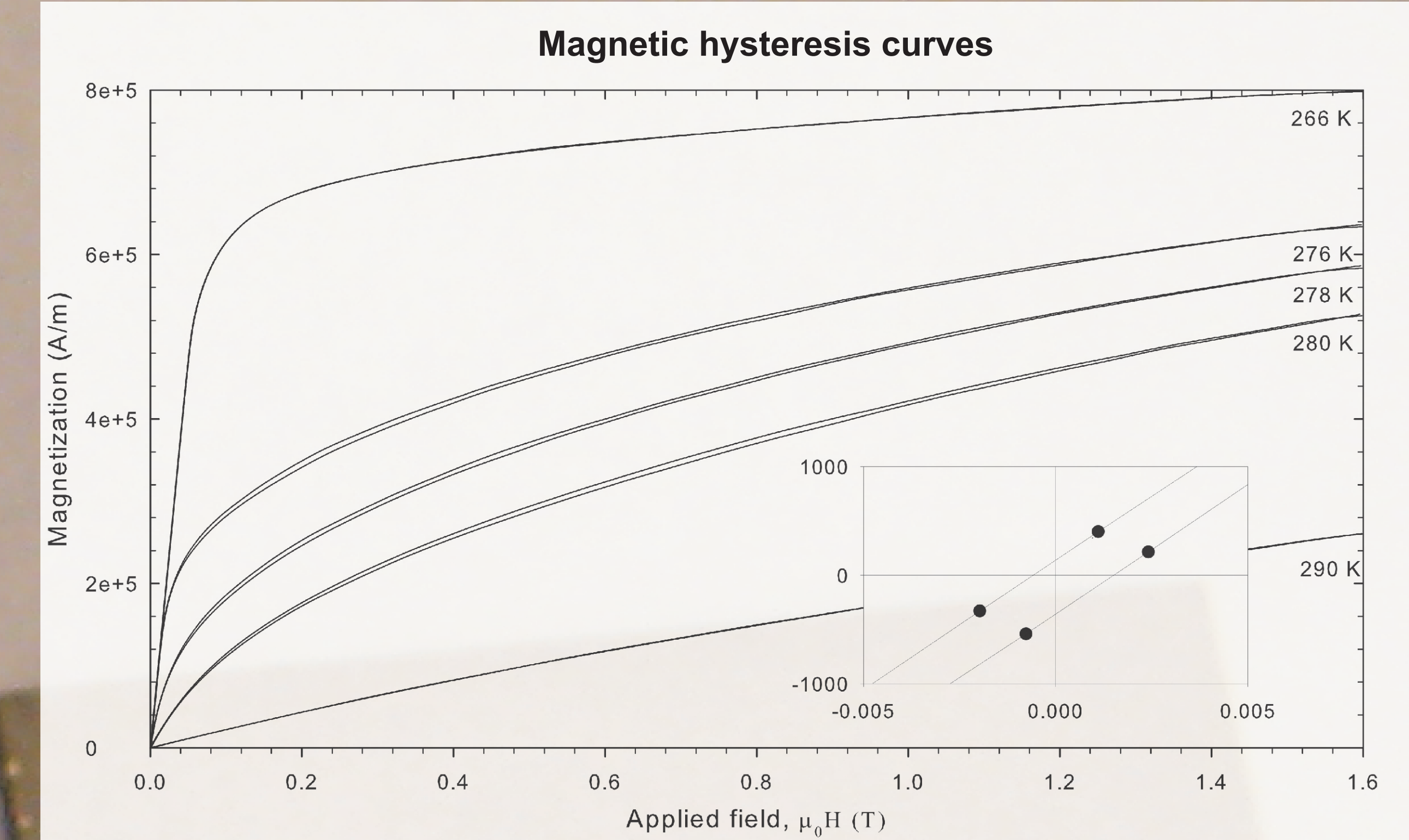
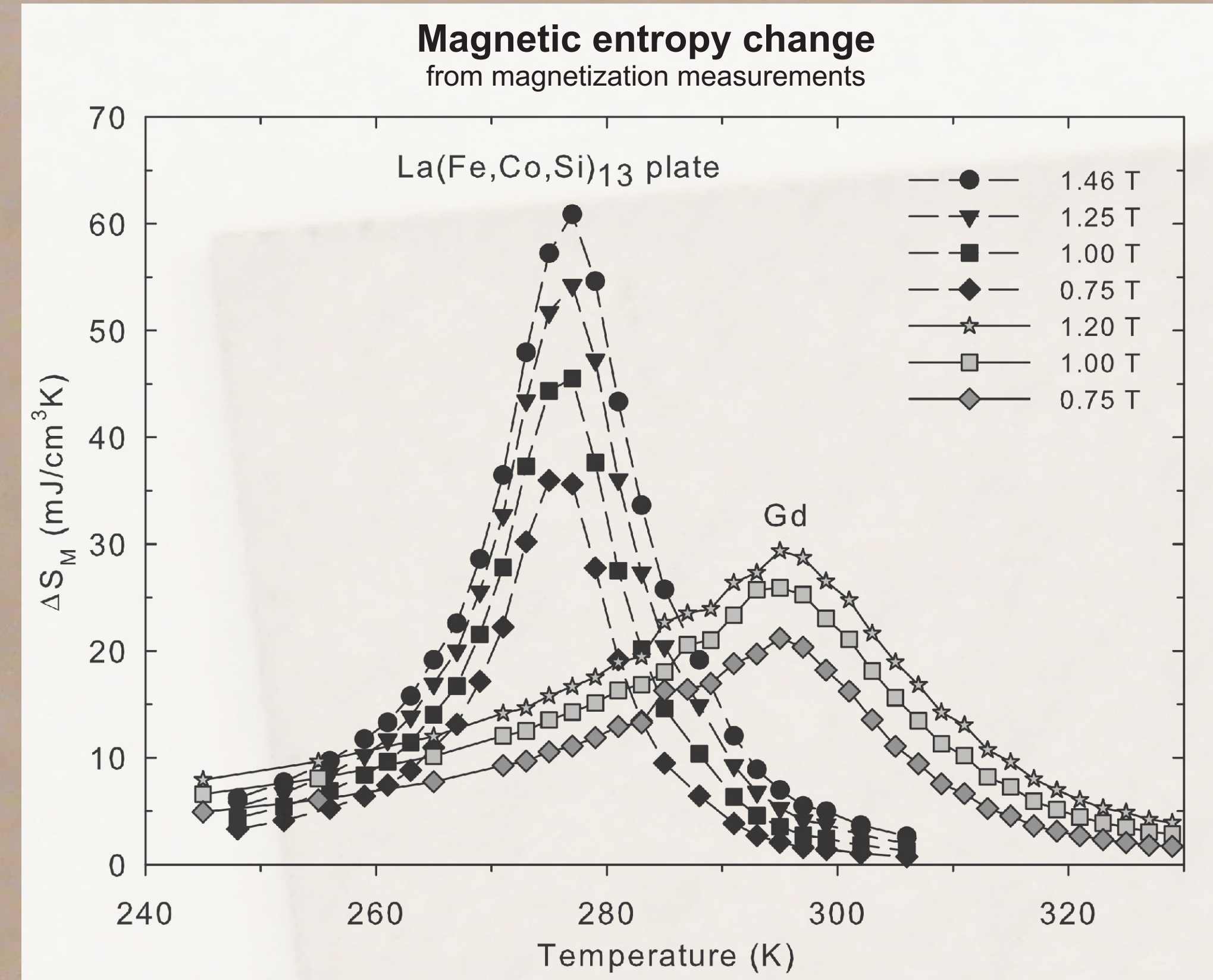


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Properties

$\Delta S_M(\Delta H, T)$	Significantly larger than that of Gd
$\Delta T_{ad}(\Delta H, T)$	~2K for 1.1T applied (Gd ~3K)
Tunability of T_c	Yes
Raw material costs	Low
Fabrication (sheet)	Yes
Large scale production	Possible with powder metallurgy [Katter <i>et al.</i> , 2008]
Hysteresis	None
Environmental concerns	None
Corrosion	Heavy corrosion in pure water. Greatly reduced in anti-freeze if sealed off from air.
Friability (brittleness)	Significant
Plate dimensions	20 x 25 x 0.9 mm
Nominal composition (from XFA)	$\text{La}(\text{Fe}_{0.851}\text{Co}_{0.066}\text{Si}_{0.083})_{13}$



References

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 Jeppesen *et al.* 2008, Rev. Sci. Instrum. 79(8): 083901.
 Katter *et al.*, 2008, IEEE Trans. Magn. 44: 3044-3047.

