

WOO-KUM LEE

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EXPERIENCE

- 2015 – Present** **Professor/Vice President of Research, Woosuk University, Jeonju, Korea.**
2012 – 2015 Professor/Vice Chair for VP of Research, Woosuk University, Jeonju, Korea.
2008 – 2012 Director, Jeonbuk Regional Innovation Agency, Jeonju, Korea.
2002 – 2008 Research Professor, Dept. of Chemical Engineering, University of South Carolina, Columbia, SC, USA.
2002 – 2008 Principal Investigator, NSF-Industry/University Cooperative Research Center for Fuel Cells, Columbia, SC, USA.
2005 – 2008 Principal Investigator, Collaboration between Korea Institute of Energy Research (KIER) and University of South Carolina, Columbia, SC, USA.
2003 – 2007 Principal Investigator, Collaboration between Korea Automotive Technology Institute (KATECH) and University of South Carolina, Columbia, SC, USA.
2000 – 2002 Postdoctoral Research Associate, Department of Chemical Engineering, University of South Carolina, Columbia, SC, USA.
1995 – 2000 Research Assistant, Dept. of Chemical Engineering, University of South Carolina, Columbia, SC, USA.
1986 – 1993 Grading Assistant, Dept. of Engineering Science & Mechanics, University of Tennessee, Knoxville, TN, USA.
1984 – 1985 Assistant engineer, Dai Woo Motor Company, Seoul, Korea.
1982 – 1984 Ordnance officer (first lieutenant), Republic of Korean Army.

EDUCATION

- 1995 – 2000 Ph.D., Chemical Engineering, University of South Carolina, Columbia, SC, USA
1993 – 1995 B.S., Chemical Engineering, University of South Carolina, Columbia, SC, USA
1986 – 1988 M.S., Engineering Science & Mechanics, University of Tennessee, Knoxville, TN, USA
1978 – 1982 B.S., Mechanical Engineering, SUNGKYUNKWAN University, Seoul, Korea

SOCIETY

- Executive Board Member of Korea Society Mechanical Engineers (Korea)
Member of Golden Key National Honor Society (USA)
Member of Electrochemical Society (USA)
Member of AIChE (USA)
Member of Korean-American Scientists and Engineers Association (USA)

RESEARCH FUNDING (Recent 5 years)

Project Title	Role	Agency	Project Period	Grant
Development of Parallel Operated Battery Charging Module for Energy Storage System	PI	Ministry of Science & Technology	2013.04. ~ 2016 05.	\$540,000
I-CAD Training Program for Employment	PI	Ministry of Employment & Labor	2015.07. ~ 2015.12.	\$90,000
Regional Innovation Center for Hydrogen Fuel Cell (PI on \$16,934,800 for 10year-grant is H-K Lee)	Co-PI	Ministry of Industry & Energy	2008.01. ~ 2017.12.	\$831,000
Hope Bridge Technical Training Program	PI	Ministry of Employment & Labor	2012.02. ~ 2012.12.	\$389,000
Establishment of URI-G Network	PI	Ministry of Science & Technology	2012.01. ~ 2012.12.	\$170,000
Technical Training in LED Industry for New Employment	PI	Ministry of Employment & Labor	2012.01. ~ 2012.12.	\$87,000
Green Energy Industry Human Resource Training Program	PI	Ministry of Industry & Energy	2012.04. ~ 2012.12.	\$80,000

ACTIVITY & PROFESSIONAL SERVICE

1) Recent Service for National & Local Government

- 2015.08 ~ present Chair of Equipment Council for Operating & Managing System in Jeonbuk Province.
- 2014.04 ~ present Ombudsman appointed by Korea Institute for the Advancement of Technology (KIAT), Ministry of Industry & Energy-affiliated organization.
- 2015.08 ~ 09 Review Committee of 2015 National Projects Planned by Jeonbuk Province.
- 2014.08 ~ 12 National R&D Special Zone Planning Team Operated by Jeonbuk Province.

