Jae-Jin Shim

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Education:

1976–1980	B.S., Dept. of Chemical Eng., Seoul National University
1980–1982	M.S., Dept. of Chemical Eng., Korea Adv Inst of Sci & Tech (KAIST)
1986–1990	Ph.D., Dept. of Chemical Eng., University of Texas at Austin

Experience:

1982–1986	Research Scientist, Korea Institute of Science and Technology (KIST)
1990–1991	Postdoctoral Fellow, University of California, Berkeley
1991–1994	Senior Research Scientist, Korea Institute of Science and Technology
1994–Present	Assistant, Associate, and Full Professor, Yeungnam University (YU)
1999-2000	Chairman, School of Chemical Engineering and Technology, YU
2002–2004	Vice Dean, College of Engineering, YU
2006-2008	Director, Institute of Clean Technology, YU
2006-2010	Editor of “Clean Technology,” Korean Society of Clean Technology
2007-2013	International Cooperation Team Leader, BK21 Program, YU
2008–2011	Vice President, Korean Society of Clean Technology (KSCT)
2009-2011	Director, Center for Innovation of Engineering Education, YU
2011-2011	Editor of Korean Journal of Chemical Engineering
2011-2012	Vice President, Korean Society of Engineering Education
2011-2012	Engineering Accreditation Committee, ABEEK
2012–2012	President, Korean Society of Clean Technology (KSCT)
2014-Present	Director, Institute of Clean Technology, YU
2014-Present	Director, Clean Energy Priority Research Center (by Korean Gov.)
2016–2017	Vice President, Council of the Priority Research Centers, NRF

Whole-time Evaluator for

(1) National Research Foundation, Korea
(2) National Cleaner Production Foundation, Korea

(3) Korea Evaluation Institute of Industrial Technology
(4) Korea Industrial Complex Corporation
(5) Korea Energy Technology Evaluation and Planning
(6) Korea Environmental Industry & Technology Institute
(7) Nat'l Human Resources Development Institute, Korean Government

International Thesis Referee

2016. 10. Ph.D. Thesis, Pune University, India
2018. 11. Ph.D. Thesis, Gandhigram Rural Institute, India
2018. 12. Ph.D. Thesis, Pune University, India
2019. 04. M.S. Thesis, Beni Suef University, Egypt

Academic Activities

1983–Present	Lifetime Member, Korean Institute of Chemical Engineers (KIChE)
1989–Present	Member, American Institute of Chemical Engineers (AIChE)
1993–1996	Member, Korean Chemical Society
1993–1996	Member, Polymer Society of Korea
1994–Present	Member, Korean Society of Environmental Engineers
2003–Present	Lifetime Member, The Korean Society of Clean Technology
2003–Present	Member, Korean Society for Engineering Education
2008–Present	Member, Int'l Society for Advancement of Supercritical Fluids
2018–Present	Member, Materials Research Society (MRS)
2019-Present	Member, Korean Electrochemical Society

Awards:

2008,2011,2013	Outstanding Paper Award, Korean Society of Clean Technology
2010	Commendation, Minister of Education and Sci. and Technol., Korea
2012	Glocal Leadership Award, President of Yeungnam University
2014	Best Teacher Award, Center for Innovation of Engineering Education
2015	Superior Project-Evaluator Award, National Research Foundation of Korea
2017	Excellent Researcher Award with Most-Patent Registration, Yeungnam Univ.
2017	Commendation for Excellence in National Research Project, Minister of Science and ICT, Korea

Academic Journal Editors

2003–2004 Editor, News and Information in Chemical Engineering (NICE), KIChE
2006–2010 Chief Editor of "Clean Technology," the journal for KSCT
2011–2011 Editor, Korean Journal Chemical Engineering (KJChE)

Research Interests

1. Application of Graphene for Energy Storage
2. Supercapacitors for Energy Storage
3. Nanocomposites for Photocatalysts and Sensors
4. Supercritical Fluid Technology (Polymer and Organics Synthesis, Extraction, etc.)
5. Ionic Liquids (Synthesis of Polymers and Organics Materials, Phase Equilibrium)

