

Ka-Hyun Kim, Ph.D.

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Associate Professor in ChungBuk Natl. Univ.

17 years of research in Industry-oriented silicon devices

Research Interests

Semiconductor Device Physics: Industry-oriented silicon devices

- Silicon heterojunction solar cells
- Tunneling oxide passivating contacts
- PIN photodetectors
- Thin film transistors
- Expertise in thin film device fabrication and optimization

Semiconductor Material and Device Characterization

- Defect analysis using deep level transient spectroscopy
- Analysis of material properties via thermal desorption spectroscopy
- Study of silicon-hydrogen bonding through hydrogen exodiffusion
- Optical characterization: Spectroscopic ellipsometry

Semiconductor Processes

- PECVD deposition and thin film silicon
- Low temperature plasma deposition processes ($T < 400^{\circ}\text{C}$)
- Epitaxial silicon growth
- Flexible and versatile silicon materials (poly, nano-crystalline, epitaxy)

Career Achievements

Since 03/2019	Associate Professor, Chungbuk National University Department of Physics
03/2018-02/2019	Assistant Professor, Cheongju University
01/2013-02/2018	Senior Researcher, Korea Institute of Energy Research

Education

11/2009-10/2012	Ph.D., École Polytechnique, Palaiseau, France Under direction of Prof. Pere Roca i Cabarrocas - Physics
02/2008-05/2010	Master, École Polytechnique, Palaiseau, France (Dual degree) Under direction of Prof. Pere Roca i Cabarrocas - Physics
03/2007-02/2010	Master, Kyunghee University, Seoul, South Korea (Dual degree) Under direction of Prof. Jin Jang - Flat panel display engineering
11/2003-12/2004	English training, Language Institute of Georgia Tech, Atlanta, US 1 year of full-time intensive English language program
03/1999-02/2007	Bachelor in Kyunghee University, Seoul, South Korea Dual major – Physics / Flat panel display