

Abstract Submitted
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High-resolution thermal expansion measurements of $\text{BaCuSi}_4\text{O}_{10}$ and $\text{BaCuSi}_2\text{O}_6$ ¹ SUELI MASUNAGA, ALWYN REBELLO, J.J. NEUMEIER, Montana State Univ — $\text{BaCuSi}_4\text{O}_{10}$ and $\text{BaCuSi}_2\text{O}_6$ were used in many ancient Chinese artifacts as synthetic pigments, and recently named as Han Blue and Han Purple, respectively.² Besides being important synthetic pigments of ancient and modern times, these compounds have attracted scientific and technological interest due to their luminescent properties.³ Moreover, Han Purple is a spin-dimer compound with an interesting phase diagram and a potential solid state device for exploring quantum effects in magnetic field induced Bose-Einstein condensation.⁴ In this work, we study $\text{BaCuSi}_2\text{O}_6$ and $\text{BaCuSi}_4\text{O}_{10}$ single crystals grown by floating zone method and flux growth technique, respectively. The results of thermal expansion, specific heat, and magnetization measurements of these compounds will be presented in detail.

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⁴M. Jaime *et al.*, *Phys. Rev. Lett.* **93**, 087203 (2004).

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