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EDUCATION

University of Texas in Austin, USA	Ph.D	Physics	**2007**
Seoul National University, Seoul, Korea	M.S.	Physics	**1998**
Seoul National University, Seoul, Korea	B.S.	Physics	**1996**

PROFESSIONAL ACTIVITIES

- Delegate appointed by Korean Agency for Technology and Standards and IEC, 2014 – present
- Councilor, IEIE (institute of electronics and information engineers), 2018- present
- Assistant and Associate professor, Department of Nano-physics, Gachon University, Korea, 2013-present
- Senior researcher, Samsung Electronics Corporation, Korea,2011-2013
- Postdoctoral, Georgia Institute of Technology, USA, 2007-2011, adviser: Z. L. Wang

AWARDS AND HONORS

- Three grants, Korean National Science Foundations, 2013 –
- Grant, Korea Ministry of Commerce, 2015-
- Grant, Small and Medium Business Administration, 2018 –
- Grant, Advanced Institute of Convergence Technology, 2020-
- Samsung group's best paper award, Silver Award (2nd author), 2011
- Co-Principal Investigator (PI) of a project, which is funded by Samsung Electronics, Inc. 2009 - 2010
- Co-Principal Investigator (PI) of a project, which is funded by Korea Electronics Technology Institute. 2010
- Scholarship grant from VNF Innovation, Inc. (spin-out company of a Samsung's Partner company) 2007
- A winner of Nano micrographs competition at the University of Texas at Austin, 2006

MAIN SCIENTIFIC PUBLICATION

- Chen. T, Li. M, Song. S, Kim. P, ***Bae J****. Biotemplate preparation of multilayered TiC nanoflakes for high performance symmetric supercapacitor. *NANOENERGY* (In publication)
- Le. TS, Truong.TK, Huynh. VN, Bae.J*, Suh. D*. Synergetic design of enlarged surface area and pseudo-capacitance for fiber-shaped supercapacitor yarn. *NANOENERGY, 2020, 104198.*
- Imtisal, Malik, Choi, Bae (Co corresponding), Seo (Corresponding), Quartz Tuning Fork Based Three-Dimensional Topography Imaging for Sidewall with Blind Features, *ultramicroscopy* (In publication)
- Xue. Y, Chen. T, Song. S, Kim. P, ***Bae. J****. DNA-directed fabrication of $NiCo_2O_4$ nanoparticles on carbon nanotubes as electrodes for high-performance battery-like electrochemical capacitive energy storage device. *NANOENERGY, 2019, 56, 751-758.*

- "Multi-dimensional nanocarbons hybridized with?silicon oxides and?their application for electrochemical capacitors " - Seung Hyun Song, Ji Sun Park, Jun Ho Song, Churl Seung Lee, Joonho Bae <carbon letters>, (2019)
- "Facile One-Pot Synthesis of LiMnO2 Nanowire-Graphene Nanoplatelet Composites and Their Applications in Battery-Like Electrodes for High Performance Electrochemical Capacitors" - Tao Chen, Joonho Bae <JOURNAL OF ELECTRONIC MATERIALS>, (2019)

(year 2018)

