

NANO KOREA 2020

July 1~3, KINTEX, Korea

Se-Woong Baek

Assistant Professor, Korea University

Address: New Engineering Hall, 145, Anam-Ro, Seongbuk-Gu, Seoul, 02841

Telephone: (+82)2-3290-3302

Fax:

E-mail: sewoongbaek@korea.ac.kr

Nationality: Republic of Korea

Web: <http://opel.korea.ac.kr>

EDUCATION

KAIST	Ph.D	EEWS graduate school	2017
KAIST	MS	EEWS graduate school	2013
KAIST	BS	Chemical and Biological Engineering	2011

PROFESSIONAL ACTIVITIES

- Assistant Professor, Dept. of Chemical and Biological Engineering, Korea University, Republic of Korea (March 2020 to Present)
- Postdoctoral fellow, Dept of Electrical & Computer Engineering, University of Toronto, Canada (September 2017 to February 2020)
- Postdoctoral fellow, Applied Science Research Institute, KAIST, Republic of Korea (March 2017 to August 2017)

AWARD AND HONORS

- RSC awards, QD2018 (2018)
- The 3rd best dissertation award, EEWS (2017)
- The best paper award, PVSEC-25 (2015)
- The best English oral presentation, PSK (2014)
- Fusion research award, KINC (2014)
- Best poster presentation, KPVS (2013)
- Outstanding Research Award, KINC (2012)

MAIN SCIENTIFIC PUBLICATION

- Se-Woong Baek *et al.*, “Rationally designed perovskite tandem solar cell with efficiency of 28.2%”, *Nature Communications*, **11**, 1257 (2020)
- Se-Woong Baek *et al.*, “Efficient hybrid colloidal quantum dot/organic solar cells mediated by near-infrared sensitizing small molecules”, *Nature Energy*, **4**, 969–976 (2019)
- Se-Woong Baek *et al.*, “Nanostructured Back Reflectors for Efficient Colloidal Quantum Dot Infrared Optoelectronics”, *Advanced Materials*, **31**, 1901745 (2019)
- Se-Woong Baek *et al.*, “Colloidal quantum dots-based self-charging system via near-infrared band”, *Advanced Materials*, **30**, 7224 (2018)

NANO KOREA 2020

July 1~3, KINTEX, Korea

RESEARCH INTERESTS

- Emerging semiconductors such as colloidal quantum dots (CQDs), conjugated-polymer, dot-in-perovskite matrix
- Sub-wavelength nanostructure design, calculation, photonic structures
- Future optoelectronics and energy conversion devices such as photovoltaics, photodetector, light emission and wireless charging