

## **LATTICE SOFTENING**

Rishi Raj, University of Colorado Boulder  
rishi.raj@colorado.edu

Key Words: phonons, Frenkel Defects, Flash Sintering, Elastic Modulus, In-situ.

In-situ measurements of the elastic modulus with 8YSZ in the state of flash reveal a large softening in the presence of the electric field. This discovery may explain the lowering of the energy barrier for the formation of Frenkel defects. The results also support the consequences from recent molecular dynamics calculations (Jongmann and Wolf) that reveal that Frenkels can form by the injection of phonons at a high rate, while holding the specimen above the Debye Temperature. These points will be raised for discussion.