2) International Conference Organizer & Chair:

- 2017.08 Organizing Committee, 12th International Fungal Biology Conference, Incheon, Korea, August 28 ~ September 1, 2017.
- 2011 ~ 2012 Chair of Organizing Committee, 4th ~ 5th International Forum for Printed Electronics, Jeonju, Korea.
- 2008 ~ 2012 Chair of Organizing Committee, 5th ~ 9th New & Renewable Energy Forum, Jeonju, Korea.
- 2008 ~ 2012 Chair of Organizing Committee, 3rd ~ 7th International Carbon Festival, Jeonju, Korea.
- 2010.09. Chair of Organizing Committee, 3rd International Conference on Multi-Functional Materials and Structures, Jeonju, Korea, September 14 – 18, 2010.
- 2006 ~ 2008 Korean Chair of Organizing Committee, 1st ~ 3rd Annual Korea-USA Joint Symposium on Hydrogen & Fuel Cell Technologies, Korea or US.

3) Plenary Presentations or Lectures:

- “Overview of Korean Energy Policy and Industry”, 2014 World of Energy Solutions, Stuttgart, Germany, October 06 - 08, 2014.
- “Invigorated Strategy for Seamanguem-Jeonju Industry Zone”, Presidential Committee on Balanced National Development, Jeonju, Korea, September 21, 2011.
- “Introduction of Seamanguem Project & Jeonbuk Strategic Industry”, Kunsan National University, Kunsan, Korea, April 2, 2009.
- “Fundamental understanding of PEMFC (Electrochemical, Mechanical, and Material Aspects)”, Chiang Mai University, Chiang Mai, Thailand, June 17 – 19, 2008.
- “Jeonbuk Automobile Industry Status & Development Strategy”, 12th Jeonbuk Automobile Forum, Kunsan, Korea, May 8, 2008.

- “Hydrogen Fuel Cell Overview”, Seoul Development Institution, Seoul, Korea, June 12, 2007.
- “Experimental Techniques for PEM Fuel Cell”, Chiang Mai University, Chiang Mai, Thailand, February 8 – 11, 2006.

4) Industrial Policy Report Submitted to the National & Local Government:

- “Overall Inducing Plan of Research & Development Institutions”, June, 2010.
- “Regional Industry Road Map for Human Resource Training”, February, 2010.
- “Industry Supporting Plan for IT Fusion Agricultural Machinery of Next Generation”, May, 2009.
- “Printed Electronics Development Plan in Jeonbuk Province”, January, 2009.
- “Regional Technical Road Map for Automobile Industry in Jeonbuk Province”, December, 2008
- “Development of Manufacturing Process of Pickled Materials for Global Market”, August, 2008.

5) Technical Review

Funding Agencies:

National Science Foundation Small Business Innovative Research (NSF SBIR), Washington D.C, USA

Refereed Journals:

Journal of Power Sources, Journal of Hydrogen Energy, Fuel Cells, Journal of Electrochemical Society, International Journal of Heat and Mass Transfer.

PATENT

1. Hong-Ki Lee, Jae-Young Lee, **Woo-Kum Lee**, Bumchoul Choi, Sho-Nam Sock, Korea Patent #10-1428551 on August 2014.
2. Hong-Ki Lee, Jae-Young Lee, **Woo-Kum Lee**, Sho-Nam Sock, Yoou-Hee Joung, Jai-Hak Joung, Hong-Hee Lee, Kyu-Whan Kim, Korea Patent #10-1345609 on December 2013.
3. J. W. Van Zee, **Woo-kum Lee**, and M. Murthy, “METHODE AND SYSTEM FOR IMPROVING THE PERFORMANCE OF A FUEL CELL”, US Patent # 7267899

INVENTION DISCLOSURE

1. Yong-Nam Park, **Woo-Kum Lee**, Gyubum Joung, Provisional Patent Application (PPA) submitted on January 20015. (#10-2015-0007736)
2. Hong-Ki Lee, Jae-Young Lee, **Woo-Kum Lee**, Sho-Nam Sock, Yoou-Hee Joung, Jai-Hak Joung, Kyu-Whan Kim Provisional Patent Application (PPA) submitted on December 20014. (#10-2014-0173749)
3. **Woo-Kum Lee**, Yong-Nam Park, Hong-Ki Lee, Provisional Patent Application (PPA) submitted on September 20014. (#10-2014-0123786)
4. Yong-Nam Park, **Woo-Kum Lee**, Provisional Patent Application (PPA) submitted on May 20014. (#10-2014-0066392)
5. Yong-Nam Park, **Woo-Kum Lee**, Provisional Patent Application (PPA) submitted on February 20014. (#10-2014-0023952)