- "Porosity-engineered Hard Carbons Hybridized with Carbon Nanotubes for Electrochemical Capacitors" – Y. Xue, C.S. Lee, Joonho Bae <BULLETIN OF THE KOREAN CHEMICAL SOCIETY>
- "High-Efficiency Flexible and Foldable Paper-Based Supercapacitors Using Water-Dispersible Polyaniline-Poly(2-acrylamido-2-methyl-1-propanesulfonic acid) and Poly(vinyl alcohol) as Conducting Agent and Polymer Matrix" - Seung Won Kang, Joonho Bae <MACROMOLECULAR RESEARCH>
- "CVD-graphene for low equivalent series resistance in rGO/CVD-graphene/Ni-based supercapacitors" - Kwon YH, Kumar S, Bae J, Seo Y. <NANOTECHNOLOGY>
- "Facile one-pot synthesis of Na0.9MnO2 nanowires and their applications for high performance electrochemical capacitors" - Tao Chen, Joonho Bae <MATERIALS LETTERS>
- "Facile synthesis of ZnO-Au nanocomposites for high-performance supercapacitors" -
- Hansa Mahajan, Joonho Bae, Kyusik Yun <JOURNAL OF ALLOYS AND COMPOUNDS>
- "Novel P(VDF-TrFE) Polymer Electrolytes: Their Use in High-Efficiency, All-Solid-State Electrochemical Capacitors Using ZnO Nanowires" - Young Jun Park , Joonho Bae <JOURNAL OF ELECTROCHEMICAL SCIENCE AND TECHNOLOGY>
- "Room-temperature growth ("farming") and high-performance supercapacitor applications of highly crystalline CuO nanowires/graphene nanoplatelet nanopowders" – C.S.Lee, Joonho Bae <JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS>
- "Recent Advances on Multi-Dimensional Nanocarbons for Superapacitors: A Review" – Joonho Bae <JOURNAL OF ELECTROCHEMICAL SCIENCE AND TECHNOLOGY>
- "Facile Synthesis of Amorphous CuO Nanosheets on Nickel Foam by Utilizing ZnO Nanowires for High-Performance Supercapacitors" - <JOURNAL OF ELECTRONIC MATERIALS>
- (year 2017)
- "Novel Silicon Nanowire Electrodes Grown by Chemical Vapor Deposition Method for High-Performance Electrochemical Capacitors" - Xiaoli He, Joonho Bae <BULLETIN OF THE KOREAN CHEMICAL SOCIETY>
- "Polyaniline-poly(2-acrylamido-2-methyl-1-propanesulfonic acid) electrodes coated on plasma-treated thiolene-based polymer substrates for high-efficiency electrochemical capacitors" - Amir Abul Kalam, John P. Hulme, Joonho Bae <POLYMER BULLETIN>
- "Morphology engineering of ZnO nanostructures for high performance supercapacitors: enhanced electrochemistry of ZnO nanocones compared to ZnO nanowires" - X He, JE Yoo, MH Lee, J Bae <NANOTECHNOLOGY>

(Main publications before 2017)

- "Novel semiconducting CdSe quantum dot based electrochemical capacitors" - <MATERIALS LETTERS> (2016)
- -"Novel application of water-dispersible polyaniline-poly(2-acrylamido-2-methyl-1-propanesulfonic acid) for all-solution-based electrochemical capacitors" - <POLYMER TESTING>, (2015)
- -"Fully flexible and transparent piezoelectric touch sensors based on ZnO nanowires and BaTiO3-added SiO2 capping layers" - <PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE>, (2015)
- Toward wearable and stretchable fabric-based supercapacitors: novel ZnO and SnO2 nanowires?carbon fibre and carbon paper hybrid structure" Joonho Bae, Young Jun Park, Ju Chan Yang, Hyoun Woo Kim , Doo Young Kim, J Solid State Electrochem, (2014)
- "Novel Flexible Supercapacitors Fabricated by Simple Integration of Electrodes, Binders, and Electrolytes into Glass Fibre Separators" Joung Eun Yoo, Joonho Bae, J. Kor. Electrochem. Soc., (2014)
- "Carbon nanotube-silver nanowire composite networks on flexible substrates: High reliability and application for supercapacitor electrodes" Churl Seung Lee, Joung Eun Yoo, Kwonwoo Shin, C. O. Park, Joonho Bae, Phys. Status Solidi A, (2014)
- Lee. M, Bae. J (Co-first author), Lee. J, Lee. CS, Hong. S, Wang. ZL. Self-powered environmental sensor system driven by nanogenerators. ENERGY & ENVIRONMENTAL SCIENCE, 2011, 4, 3359-3363
- Bae. J, Park. YJ, Lee. M, Cha. SN, Choi. YJ, Lee. CS, Kim. JM, Wang. ZL. Single-Fiber-Based Hybridization of Energy Converters and Storage Units Using Graphene as Electrodes. ADVANCED MATERIALS, 2011, 23, 3446-3449.
- Bae. J, Song. MK, Park. YJ, Kim. JM, Liu. ML, Wang. ZL. Fiber Supercapacitors Made of Nanowire-Fiber Hybrid Structures for Wearable/Flexible Energy Storage. ANGEWANDTE CHEMIE-INTERNATIONAL EDITION. 2011, 50,1683-1687.

RESEARCH INTERESTS

- Synthesis and characterizations of nanomaterials for energy devices including supercapacitors and lithium ion batteries.
- Novel optical characterization techniques of novel nanomaterials
- Nanomaterials for quantum computing and quantum devices