Seokwoo Jeon

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CURRENT from 2008

Associate Professor, Department of Materials Science and Engineering, KAIST

EDUCATION

***1/2003 to 12/2006,* University of Illinois at Urbana-Champaign (UIUC)**
Ph.D. in Materials Science and Engineering, Advisor: Prof. John A. Rogers
***3/2001 to 1/2003,* Seoul National University (SNU)**
Master in Materials Science and Engineering, Advisor Prof. Shinhoo Kang
***8/2001 to 8/2002,* UIUC,** Exchange graduate student Advisor: Prof. Paul Braun
***3/1993 to 2/2000,* SNU**, Bachelor in Inorganic Materials Science and Engineering

EXPERIENCE

***1/2007 to 7/2008 ,* Columbia University, Postdoctoral fellow at NSEC**
***6/2006- 8/2006,* Global Intern, Samsung Electronics Company**
***5/2005- 7/2005,* Intern,** Corporate R&D headquarter, **DUPONT**
***9/2000 - 12/2000,* Intern, ACCENTURE**

SELECTED PUBLICATIONS (over 80 publications)

J. Park, S. Wang, M. Li, C. Ahn, J. K. Hyun, D.S. Kim, J. A. Rogers, Y. Huang, **S. Jeon***, *Nat. Commun.*, 3, 916 (2012)
Y. Kim, J. Lee, M. S. Yeom, J. W. Shin, H. Kim, Y. Cui, J. W. Kysar, J. Hone, Y. Jung*, **S. Jeon*,** S. M. Han*, *Nat. Commun.*, 4, 2114 (2013)
S. H. Song, B. H. Kim, D.-H. Choe, J. Kim, D. C. Kim, D. Lee, J. Kim, K. J. Chang* and **S. Jeon*,** *Adv. Mater.*, 27, 3152 (2015)
J Park, K. Kim, D. Kim, D. Cho, J. H. Lee, **S. Jeon*,** *Adv. Mater.*, 27, 8000 (2015)
J. Lee, J. Baek, G.H. Ryu, M.J. Lee, S. Oh, S.K. Hong, B.H. Kim, S.H. Lee, B.J. Cho, Z. Lee*, **S. Jeon***, *Nano Lett.*, 14, 4352-59 (2014)
S. H. Song, M. H. Jang, J. Chung, S. H. Jin, B. H. Kim, S. H. Hur, S. Yoo*, Y. H. Cho*, **S. Jeon***, *Adv. Opt. Mater.*, 2, 1016-23 (2014)
S. H. Song, K. H. Park, B. H. Kim, Y. W. Choi, G. H. Jun, D. J. Lee, B. S. Kong, K. W. Paik, and **S. Jeon***, *Adv. Mater*. 25,732-737 (2013)
S. H. Jin, D. H. Kim, G. H. Jun, S. H. Hong, and **S. Jeon***, *ACS Nano*, 7(2)1239-45 (2013)
K. H. Park, B. H. Kim, S. H. Song, J. Kwon, B. S. Kong, K. Kang, and **S. Jeon***, *Nano Lett.*, 12, 2871-76, (2012)
S. Jeon, J. Park, R. Cirelli, S. Yang, C. Heitzman, P. Braun, P. Kenis, J. Rogers, *Proc. Natl. Acad. Sci. U.S.A.*, **101**, 12428-33 (2004)

HONOR & AWARD

Korean Presidential Award for Young Scientist (2015)
2013~2014 KAIST Top 10 Representative R&D Outcomes (2014)
Invited speaker at the new Quantum Dot Gordon Research Conference in 2014 (2014).
2012~2013 KAIST Top 10 Representative R&D Outcomes (2013)
Commendation Award from minister from Minstry of Science, ICT and Future Planning (2013)
Outstanding Faculty Academic Award at the 42nd anniversary of KAIST(2012)
Young Investigator award from KIM (2011)
Ewon assistant professor (2011-2014)
Superior project award from ADD (2011)
Racheff-INTEL award for Excellence in Graduate Research (2005)
Beckman Institute Graduate Fellowship for interdisciplinary research (2004-2005)
Yangsong prize, for the outstanding presentation at 2002 Korean Ceramic Society
Selected for BK 21 program with full support of exchange graduate program (2001-2002)

CURRENT RESEARCH INTEREST & ACHIEVEMENTS

1. **Low dimensional nanomaterials**: Essential materials for flexible electronics in near future would be carbon based nanomaterials (i.e. graphene and CNT) and other two dimensional (2D) materials. Unfortunately, those materials are relatively new so that general quantification of defects, the relationship between material properties and the defects, and synthetic routes to minimize defects are in urgent needs. Our group has performed pioneering work in the synthesis of low defect graphene and applications, high strength composites using graphene or boron nitride (BN), light emitting graphene quantum dots, and bandgap modulation of 2D materials such as MoS2.

2. **3D nanopatterning and metamaterials**: By observing current nanomaterial researches, high quality, nano-scale components such as nanoparticle, nanowire, and etc. could be efficiently fabricated. Bulk scale fabrication without harming material properties, however, still has to be accomplished; even though individual properties of nanomaterial can be superior, homogenized property and structure in bulk scale composed of the nanomaterial cannot be guaranteed. By extending the patterning capability of Proximity field nanoPattering (PnP) over inch^2, we have given solution on the scaling-up issues. Extremely stretchable electrodes and porous 3D metallic or ceramic nanostructures for mechanical and chemical applications represent our initial success.

Since 2008, after joining KAIST, I have filed over 50 patents and published over 90 peer-reviewed journal articles (average IF: over 8) in high-impact journals including *Nature Communications* (2), *Advanced Materials* (8), *Nano Letters* (8), *JACS* (1), *ACS Nano* (3), *Energy and Environ. Science* (2), *Advanced Optical Materials* (2), *Small* (7), *Nano Research* (2), *Nanoscale* (3), *Chemistry of Materials* (2), *Scientific Reports* (2), *Carbon* (3), *J. Phys. Chem.* (3), and *Langmuir* (1). **I have succeeded in getting over 30 research grants from Korean government and companies (LG Chemicals, LG Display, KCC, Samsung Electronics).**