

# Sang-il Kim 김상일

*Assistant Professor*

Advanced Energy Materials Lab

Department of Materials Science and Engineering, UNIVERSITY OF SEOUL

Seoulsiripdae-ro 163, Dongdaemun-gu, Seoul 02504, South Korea

TEL +82.2.6490.2414, Mobile +82.10.5028.3163

[sang1.kim@uos.ac.kr](mailto:sang1.kim@uos.ac.kr); [sikim2@gmail.com](mailto:sikim2@gmail.com)

## WORK EXPERIENCE

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<b>Department of Materials Science and Engineering, University of Seoul</b>	Seoul, South Korea
<i>Assistant Professor</i>	03/2016 - Current
<b>Samsung Advanced Institute of Technology SAIT, Samsung Electronics</b>	Suwon, South Korea
<i>R&amp;D Staff member/Researcher</i>	10/2007-02/2016

## EDUCATION

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<b>University of Wisconsin – Madison</b>	Madison, Wisconsin, USA
<b>Ph.D.</b> , Materials Science Program	09/2001 – 08/2007
Thesis Title: <i>Critical Current Density in <math>YBa_2Cu_3O_{7-x}</math> Coated Conductors</i>	
Committee: <b>Prof. David C. Larbalestier (Advisor)</b> , Prof. C.-B. Eom, Prof. E. Hellstrom, Prof. P. Evans, Prof. M. Rzhowski	
<b>M.S.</b> , Materials Science Program,	09/2001 – 12/2004
<b>Korea Advanced Institute of Science and Technology (KAIST)</b>	Daejeon, South Korea
<b>B.S.</b> , Materials Science and Engineering,	03/1997 – 08/2001

## RESEARCH FOCUS

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### Thermoelectric Materials/Energy Materials

BiSbTe-based thermoelectric bulk alloys, Nanocomposite Materials, Thermoelectric thin films

### 2D Layered Materials

Metal Chalcogenide, Post-transition metal chalcogenide

## SELECTED JOURNAL PUBLICATIONS

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Band Convergence in Thermoelectric Materials: Theoretical Background and Consideration on Bi-Sb-Te alloys, *ACS Applied Energy Materials*, accepted (2020)

Nanoparticles in Bi<sub>0.5</sub>Sb<sub>1.5</sub>Te<sub>3</sub>: a prerequisite defect structure to scatter the mid-wavelength phonons between Rayleigh and geometry scatterings, *Acta Materialia*, online (2019)

Enhanced thermoelectric transport properties of n-type InSe due to emergence of the flat band by Si doping, *Inorganic Chemistry Frontier* (2019)

Synergetic effect of grain size reduction on electronic and thermal transport properties by selectively-suppressed minority carrier mobility and enhanced boundary scattering in Bi<sub>0.5</sub>Sb<sub>1.5</sub>Te<sub>3</sub> alloys, *Scripta Materialia*, **160**, 15 (2019)

High thermoelectric performance of melt-spun CuxBi<sub>0.5</sub>Sb<sub>1.5</sub>Te<sub>3</sub> by synergetic effect of carrier tuning and phonon engineering, *Acta Materialia*, **158**, 289 (2018)

Metallic conduction induced by direct anion site doping in layered SnSe<sub>2</sub>, *Scientific Reports*, **6**, 19733 (2016)

Dense dislocation arrays embedded in grain boundaries for high-performance bulk thermoelectrics, *Science*, **348**, 109 (2015)