Seungjin Lee

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➢ EDUCATION & PROFESSIONAL EXPERIENCE

2021.08 ~ present	Assistant Professor School of Energy Engineering, Korea Institute of Energy Technology (KENTECH)
2019.03 ~ 2021.06	Postdoctoral Researcher Department of Electrical and Computer Engineering, University of Toronto (Advisor: Prof. Edward H. Sargent)
2018.08 ~ 2019.02	Postdoctoral Researcher Department of Materials Science and Engineering, UNIST (Advisor: Myoung Hoon Song)
2013.11 ~ 2018.08	Combined M.S & Ph.D Department of Materials Science and Engineering, UNIST (Advisor: Myoung Hoon Song)
2010.03 ~ 2013.08	B.S. Department of Materials Science and Engineering, UNIST, *summa cum laude* (Advisor: Myoung Hoon Song)

➢ RESEARCH EXPERIENCES

✓ **Synthesis of metal oxides through solution processing.**

- Synthesis of metal oxide nanoparticles (ZnO, ZnMgO, NiO_x, $CuCoO_2$, $CuAlO_2$, $CuGaO_2$, etc).

✓ **Synthesis of perovskite materials (3D, 2D and nanocrystals).**

- Fabrication of solution-processable 3D perovskite films ($MAPbI_3$, $MAPbBr_3$, $FAPbI_3$, $FAPbBr_3$, $CsPbI_3$, $CsPbBr_3$, etc.) by modulating composition.
- Synthesis of colloidal metal halide perovskite nanocrystals.

✓ **Surface modification and functionalization of inorganic quantum dots.**

- Synthesis of CQD inks through solution-phase ligand exchange (PbS, InP, InAs, etc.).

✓ **Organic, metal halide perovskite, and quantum dot based optoelectronic devices.**

- Interfacial engineering for defect passivation and efficient injection/transport in optoelectronic devices.

➢ REPRESENTAIVE PUBLICATION

✓ First-Author Papers

1. **Seungjin Lee**, So Min Park, Eui Dae Jung, Tong Zhu, Joao M Pina, Husna Anwar, Feng-Yi Wu, Guan-Lin Chen, Yitong Dong, Teng Cui, Mingyang Wei, Koen Bertens, Ya-Kun Wang, Bin Chen, Tobin Filleter, Sung-Fu Hung, Yu-Ho Won, Kwang Hee Kim, Sjoerd Hoogland, Edward H Sargent, Dipole Engineering through the Orientation of Interface Molecules for Efficient InP Quantum Dot Light-Emitting Diodes. *Journal of the American Chemical Society*, **2022**, 144, 20923-20930.

2. **Seungjin Lee**, Min-Jae Choi, Geeut Sharma, Margherita Biondi, Bin Chen, Se-Woong Baek, Amin Morteza Najarian, Maral Vafaie, Joshua Wicks, Laxmi Kishore Sager, Sjoerd Hoogland, F. Pelayo García de Arquer, Oleksandr Voznyy, Edward H. Sargent, Orthogonal Colloidal Quantum Dot Inks Enable Efficient Multilayer Optoelectronic Devices. *Nature Communications,* **2020,** 11, 4814.

3. **Seungjin Lee**, Chung Hyeon Jang, Thanh Luan Nguyen, Su Hwan Kim, Kyung Min Lee, Kiseok Chang, Su Seok Choi, Sang Kyu Kwak, Han Young Woo, Myoung Hoon Song, Conjugated polyelectrolytes as a multifunctional passivating and hole transporting layer for efficient green perovskite light-emitting diode. *Advanced Materials*, **2019**, *31*, 190067.

4. **Seungjin Lee,** Da Bin Kim, Jae Choul Yu, Chung Hyeon Jang, Jong Hyun Park, Bo Ram Lee, Myoung Hoon Song, Versatile defect passivation methods for metal halide perovskite materials and their application in light-emitting devices. *Advanced Materials*, **2019**, *31*, 1805244.

5. **Seungjin Lee**, Jong Hyun Park, Yun Seok Nam, Bo Ram Lee, Baodan Zhao, Daniele Di Nuzzo, Eui Dae Jung, Hansol Jeon, Ju-Young Kim, Hu Young Jeong, Richard H. Friend, Myoung Hoon Song, Growth of Nanosized Single Crystals for Efficient Perovskite Light-Emitting Diodes. *ACS Nano* **2018,** *12*, 3417-3423.

6. **Seungjin Lee**, Thanh Luan Nguyen, Sang Yun Lee, Chung Hyeon Jang, Bo Ram Lee, Eui Dae Jung, Song Yi Park, Yung Jin Yoon, Jin Young Kim, Han Young Woo, Myoung Hoon Song, Conjugated Polyelectrolytes Bearing Various Ion Densities: Spontaneous Dipole Generation, Poling-Induced Dipole Alignment, and Interfacial Energy Barrier Control for Optoelectronic Device Applications. *Advanced Materials* **2018,** *30*, 1706034.

7. Bo Ram Lee[†], **Seungjin Lee**[†], Jong Hyun Park, Eui Dae Jung, Jae Choul Yu, Yun Seok Nam, Jinhee Heo, Ju-Young Kim, Byeong-Su Kim, Myoung Hoon Song, Amine-Based Interfacial Molecules for Inverted Polymer-Based Optoelectronic Devices. *Advanced Materials* **2015**, *27*, 3553-3559. († equally contributed as a first author)