

Abstract Submitted
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Raman Spectroscopy Analysis of a New Copper-Cysteamine Complex. HUSSEIN AKAFZADE, SURESH SHARMA, NADER HOZHABRI, WEI CHEN, LUN MA, University of Texas at Arlington — A recently synthesized copper-cysteamine complex with strong luminescence, $\text{Cu}_3\text{Cl}(\text{SR})_2$, where $\text{R} = \text{CH}_2\text{CH}_2\text{NH}_2$, has been identified with potential applications in radiation detection and cancer treatment.¹ In order to better understand the microstructure of this material, we have utilized Raman spectroscopy and several other characterization techniques to look into possible correlations between the microstructure and average crystal size in this material. The Raman spectroscopy and FTIR data identify numerous bonds having wavenumbers from 200 to 3500 cm^{-1} , SEM and EDS measurements reveal average crystal size ($\leq 4\mu\text{m}$) and relative elemental composition ($C = 48\%$, $N = 37.5\%$, $S = 5\%$, $Cl = 2.6\%$, $Cu = 7\%$), and XRD data identify the crystal structure. Additionally, there is evidence for much smaller crystals in the complex. Detailed data on the microstructure of the materials will be presented and discussed. ¹L. Ma, W. Chen, G. Schatte, W. Wang, A. G. Joly, Y. Huang, R. Sammyaiken, and M. Hossu, *J. Materials Chem., C*, **2**, 4239 (2014) .

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