PEER REVIEWED PAPERS

1. Jae-Young Lee, **Woo-Kum Lee**, Hyungyul Rim, Gyubum Joung, & Hong-Ki Lee, “Preparation of Pt Nanocatalyst on Carbon Materials via a Reduction Reaction of a Pt Precursor in a Drying Process”, Journal of Nanoscience & Nanotechnology, Vol. 14, 7886 – 7890, 2014.
2. Jae-Young Lee, **Woo-Kum Lee**, Hyungyul Rim, Gyubum Joung, & Hong-Ki Lee, “Effect of Carbon Fiber Filament and Graphite Fiber on the Mechanical Conductivity of Elastic Carbon Composite Bipolar Plate for PEMFC”, Trans. of the Korean Hydrogen and New Energy Society, Vol. 25, No.2, pp. 131-138, 2014.
3. Jae-Young Lee, **Woo-Kum Lee**, Sung-Wan Hong, and Hong-Ki Lee, “A New Incorporation Method of Metallic Precursors Into a Nafion Film via a Drying Process for the Preparation of Metallic Nanocatalysts/Nafion”, Journal of

- Nanoscience & Nanotechnology, Vol. 13, 7886 – 7890, 2013.
4. Jae-Young Lee, Joongpyo Shim, Sung-Wan Hong, Kyeongsik Han, **Woo-Kum Lee**, and Hong-Ki Lee, “A New Deposition Method for the Preparation of Pt–Pd Nanocatalysts on a Nafion Coated Carbon Black via the Reduction of Metallic Precursors in a Drying Process”, *Journal of Nanoscience & Nanotechnology*, Vol. 13, 3634 – 3637, 2013.
 5. Hong Gun Kim, Young Jun Kim, Hee Jae Shin, Sun Ho Ko, Hyun Woo Kim, Young Min Kim, Yun Ju cha, **Woo-Kum Lee**, & Lee Ku Kwac, “A Study on the Bending Analysis of the Al Honeycomb Core Sandwich Composite Panel Bearing Large Bending Load”, *Advanced Materials Research*, Vol. 702, pp 245 – 252, 2013.
 6. Jae-Young Lee, Bumchoul Choi, **Woo-Kum Lee**, Il-Yub Choi, Joongpyo Shim, and Hong-Ki Lee, “Effect of Carbon Fiber Filament on Electrical and Mechanical Properties of Epoxy/Graphite Composite”, *Advanced Materials Research*, Vol. 699, pp. 502 – 506, 2013.
 7. Hong Gun Kim, Lee Ku Kwac, Woo-Kum Lee, Hwa Dong Cha, Jooung Dal Shin, “Hydrox Generator for Steel Manufacturing”, *한국생산제조시스템학회*, Vol. 12, No.1, 2011
 8. Jinzhu Tan, Y.J. Chao, Min Yang, **Woo-Kum Lee**, J.W. Van Zee, “Chemical and mechanical stability of a Silicone gasket material exposed to PEM fuel cell environment”, *International Journal of Hydrogen and Energy*, 36, 1846 – 1852, 2011.
 9. Jinzhu Tan, Y.J. Chao, J.W. Van Zee, and **W.K. Lee**, “Degradation of Elastomeric Gasket Materials in PEM Fuel Cells”, *J of Materials Science & Engineering*, A 445-446, 669 – 675, 2007.
 10. S. Shimpalee, **Woo-Kum Lee**, and, J. W. Van Zee, “Predicting the Transient Response of a Serpentine Flow Field PEMFC: Part I Excess to Normal Fuel and Air”, *J. Power Sources*, 156, 355 - 368, 2006.
 11. S. Shimpalee, **Woo-Kum Lee**, and, J. W. Van Zee, “Predicting the Transient Response of a Serpentine Flow Field PEMFC: Part II Normal to Minimal Fuel and Air”, *J. Power Sources*, 156, 369 - 374, 2006.
 12. Tao Gu, **W.-K. Lee**, and J. W. Van Zee, “Quantifying the ‘reverse water gas shift’ reaction inside a PEM fuel cell”, *Journal of Applied Catalysis B*, Environmental, Volume No. 56, page 43 - 49, 2005.
 13. R. Mohtadi, **W.-K. Lee**, and J. W. Van Zee, “The Effect of Temperature on the Adsorption Rate of Hydrogen Sulfide on Pt Anodes in a PEMFC”, *Journal of Applied Catalysis B*, Environmental, Volume No. 56, page 37 - 42, 2005.
