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Title:	Crystal growth, structure and magnetic properties of Ca ₁₀ Cr ₇ O ₂₈
Authors:	Singh, Yogesh (/jspui/browse?type=author&value=Singh%2C+Yogesh)
Keywords:	Ca ₁₀ Cr ₇ O ₂₈ Crystal Cr ⁵⁺ ions
Issue Date:	2017
Publisher:	IOP Science
Citation:	Journal of Physics Condensed Matter, 29(2)
Abstract:	A detailed diffraction study of Ca ₁₀ Cr ₇ O ₂₈ is presented which adds significant new insights into the structural and magnetic properties of this compound. A new crystal structure type was used where the a and b axes are doubled compared to previous models providing a more plausible structure where all crystallographic sites are fully occupied. The presence of two different valences of chromium was verified and the locations of the magnetic Cr ⁵⁺ and non-magnetic Cr ⁶⁺ ions were identified. The Cr ⁵⁺ ions have spin- $\frac{1}{2}$ and form distorted kagome bilayers which are stacked in an ABC arrangement along the c axis. These results lay the foundation for understanding of the quantum spin liquid behavior in Ca ₁₀ Cr ₇ O ₂₈ which has recently been reported in Balz et al (2016 Nat. Phys. 12 942).
Description:	Only IISERM authors are available in the record.
URI:	https://iopscience.iop.org/article/10.1088/1361-648X/aa68eb/meta (https://iopscience.iop.org/article/10.1088/1361-648X/aa68eb/meta) http://hdl.handle.net/123456789/2568 (http://hdl.handle.net/123456789/2568)
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