

Kwanyong Seo

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Professional Experience

2022~ **Professor of School of Energy and Chemical Engineering, UNIST**
2017~2022 **Associate Professor of School of Energy and Chemical Engineering, UNIST**
2013~2017 **Assistant Professor of School of Energy and Chemical Engineering, UNIST**
2009~ 2012 **Harvard University, School of Engineering and Applied Sciences**
Postdoctoral research, Advisor: Prof. Kenneth B. Crozier
2008~2009 **KAIST, Dept. of Chemistry**
Postdoctoral research, Advisor: Prof. Bongsoo Kim
2004~2005 **UC Berkeley, Dept. of Chemistry**
Visiting research, Advisor: Prof. Peidong Yang

Educational Background

2004~2008 **KAIST, Ph. D. in Chemistry**
Advisor: Prof. Bongsoo Kim
2002~2004 **KAIST, M. S. in Chemistry**
Advisor: Prof. Bongsoo Kim
1997~2002 **Korea National University of Education, B. S. in Chemistry**

Awards

- 2014 Outstanding Teaching Award by UNIST
- 2019 National R&D Top 100 by Ministry of Science and ICT
- 2021 Industrial Technology of the Month by Ministry of Trade, Industry and Energy
- 2022 Outstanding Faculty Award by UNIST

Research Interests

- Neutral-Color Transparent Crystalline Silicon Solar cells for Smart Window
- Crystalline Silicon Radial Junction Photovoltaics with Microwires
- Crystalline Silicon based Solar Fuel such as H₂, NH₃ and H₂O₂.

Selected Recent Publications

1. **D. Choi, J. Lee, M. Wober, Y. -K. Kim, H. -D. Um, and K. Seo*** "Wavelength-selective Photodetectors with high quantum efficiency using an optical blocking layer and a field-induced junction on a silicon nanowire" *Device* **2023**, *1*, 100018.
2. **W. Jin, C. Shin, S. Lim, K. Lee, J. M. Yu, K. Seo*** and J. -W. Jang* "Natural leaf-inspired solar water splitting system" *Appl. Catal. B: Environ.* **2023**, *322*, 122086.
3. **D. Choi, I. Hwang, Y. Lee, M. Lee, H. -D. Um*, and K. Seo*** "Wafer-Scale Radial Junction Solar Cells with 21.1% Efficiency Using c-Si Microwires" *Adv. Funct. Mater.* **2022**, 2208377.
4. **K. Lee, S. Shin, W. J. Lee, D. Choi, Y. Ahn, M. Park, D. Seo*, K. Seo**** Sunlight Activatable ROS Generator for Cell Death Using TiO₂/c-Si Microwires. *Nano Lett.* **2021**, *21* (16), 6998–7004.
5. **N. Kim, D. Choi, H. Kim, H. -D. Um, and K. Seo**** "Silicon Microwire Arrays with Nanoscale Spacing for Radial Junction c-Si Solar Cells with an Efficiency of 20.5%" *ACS Nano*, **2021**, *15* (9) 14756.
6. **D. Choi and K. Seo**** "Field-induced radial junction for dopant-free crystalline silicon microwire solar cells with an efficiency of over 20%" *Adv. Energy Mater.* **2021**, *11*, 2003707.
7. **K. Lee, N. Kim, K. Kim, H. -D. Um, W. Jin, D. Choi, J. Park, K. J. Park, S. Lee*, K. Seo**** "Neutral-Colored Transparent Crystalline Silicon Photovoltaics" *Joule* **2020**, *4*, 235.