 14. R. Mohtadi, **W.-k. Lee**, and J. W. Van Zee, “Assessing Durability of Cathodes Exposed to Common Air Impurities”, *Journal Power Sources*, Volume No. 138, page 216 – 225, 2004.
 15. Tao Gu, **W.-K. Lee**, J. W. Van Zee, and M. Murthy, “The Effect of Reformate Components on PEMFC Performance: Dilution and Reverse Water Gas Shift Reaction”, *Journal of the Electrochemical Society*, Volume No. 151 (12), page A2100 – A2105, 2004.
 16. R. Mohtadi, **W.-k. Lee**, S. Cowan, J. W. Van Zee, and M. Murthy, “Effects of Hydrogen Sulfide on the Performance of a PEM Fuel Cell”, *Electrochemical and Solid-State Letters*, Volume No. 6 (12), page A272 - A274, 2003.
 17. Herie J. Soto, **Woo-kum Lee**, J. W. Van Zee, and M. Murthy, “The Effect of Transient Ammonia Concentrations on PEMFC Performance”, *Electrochemical and Solid-State Letters*, Volume No. 6 (7), page A133 – A135, 2003.
 18. **W.-k. Lee**, J. W Van Zee, and M. Murthy, “A Method for Characterizing CO Transients in a PEMFC”, *Journal of Fuel Cells-From Fundamentals to System*, Volume No. 3 (1-2), page 52 – 58, 2003.
 19. **W.-k. Lee**, S. Shimpalee, and, J. W. Van Zee, “Verifying Predictions of Water and Current Distributions in a Serpentine Flow Field PEMFC”, *Journal of The Electrochemical Society*, Volume 150 (3), page A341 – A348, 2003.
 20. Mahesh Murthy, Manuel Esayian, **Woo-kum Lee**, and J. W. Van Zee, “The Effect of Temperature and Pressure on the Performance of a PEM Fuel Cell Exposed to Transient CO Concentrations”, *Journal of the Electrochemical Society*, Volume No. 150 (1), page A29 – A34, 2003.
 21. **W. K. Lee**, S. Shimpalee, J.W. Van Zee, and H. Naseri-Neshat, “Experimental techniques for PEM fuel cell”, *IECEC*, Volume No. 2, IECEC2001-ET-11, page 967 - 973, 2001.
 22. S. Shimpalee, **W. K. Lee**, J.W. Van Zee, and H. Naseri-Neshat, “Advance in computational fluid dynamics modeling for PEM fuel cells”, *IECEC*, Volume No. 2, IECEC2001-ET-10, page 959 - 965, 2001.
 23. Mahesh Murthy, Manuel Esayian, Alex Hobson, Steve MacKenzie, **Woo-kum Lee**, and J. W. Van Zee, “Performance of a Polymer Electrolyte Membrane Fuel Cell Exposed to Transient CO Concentrations”, *Journal of the Electrochemical Society*, Volume No. 148 (10), page A1141 - A1147, 2001.
 24. **Woo-kum Lee**, Chien-Hsien Ho, J. W. Van Zee, and Mahesh Murthy, “The effects of compression and gas diffusion layers on the performance Of A PEM Fuel Cell”, *Journal of Power Sources*, Volume 84, page 45 - 51, 1999.

25. **W. K. Lee**, J. W. Van Zee, S. Shimpalee, and S. Dutta, "Effect of Humidity on PEM Fuel Cell Performance Part I: Experiments", ASME International Mechanical Engineering Congress and Exposition, HTD-Vol. 364-1, Page 359 - 366, 1999.
26. S. Shimpalee, S. Dutta, **W. K. Lee**, and J. W. Van Zee, "Effect of humidity on PEM fuel cell performance: part II – Numerical Simulation", ASME International Mechanical Engineering Congress and Exposition, HTD-Volume No. 364-1, page 367 - 374, 1999.
27. H. Naseri-Neshat, S. Shimpalee, S. Dutta, **Woo-kum Lee**, and J.W. Van Zee, "Predicting the effect of gas-flow channel spacing on current density in PEM fuel cells", ASME International Mechanical Engineering Congress and Exposition, AES-Volume No. 39, page 337 - 350, 1999.

