

NANO KOREA 2020

July 1~3, KINTEX, Korea

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EDUCATION

University of Michigan	Ph.D	Mechanical Engineering	2012
University of Michigan	MS	Mechanical Engineering	2009
Seoul National University, Seoul, Korea	BS	Mechanical Engineering	2004

PROFESSIONAL ACTIVITIES

- Associate Professor, Mechanical Engineering, Hongik University, Republic of, March 2013 to Present.
- General Affairs Director, Korean Society of Mechanical Engineers, January 2015 to Present.
- Research Fellow, University of Michigan, July 2012 to February 2013.

AWARD AND HONORS

- NIOSH ERC PPRT pilot program award by the NSF, 2011

MAIN SCIENTIFIC PUBLICATION

- Characterizing microscale aluminum composite layer properties on silicon solar cells with hybrid 3D scanning force measurements, *Scientific Reports*, 2016
- Integrated nanoplasmonic sensing for cellular functional immunoanalysis using human blood, *ACS Nano*, 2014
- Smart Three-Dimensional Gas Chromatography, *Analytical Chemistry*, 2013
- Fabry-Pérot cavity sensor-based optofluidic gas chromatography using a microfabricated passive preconcentrator/injector, *Lab on a Chip*, 2013
- Smart multi-channel two-dimensional micro-gas chromatography for rapid workplace hazardous volatile organic compounds measurement, *Lab on a Chip*, 2013
- Effect of thermal desorption kinetics on vapor injection peak irregularities by a microscale gas chromatography preconcentrator, *Analytical Chemistry*, 2012
- Microfabricated passive vapor preconcentrator/injector designed for microscale gas chromatography, *Lab on a Chip* (front cover article), 2012

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RESEARCH INTERESTS

- 3D nano-composite structure for chemical adsorption and sensing
- Microscale gas chromatography (μ GC) system for environmental monitoring and healthcare applications
- MEMS based nano/micro gas sensor
- Bio-medical devices
- Microscale heat transfer
- Manufacturing and energy conversion using nanostructures