EXAFS Studies of the Thermoelectric $\text{Ba}_8\text{Ga}_{16}\text{Sn}_{30}$

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Thermoelectric materials have the useful ability to convert a temperature gradient into an electric potential, and *vice versa*. This important class of materials has already found use in space and automotive technologies, but currently efficiency has become a limiting factor. It is hoped that by probing and understanding more deeply the detailed mechanisms of thermal and electrical transport in thermoelectric materials one can improve this efficiency for myriad uses in the energy sector. Here we present EXAFS data from SSRL on the thermoelectric clathrate $\text{Ba}_8\text{Ga}_{16}\text{Sn}_{30}$. Extended X-ray Absorption Fine Structure (EXAFS) is an element-specific x-ray absorption technique that allows one to probe the local structure of materials up to $\sim$6Å. We show that the structure of this clathrate is particularly suited to having thermal transport properties conducive to decent thermoelectric behavior.

Kavli 2nd Floor
Conference Room
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12:30p
Light refreshments provided!