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Title:	Synthesis and pressure and field-dependent magnetic properties of the kagome-bilayer spin liquid Ca ₁₀ Cr ₇ O ₂₈
Authors:	Balodhi, A. (/jspui/browse?type=author&value=Balodhi%2C+A.) Singh, Yogesh (/jspui/browse?type=author&value=Singh%2C+Yogesh)
Keywords:	Synthesis Synthesis of polycrystalline Spin-liquid material
Issue Date:	2017
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Citation:	Physical Review Materials, 1(2)
Abstract:	We report the synthesis of polycrystalline samples of the recently discovered spin-liquid material Ca ₁₀ Cr ₇ O ₂₈ and present measurements of the ambient and high pressure magnetic susceptibility χ versus temperature T , magnetization M versus magnetic field H at various T , and heat capacity C versus T at various H . The ambient pressure magnetic measurements indicate the presence of both ferromagnetic and antiferromagnetic exchange interactions with dominant ferromagnetic interactions and with the largest magnetic energy scale ~ 10 K. The $\chi(T)$ measurements under externally applied pressure of up to $P \approx 1$ GPa indicate the robust nature of the spin-liquid state despite relative increase in the ferromagnetic exchanges. $C(T)$ shows a broad anomaly at $T \approx 2.4$ K which moves to higher temperatures in a magnetic field. The evolution of the low temperature $C(T, H)$ and the magnetic entropy is consistent with frustrated magnetism in Ca ₁₀ Cr ₇ O ₂₈ .
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