6. Synthesis of Morphology Controlled Polymers

Publications:

188 Scientific Papers, 14 Books, and 28 Patents

(1) Selected Research Articles

1. Potphode, D., M. S. Sayed, T. L. Tamang, J.-J. Shim, "High-performance binder-free flower-like $(Ni_{0.66}Co_{0.3}Mn_{0.04})_2(OH)_2(CO_3)$ arrary synthesized using ascorbic acid for supercapacitor applications," *Chem. Eng. J.*, **378**, 122129 (2019).
2. Kumar, D. R., M. L. Baynosa, and J-J Shim, "Cu2+-1, 10-phenanthroline-5,6-dione@electrochemically reduced grapheneoxide modified electrode for the electrocatalytic determination of L-cysteine," *Sensor. Actuat. B-chem.,* **293**, 107–114 (2019).
3. Mady, A. H., M. L. Baynosa, D. Tuma, and J-J Shim, "Heterogeneous activation of peroxymonosulfate by a novel magnetic 3D γ-MnO_2@$ZnFe_2O_4$/rGO nanohybrid as a robust catalyst for phenol degradation," *Appl. Catal. B-Environ.*, **244**, 946–956 (2019).
4. Mohapatra, D., G. Dhakal, M. S. Sayed, B. Subramanya,* J-J Shim, and S. Parida, "Sulfur Doping: Unique Strategy To Improve the Supercapacitive Performance of Carbon Nano-onions," *ACS Appl. Mater. Inter.,* **11**, 8040−8050 (2019).
5. Kumar, D. R., S. Kesavan, M. L. Baynosa, V. Q. Nguyen, and J-J Shim, "Flower-like Bi_2S_3 nanostructures grown on nitrogen-doped reduced graphene oxide for electrochemical determination of hydrogen peroxide," *J. Colloid Interf. Sci.,* **530**, 361–371 (2018).
6. Saad, G. M. M., I. Hussain, and J.-J. Shim, "One-step synthesis of hollow C-$NiCo_2S_4$ nanostructures for high-performance supercapacitor electrodes," *Nanoscale*, **10**(14), 6620–6628 (2018)**.**
7. Lamiel, C., Y. R. Lee, M. H. Cho, D. Tuma, and J.-J. Shim, "Enhanced electrochemical performance of nickel-cobalt-oxide@reduced graphene oxide//activated carbon asymmetric supercapacitors by the addition of a redox-active electrolyte," *J. Colloid Interf. Sci.,* **507**, 300–309 (2017).
8. Lamiel, C., V., H. Nguyen , D. R. Kumar, and J.-J. Shim, "Microwave-assisted binder-free synthesis of 3D Ni-Co-Mn oxide nanoflakes@Ni foam electrode for supercapacitor applications," *Chem. Eng. J.,* **316**, 1091–1102 (2017).
9. Mady, A. H., M. L. Baynosa, D. Tuma, and J.-J. Shim, "Facile microwave-assisted green synthesis of Ag-$ZnFe_2O_4$@rGO nanocomposites for efficient removal of organic dyes under UV- and visible-light irradiation," *Appl. Catal., B: Environ.,* **203**, 416–427 (2017).
10. Kesavan, S., D. R. Kumar, Y. R. Lee, and J.-J. Shim, "Determination of tetracycline in the presence of major interference in human urine samples using polymelamine/electrochemically reduced graphene oxide modified electrode," *Sensor. Actuat. B,* **241**, 455–465 (2017).
11. Kumar, D. R, S. Kesavan, T. T. Nguyen, J. Hwang, C. Lamiel, and J.-J. Shim, "Polydopamine@electrochemically reduced graphene oxide-modified electrode for electrochemical detection of free-chlorine," *Sensor. Actuat. B.,* **240,** 818–828 (2017).
12. Sahoo, S., and J.-J. Shim, "Facile Synthesis of 3D Ternary $ZnCo_2O_4$/Reduced

Graphene Oxide/NiO Composite Film on Nickel Foam for Next Generation Supercapacitor Electrodes," *ACS Sustain. Chem. Eng.*, **5**, 241−251 (2017).