PROCEEDINGS

1. Min-Ho Song, Yong-Min Joung, Young-Ki Youn, Tai-Young Kim, Da-Young Kim, Gi-Sung Soh, Dong-Jun Soh, Seung-Yong Yang, Chan-Hee Han, and **Woo-Kum Lee**, "Effect of Siloxane on Steam Reforming Catalyst", Proceedings of the Korean Chemical Engineering Society 2014, Daejeon, Korea, April 2014.
2. Jae-Young Lee, Bumchoul Choi, **Woo-Kum Lee**, Joongpyo Shim, and Hong-Ki Lee, "Preparation of Elastic Bipolar Plate for Polymer Electrolyte Fuel Cells", Proceedings of the ASME 2013 International Mechanical Engineering Congress and Exposition, San Diego, California, USA, November 15 - 21, 2013.
3. Jae-Young Lee, **Woo-Kum Lee**, Hyungryul Rim, Seungweon Yang, and Hong-Ki Lee, "Preparation of PEM with Pt-Nanocatalyst Pattern Copying Flow Channel of Bipolar Plate by using UV Lithography", Proceedings of the 2013 Korean Hydrogen and New Energy Society, October 15 - 17, 2013.
4. J. Tan, Y.J. Chao, **Woo-kum Lee**, C.S. Smith, J.W. Van Zee, and C.T. Williams, "Degradation of Gasket Materials in a Simulated Fuel Cell Environment", Proceedings of the 4th International Conference on Fuel Cell Science, Engineering and Technology, Irvine, CA, June 19 - 21, 2006.
5. Jinzhu Tan, Y. J. Chao, **Woo-Kum Lee**, J. W. Van Zee, "Relationship Between Applied Torque and Compression of Gasket in a Fuel Cell", Proceedings of the 4th International Conference on Fuel Cell Science, Engineering and Technology, Irvine, CA, June 19 - 21, 2006.
6. J. Tan, Y.J. Chao, **Woo-kum Lee**, C.S. Smith, J.W. Van Zee, and C.T. Williams, "Chemical Degradation of Seal Materials in Fuel Cell Environment", Proceedings of the First Annual Korea-USA Joint Symposium on Hydrogen and Fuel Cell Technologies, Daejeon, Korea, May 24-26, 2006.
7. S. Greenway, S. Shimpalee, **Woo-Kum Lee**, Y. Goo, S. Jeoung, S. Yoo, and J. W. Van Zee, "The Effect of Dissimilar Anode/Cathode Flow Field Designs in PEM Fuel Cells", Proceedings of the 208th Meeting of The Electrochemical Society, Los Angeles, CA, October 16 – 21, 2005.
8. **W-k. Lee**, S. Shimpalee, Y. Gu, S. K. Jeoung, S. E. Yoo, and J. W. Van Zee, "Study of Flow Field Design for Improving PEMFC Stack Performance", Proceeding in the 206th meeting of the Electrochemical Society, Honolulu, Hawaii, 2004.
9. **Woo-kum Lee**, John. W. Van Zee, and Mahesh Murthy, "Determination of the Dynamic Characteristics in the CO Transient Process in a PEM Fuel Cell", Proceeding in AIChE, 513 – 519, New Orleans, LA, March 2002.
10. Tao Gu, **W-k. Lee**, and John. W. Van Zee, "The Dilution Effect of Reformate Components on PEMFC Performance", Electrochemical Society Proceedings, Volume 2002-31, page 287 – 297, 2002.
11. H.J. Soto, **W-k. Lee**, and John. W. Van Zee, "The Effect of Relatively High Ammonia Concentrations in Reformate on PEMFC Performance", Electrochemical Society Proceedings, Volume 2002-31, page 141 – 148, 2002.
12. M. Murthy, **Woo-kum Lee**, and J. W. Van Zee, "The Effect of Reformate on PEM Fuel Cell Performance", Proceeding in AIChE, New Orleans, LA, March 2002.
13. S. Shimpalee, **Woo-kum. Lee**, J. W. Van Zee, and H. Naseri-Neshat, "Using CFD to explain transient response of a PEM Fuel Cell", Proceeding in the 200th meeting of the Electrochemical Society, San Francisco, CA. September 2001.
14. S. Greenway, S. Shimpalee, **W-k. Lee**, and J. W. Van Zee, "The Interaction of Permeability and Flow-Field Geometry on PEMFC Performance", Proceeding in the 202th meeting of the Electrochemical Society, Salt Lake, Utah, October 2002.
15. J. Glandt, S. Shimpalee, **W-k. Lee**, and J. W. Van Zee, "Modeling the effect of flow field design on PEM fuel cell performance", Proceeding in AIChE's 2002 spring national meeting, New Orleans, LA. March 2002.

