
Miso Kim

Assistant Professor, Advanced School of Materials Science and Engineering,
Sungkyunkwan University (SKKU)

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Nationality: Republic of Korea

Education

Massachusetts Institute of Technology (MIT)

- ◆ Ph. D. in Materials Science and Engineering, February 2012
Thesis Title: Materials and Device Design for MEMS Piezoelectric Mechanical Vibration Energy Harvesters
Advisor: Prof. Brian L. Wardle
- ◆ M. S. in Materials of Science and Engineering, September 2007
Thesis title: Cr-Ga-N Materials for Negative Electrodes in Li Rechargeable Batteries: Structure, Synthesis and Electrochemical Performance
Advisor: Prof. Yet-Ming Chiang

Seoul National University (SNU)

- ◆ B. S. in Materials Science and Engineering, February 2004
Summa Cum Laude, Advisor: Prof. Han-il Yoo

Myungduk Foreign Language High School

- ◆ Major: English / Minor: French
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Professional Experience

Sungkyunkwan University (SKKU)

Assistant Professor, February 2021-present

Korea Research Institute of Standards and Science (KRISS)

Senior Research Scientist May 2012-February 2021

University of Cambridge, UK

Visiting scholar August 2018 – November 2018

Argonne National Laboratory

Guest Graduate Student, September 2010 -August 2011

Massachusetts Institute of Technology

Research Assistant, September 2004 - August 2010

Honors & Awards

Prime Minister's Commendation 과학정보통신의 날 국무총리표창, 2021

ACS Nano Rising Star, 2020

Outstanding Young Investigator Award, The Korean Institute of Metals and Materials, 2020

Samsung Lee Gun Hee Scholarship Foundation, 2004-2009

High Honor Student from Engineering College of Seoul National University, 2004

Fellowship from Seoul National University, 2000-2004

SELECTED JOURNAL PUBLICATIONS

Beyond-Materials for Sustainable Power Generation

Miso Kim*

2021 IEEE 34th International Conference on Micro Electro Mechanical Systems (MEMS), 149-152

Phononic band gap of a quarter-wave stack for enhanced piezoelectric energy harvesting

Soo-Ho Jo, Heonjun Yoon, Yong Chang Shin, Wonjae Choi, Choon-Su Park, **Miso Kim*** & Byeng D. Youn*

International Journal of Mechanical Sciences, 189, 106003 (2021)

Partitioned gradient-index phononic crystals for full phase control

Jaeyub Hyun, Miso Kim*, and Wonjae Choi*

Scientific Reports 10,14630 (2020)

Enhanced Energy Transfer and Conversion for High Performance Phononic Crystal-Assisted Elastic Wave Energy Harvesting

Tae-Gon Lee, Soo-Ho Jo, Hong Min Seung, Sun-Woo Kim, Eun-Ji Kim, Yong Chang Shin, Heonjun Yoon, Byeng D. Youn, Sahn Nahm*, and **Miso Kim***

Nano Energy, 78, 105226 (2020)

Solvent-controlled crystalline beta-phase formation in electrospun P(VDF-TrFE) fibers for enhanced piezoelectric energy harvesting

Miso Kim*, Sooun Lee, Yong-il Kim

APL Materials 8, no. 7 (2020): 071109

Achromatic acoustic gradient-index phononic crystal lens for broadband focusing

Jaeyub Hyun, Wan-Ho Cho, Choon-Su Park, Jiho Jang, **Miso Kim***

Applied Physics Letters 116, no. 23 (2020): 234102, (*Featured Article, Highlighted in Scilight*)

Gradient-index phononic crystals for omnidirectional acoustic wave focusing and energy harvesting

Jaeyub Hyun, Choon-Su Park, Jiho Jang, Wan-Ho Cho, **Miso Kim***

Applied Physics Letters 116, no. 23 (2020): 234101

Elastic wave localization and harvesting using double defect modes of a phononic crystal

Soo-Ho Jo, Heonjun Yoon, Yong Chang Shin, **Miso Kim*** & Byeng D. Youn*

Journal of Applied Physics 127 (16), 164901 (2020) (*selected as Cover & Featured Article*)

Designing a phononic crystal with a defect for energy localization and harvesting: Supercell size and defect location

Soo-Ho Jo, Heonjun Yoon, Yong Chang Shin, Wonjae Choi, Choon-Su Park, **Miso Kim*** and Byeng D. Youn*

International Journal of Mechanical Sciences 179, 105670 (2020)

Gradient-index phononic crystals for highly dense flexural energy harvesting

Jaeyub Hyun, Wonjae Choi*, and **Miso Kim***

Applied Physics Letters 115, no. 17 (2019):173901 (*selected as an Editor's Pick*)

Two-dimensional octagonal phononic crystals for highly dense piezoelectric energy harvesting

Park, Choon-Su, Yong Chang Shin, Soo-Ho Jo, Heonjun Yoon, Wonjae Choi, Byeng D. Youn*, and **Miso Kim***

Nano Energy 57 (2019): 327-337

Time-varying output performances of piezoelectric vibration energy harvesting under nonstationary random vibrations

Yoon, Heonjun, Miso Kim*, Choon-Su Park, and Byeng D. Youn*
Smart Materials and Structures 27, no. 1 (2017): 015004.

Effect of electrode configurations on piezoelectric vibration energy harvesting performance

Miso Kim*, John Dugundji, and Brian L. Wardle
Smart Materials and Structures 24, no. 4 (2015): 045026.

Efficiency of piezoelectric mechanical vibration energy harvesting

Miso Kim*, John Dugundji, and Brian L. Wardle
Smart Materials and Structures 24, no. 5 (2015): 055006.

Size effect of flexible proof mass on the mechanical behavior of micron-scale cantilevers for energy harvesting applications

Miso Kim*, Seungbum Hong, Dean J. Miller, John Dugundji, and Brian L. Wardle
Applied Physics Letters 99, no. 24 (2011): 243506.

Modeling and experimental verification of proof mass effects on vibration energy harvester performance

Miso Kim, Mathias Hoegen, John Dugundji, and Brian L. Wardle*
Smart Materials and Structures 19, no. 4 (2010): 045023.

Professional Service

Editor, International Journal of Precision Engineering and Manufacturing-Green Technology (IJPEM-GT), Springer, *IF* 4.171

Associate Editor, International Journal of Applied Ceramic Technology (ACT), Wiley, *IF* 1.762

Associate Editor, Journal of the Korean Society for Nondestructive Testing (KSNT)