13. Nguyen, V. H., and J.-J. Shim, "Three-dimensional nickel foam/graphene/$NiCo_2O_4$ as high-performance electrodes for supercapacitors," *J. Power Sources*, **273**, 110–117 (2015).
14. Ren, Y., and J.-J. Shim, "Efficient Synthesis of Cyclic Carbonates by Mg^{II}/Phosphine-Catalyzed Coupling Reactions of Carbon Dioxide and Epoxides," *ChemCatChem*, **5**(6), 1344–1349 (2013).

(2) Books

1. Ram B. Gupta and Jae-Jin Shim, Solubility in Supercritical Carbon Dioxide, CRC Press, Boca Raton, Florida, USA, 2006.
2. Yuvaraj Haldorai and Jae-Jin Shim, Synthesis of Polymer Nanocomposites in Supercritical CO_2 (Chap. 11), in Vikas Mittal (ed.), Synthesis Techniques for Polymer Nanocomposites, Wiley-VCH, Weinhein, Germany, 2014.
3. Yuvaraj Haldorai and Jae-Jin Shim, Fabrication of Metal Oxide-Polymer Hybrid Nanocomposites (pp. 249-281), in Susheel Kalia and Yuvaraj Haldorai (eds.), Organic-Inorganic Hybrid Nanomaterials (Advances in Polymer Science 267), Springer, 2015.
4. Yuvaraj Haldorai and Jae-Jin Shim, Manufacturing Polymer Nanocomposites (pp. 29-67), in Sabu Thomas, Rene Muller, Jiji Abraham (eds.), Rheology and Processing of Polymer Nanocomposites, John Wiley & Sons, Hoboken, New Jersey, 2016.
5. Van Hoa Nguyen and Jae-Jin Shim, Chap 23. Graphene-Based Antibacterial Materials, in Nahmood Aliofkhazraei, Nasar Ali, William I. Milne, Cengiz S. Ozkan, Stanislaw Mitura, Juanan L. Gervasoni (eds.), Graphene Science Handbook, CRC Press, Boca Raton, Florida, 2016.
6. Dongju Song, Youngtak Kim, Chinho Park, Jae-Jin Shim, Moonyong Lee, Hwajo Lee, Wongil Hyung, Introduction to Engineering Design, Young Publishers, 2008.
7. Dongju Song, Youngtak Kim, Chinho Park, Jae-Jin Shim, Hyun-Bo Shim, Moonyong Lee, Hwajo Lee, Wongil Hyung, Introduction to Engineering Design (2^{nd} ed.), Guidian Books, 2014.
8. Suk-Ho Kang, Kiseok Kim, Shi Ok Ryu, Chinho Park, Jae-Jin Shim, Moonyong Lee, Jae-Hak Jung, Easy Introductory Chemical Engineering Design, A-Jin Publishers, 2005.
9. Woo-Sik Jung, Yong Rok Lee, Jae-Hong Kim, Bu-Young Shin, Dong-Jun Lim, Moo-Hwan Cho, Jae-Jin Shim, Tae-Jin Lee, Shi-Ok Ryu, No-Kuk Park, Hyo-Kwang, Bae, Jae-Hak Jung, Moonyong Lee, Display Chemical Engineering Experiments, A-Jin Publishers, 2007.
10. Gui-Young Jung, Yun-Bong Hahn, Chang-Sik Ha, Jun-Seok Kim, Jong-Dae Lee, Jae-Jin Shim, Pil-Jo Ryu, Jiwon Lee, Jinwon Park, Ki Poong Ryu, Jung Hu Choi, Woo-Shik Kim, Chan-Hwa Jung, Kon-Jung Kim, Dong-Myung Ha (eds.), Trends and Perspectives in Chemical Engineering Research, in "Trends and Perspectives in Korean Academic Research," Korean Association of Academic Societies, 2003.