JUNG-HYUN LEE

Email: leejhyyy@korea.ac.kr

EDUCATION

PhD Chemical Engineering, **Georgia Institute of Technology**, 2010
- Thesis title: *Interface Engineering in Zeolite-Polymer and Metal-Polymer Hybrid Materials*.

MS Chemical Engineering, **Korea University**, 2001
- Thesis title: *Direct Synthesis of Phenol from Benzene Using Pulse DC Corona Plasma*.

BS Chemical Engineering, **Korea University**, 1999
- Summa Cum Laude

PROFESSIONAL AND RESEARCH EXPERIENCE

Korea University; Seoul, Korea — March 2014 – Present
Associate Professor, *Department of Chemical & Biological Engineering*

Korea Institute of Science and Technology; Seoul, Korea — Jun. 2012 – Feb. 2014
Senior Researcher, *Center for Materials Architecturing*

National Institute of Standards and Technology; Gaithersburg, MD, USA — Aug. 2010 – May 2012
Postdotoral Associate, *Polymers Division (PI: C.M. Stafford)*

Georgia Institute of Technology; Atlanta, GA, USA — Aug. 2006 – July 2010
Graduate Researcher, *Advanced Interfacial Material Lab (PI: J.C. Meredith)*

KCC; Gyeonggi-do, Korea — Dec. 2000 – Jan. 2006
Researcher, *EMC (Epoxy Molding Compound) R&D team*

AWARDS AND SCHOLARSHIPS

- Materials Engineering & Sciences Division Poster Award at AIChE Annual meeting (Nov. 2009)
- Graduate Scholarships, Georgia Institute of Technology (Aug. 2006 – July 2010)
- Graduate Special Scholarships with Summa Cum Laude, Korea University (March 1999)
- Semester Best Honors Scholarships, Korea University (1995-1998, all semesters)
- Freshmen Special Scholarships, Korea University (March 1995)

SELECTED PUBLICATIONS

1) S.J. Kwon , S.-H. Park, M.G. Shin, M.S. Park, K. Park, S. Hong, H. Park, Y.-I. Park, **J.-H. Lee***, "Fabrication of High Performance and Durable Forward Osmosis Membranes using Mussel-inspired Polydopamine-modified Polyethylene Supports", ***J. Membr. Sci.***, 2019, 584, 89.

2) M.G. Shin, S.-H. Park, S.J. Kwon, H.-E. Kwon, J.B. Park, **J.-H. Lee***, "Facile Performance Enhancement of Reverse Osmosis Membranes via Solvent Activation with Benzyl Alcohol", ***J. Membr. Sci.***, 2019, 578, 220.

3) C.H. Park, S. Jeon, S.-H. Park, M.G. Shin, M.S. Park, S.-Y. Lee, **J.-H. Lee***, "Cellulose Nanocrystal-assembled Reverse Osmosis Membranes with High Rejection Performance and Excellent Antifouling", ***J. Mater. Chem. A***, 2019, 7, 3992.

4) S.H. Park, Y.J. Kim, S.J. Kwon, M.G. Shin, S.E. Nam, Y.H. Cho, Y.I. Park, J.F. Kim*, **J.-H. Lee***, "Polyethylene Battery Separator as a Porous Support for Thin Film Composite Organic Solvent Nanofiltration Membranes", ***ACS Appl. Mater. Interfaces***, 2018, 10, 44050.

5) W. Choi, C. Lee, D. Lee, Y. J. Won, G. W. Lee, M. G. Shin, B. Chun, T.-S. Kim, H.-D. Park, H. W. Jung*, J. S. Lee*, **J.-H. Lee***, "Sharkskin-Mimetic Desalination Membranes with Ultralow Biofouling", ***J. Mater. Chem. A***, 2018, 6, 23034.

6) S.-J. Park, W.-G. Ahn, W. Choi, S.-H. Park, J. S. Lee, H. W. Jung*, **J.-H. Lee***, "A Facile and Scalable Fabrication Method for Thin Film Composite Reverse Osmosis Membranes: Duallayer Slot Coating", ***J. Mater. Chem. A***, 2017, 5, 6648.

7) W. Choi, E. P. Chan, J.-H. Park, W.-G. Ahn, H. W. Jung, S. Hong, J. S. Lee, J.-Y. Han, S. Park, D.-H. Ko, **J.-H. Lee***, "Nanoscale Pillar-Enhanced Tribological Surfaces as Antifouling Membranes", ***ACS Appl. Mater. Interfaces***, 2016, 8, 31433.

8) W. Choi, J.-E. Gu, S.-H. Park, S. Kim, J. Bang, K.-Y. Baek, B. Park, J.S. Lee*, E.P. Chan* and **J.-H. Lee***, "Tailor-Made Polyamide Membranes for Water Desalination", ***ACS Nano***, 2015, *9*, 345.

9) W. Choi, J. Choi*, J. Bang* and **J.-H. Lee***, "Layer-by-Layer Assembly of Graphene Oxide Nanosheets on Polyamide Membranes for Durable Reverse Osmosis Applications", ***ACS Appl. Mater. Interfaces***, 2013, *5*, 12510.

10) J.-E. Gu, S. Lee, C.M. Stafford, J. S. Lee, W. Choi, B.-Y. Kim, K.Y. Baek, E.P. Chan*, J.Y. Chung*, J. Bang* and **J.-H. Lee***, "Molecular Layer-by-Layer Assembled Thin Film Composite Membranes for Water Desalination", ***Adv. Mater.,*** 2013, *25*, 4778.

11) **J.-H. Lee**, H.W. Ro, R. Huang, P. Lemaillet, T.A. Germer, C.L. Sole and C.M. Stafford, "Anisotropic, Hierarchical Surface Patterns via Surface Wrinkling of Nanopatterned Polymer Films", ***Nano Lett.,*** 2012, *12*, 5995.

12) J.Y. Chung†, **J.-H. Lee**†, K.L. Beers, and C.M. Stafford, "Stiffness, Strength, and Ductility of Nanoscale Thin Films and Membranes: A Combined Wrinkling-Cracking Methodology", ***Nano Lett.,*** 2011, *11*, 3361.

13) **J.-H. Lee**, M.A. Mahmoud, V. Sitterle, J. Sitterle, and J.C. Meredith, "Facile Preparation of Highly-Scattering Metal Nanoparticle-Coated Polymer Microbeads and Their Surface Plasmon Resonance", ***J. Am. Chem. Soc.***, 2009, *131*, 5048.

Dr. Jung-Hyun Lee is now an associate professor in Chemical & Biological Engineering Department at Korea University. He received B.S. (in 1999) and M.S. (in 2001) in Chemical Engineering from Korea University, South Korea. After obtaining his M.S. he spent almost 6 years as a research engineer at KCC Corporation, South Korea. After the industrial experience, he received his Ph.D. in Chemical Engineering from Georgia Institute of Technology in 2010. After his Ph.D., he worked as a post-doctoral researcher at National Institute of Standards & Technology from 2010 to 2012. He began his professional career as a senior researcher at Korea Institute of Science & Technology from 2012, and then has continued to build up his career since he moved to Korea University in 2014.

His research is focused on the design and characterization of new materials for water treatment and desalination, including membranes and adsorbents. He is also exploring the functional surfaces with excellent antifouling and self-cleaning functions. He has over 70 publications and 15 patents in the field of membranes and functional surfaces including articles in Advanced Materials, Nano Letter and ACS Nano.