

Abstract Submitted
for the TSF19 Meeting of
The American Physical Society

Demonstration Of Fluorescence Near the K-Absorption Edge in Back-Reflection Laue NICHOLAS SUMMERFIELD, REBECCA FORREST, University Of Houston — In Laue diffraction, the bremsstrahlung x-ray spectrum is used to obtain a diffraction image of a sample on the atomic scale. When using the bremsstrahlung beam on a sample, the sample may fluoresce which will hurt the contrast of the Laue diffraction image, however this phenomena can also be utilized in fields such as x-ray spectroscopy. The interaction between a sample material and incoming x-rays is specific to the sample material as every element has a unique absorption vs energy relationship and k-absorption edge. Different x-ray energies around the sample's absorption edge will result in the sample releasing a different flux of photons as it fluoresces. Changing the incoming x-ray intensity by changing the filament current, the energies of the x-rays are consistent, however the magnitude of fluorescence will change. Changing the voltage of the x-ray source will change this energy distribution and the intensity of the bremsstrahlung beam. In this poster, back-reflection Laue is used to capture the fluorescence of molybdenum (Mo), antimony (Sb), and silver (Ag) about their absorption edges at different x-ray source current and voltages.

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Date submitted: 29 Sep 2019

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