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Professional Preparation

California Institute of Technology, USA	Materials Science	Ph.D. 2016
Advisor: Prof. G. Jeffrey Snyder		
Thesis: <i>Thermoelectric Properties of Bismuth Antimony Telluride Alloys</i>		
University of Cambridge, UK	Physics	M. Nat. Sci. 2006
Advisor: Cavendish Prof. Sir Richard Friend, FRS		
Thesis: <i>Spectroscopy of Conjugated Polymers at High Pressure using a Diamond Anvil Cell</i>		
University of Cambridge, UK	Physics	B.A. 2005

Appointments

09.2019 – Present	Assistant Professor	Materials Science & Engineering, Hongik Univ.
07.2006 – 08.2018	Senior Researcher	Samsung Advanced Institute of Technology
06.2015 – 06.2016	Visiting Scholar	Northwestern Univ.

Selected Journal Publication

- †K. H. Lee, †**H.-S. Kim**, W. H. Shin, S. Y. Kim, J.-H. Lim, S. W. Kim, S.-I. Kim, “Nanoparticles in $\text{Bi}_{0.5}\text{Sb}_{1.5}\text{Te}_3$: a prerequisite defect structure to scatter the mid-wavelength phonons between Rayleigh and geometry scatterings”, *Acta Mater.*, 2019 (In Press, Journal Pre-proof) (†contributed equally to this work)
- †**H.-S. Kim**, †K. H. Lee, J. Yoo, W. H. Shin, J. W. Roh, J.-Y. Hwang, S. W. Kim, S.-I. Kim, “Suppression of bipolar conduction via bandgap engineering for enhanced thermoelectric performance of p -type $\text{Bi}_{0.4}\text{Sb}_{1.6}\text{Te}_3$ alloys”, *J. Alloys Compd.*, 741, 869-874, 2018 (†contributed equally to this work)
- H.-S. Kim**, N. A. Heinz, Z. M. Gibbs, Y. Tang, S. D. Kang, G. J. Snyder, “High thermoelectric performance in $(\text{Bi}_{0.25}\text{Sb}_{0.75})_2\text{Te}_3$ system due to band convergence and independent carrier concentration control”, *Mater. Today*, 20, 452-459, 2017
- H.-S. Kim**, S. D. Kang, Y. Tang, R. Hanus, G. J. Snyder, “Dislocation strain as the mechanism of phonon scattering at grain boundaries”, *Mater. Horiz.*, 3, 234, 2016
- Y. Tang, Z. M. Gibbs, L. A. Agapito, G. Li, **H.-S. Kim**, M. B. Nardelli, S. Curtarolo, G. J. Snyder, “Convergence of multi-valley bands as the electronic origin of high thermoelectric performance in CoSb_3 skutterudites”, *Nat. Mater.*, 14, 1223, 2015
- †S. I. Kim, †K. H. Lee, †H. A. Mun, **H.-S. Kim**, S. W. Hwang, J. W. Roh, D. J. Yang, W. H. Shin, X. S. Li, Y. H. Lee, G. J. Snyder, S. W. Kim, “Dense dislocation arrays embedded in grain boundaries for high-performance bulk thermoelectrics”, *Science*, 348, 109-114, 2015 (†contributed equally to this work)
- H.-S. Kim**, Z. M. Gibbs, Y. Tang, W. Heng, G. S. Snyder, “Characterization of Lorenz number with Seebeck coefficient measurement”, *APL Materials*, 3, 041506, 2015