PRESENTATIONS

1. Min-Ho Song, Jae-Young Lee, Gyu-Bum Joung, **Woo-Kum Lee**, and Hong-Ki Lee, “Effect of Organifier Elimination on Mechanical Properties of an Epoxy/Organoclay Nanocomposite Prepared by Using an Electromagnetic Field Dispersion Method”, 2015 International Conference on Advances in Composite Materials and Structures, Istanbul, Turkey, April 13 - 15, 2015.
2. Jae-Young Lee, Min-Ho Song, Eunsoo Jin, Young-Tai Yoo, and **Woo-Kum Lee**, “Preparation of Epoxy Nanocomposite Incorporated with Silane Treated Nanosilica for End Plate”, 2015 International Conference on Advances in Composite Materials and Structures, Istanbul, Turkey, April 13 - 15, 2015.
3. **Woo-Kum Lee**, Hyung-Ryul Rim, Gyu-Bum Joung, Sehui Lee, Eunsoo Jin, Jae-Young Lee, and Hong-Ki Lee, “Effect of Exposure Time to Organometallic Precursors for the Preparation of Pt Nanocatalysts on a Nafion-coated Carbon Black”, 2014 European Hydrogen Energy Conference, Seville, Spain, March 12 - 14, 2014.
4. Jae-Young Lee, **Woo-Kum Lee**, Hyung-Ryul Rim, Gyu-Bum Joung, and Hong-Ki Lee, “Preparation of Pt Nanopatterning for PEMFC on a Self-Assembled Copolymer Thin Film Using a Drying Process”, 2014 European Hydrogen Energy Conference, Seville, Spain, March 12 - 14, 2014.
5. Jae-Young Lee, **Woo-Kum Lee**, Hyung-Ryul Rim, Seung-Weon Yang, Sehui Lee, Eunsoo Jin, and Hong-Ki Lee, “Effect of Graphite Fiber on Electrical Conductivity of an Epoxy/Carbon Composite Used for a Bipolar Plate in a Fuel Cell”, 2014 European Hydrogen Energy Conference, Seville, Spain, March 12 - 14, 2014.
6. Hyungryul Rim, Jae-Young Lee, **Woo-Kum Lee**, and Hong-Ki Lee, “Effect of Temperature on the Self Assembling Property of Copolymer Thin Film to Prepare Pt Nanopattern for PEMFC”, 2013 Korean Hydrogen and New Energy Conference, October 15 - 17, 2013.
7. Jae-Young Lee, Hyungryul Rim, **Woo-Kum Lee**, and Hong-Ki Lee, “Effect of Solvent on the Phase Separation of Polymer Self Assembly Thin Film to Prepare Pt Nanopattern”, 2013 Korean Hydrogen and New Energy Conference, October 15 - 17, 2013
8. Jinzhu Tan, Y. J. Chao, **Woo-Kum Lee**, and J. W. Van Zee, “Chemical, Mechanical and Dynamic Mechanical Stability of Gasket Materials in PEM Fuel Cell Environment”, 3rd Annual Korea-USA Joint Symposium on Hydrogen & Fuel Cell Technologies, Seoul, Korea, June 13 – 15, 2008.
9. J. Tan, Y.J. Chao, **Woo-Kum Lee**, C.S. Smith, J.W. Van Zee, and C.T. Williams, “Degradation of Gasket Materials in a Simulated Fuel Cell Environment”, Presented at the 4th International Conference on Fuel Cell Science, Engineering and Technology, Irvine, CA, June 19 - 21, 2006.
10. Jinzhu Tan, Y. J. Chao, **Woo-Kum Lee**, J. W. Van Zee, “Relationship Between Applied Torque and Compression of Gasket in a Fuel Cell”, Presented at the 4th International Conference on Fuel Cell Science, Engineering and Technology, Irvine, CA, June 19 - 21, 2006.
11. J. Tan, Y.J. Chao, **Woo-kum Lee**, C.S. Smith, J.W. Van Zee, and C.T. Williams, “Chemical Degradation of Seal Materials in Fuel Cell Environment”, Presented at the First Annual Korea-USA Joint Symposium on Hydrogen and Fuel Cell Technologies, Daejeon, Korea, May 24 - 26, 2006.
12. W. Wang, **W-k. Lee**, and J. Van Zee, “A Model for SO₂ Impurity in Air Fed to a Proton Exchange Membrane Fuel Cell”, Presented at the 208th Meeting of The Electrochemical Society, Los Angeles, California from, October 16 - 21, 2005.
13. S. Greenway, S. Shimpalee, **W-k. Lee**, Y. Goo, S. Jeoung, S. Yoo, and J. W. Van Zee, “The Effect of Dissimilar Anode/Cathode Flow Field Designs in PEM Fuel Cells”, Presented at the 208th Meeting of The Electrochemical Society, Los Angeles, CA, October 16 – 21, 2005.
14. W. Wang, J. Van Zee, and **W-k. Lee**, “The Effect of N₂ Dilution on CO Poisoning in a Proton Exchange Membrane Fuel Cell”, Presented at the 208th Meeting of The Electrochemical Society, Los Angeles, California, October 16 - 21, 2005.
15. **W-k. Lee**, A. Jena, K. Gupta, and J. W. Van Zee, “Characterizing permeability changes and hydrophobic nature and their correlation with PEMFC Performance”, Presented in Fuel Cell Seminar 2004, San Antonio, Texas, Nov. 1 – 5, 2004.
16. **W-k. Lee**, S. Shimpalee, Y. Gu, S. K. Jeoung, S. E. Yoo, and J. W. Van Zee, “Study of Flow Field Design for Improving PEMFC Stack Performance”, Presented at the 206th meeting of the Electrochemical Society, Honolulu, Hawaii, October 3-8, 2004.
17. **Woo-kum Lee**, J. W. Van Zee, and Mahesh Murthy, “Determination of the Dynamic Characteristics in the CO Transient Process in a PEM Fuel Cell”, Presented in AIChE, New Orleans, LA, March 10 – 15, 2002.

18. **Woo-kum Lee**, J. W. Van Zee, Mahesh Murthy, and Manuel Esayian, "The Effect of Temperature and Pressure on the Performance of a PEMFC during CO Poisoning", Presented in the 200th meeting of the Electrochemical Society, San Francisco, CA, September 2-7, 2001.
19. **Woo-kum Lee**, S. Shimpalee, J.W. Van Zee, and H. Naseri-Neshat, "Experimental techniques for PEM fuel cell", Presented in IECEC, Savannah, GA, Jul. 29 – Aug. 2, 2001.
20. **Woo-kum Lee** and J.W. Van Zee, S. Shimpalee, S. Dutta, "Effect of Humidity on PEM Fuel Cell Performance Part I: Experiments", Presented in ASME IMECE, Nashville, TN, November 14 – 19, 1999.
21. **Woo-kum Lee** and J.W. Van Zee, "Modeling the behavior of Zn-AgO batteries during high rates of discharge", Presented in NASA Aerospace Battery Workshop, 47, 1996.
22. W. Wang, J. Van Zee, and **W-k. Lee**, "The Effect of N₂ Dilution on CO Poisoning in a Proton Exchange Membrane Fuel Cell", Presented at the 208th Meeting of The Electrochemical Society, Los Angeles, California, October 16 - 21, 2005.
23. W. Wang, **W-k. Lee**, and J. Van Zee, "A Model for SO₂ Impurity in Air Fed to a Proton Exchange Membrane Fuel Cell", Presented at the 208th Meeting of The Electrochemical Society, Los Angeles, California from, October 16 - 21, 2005.
24. S. Greenway, S. Shimpalee, **W-k. Lee**, J. Van Zee, Y. Goo, S. Jeoung and S. Yoo, "The Effect of Dissimilar Anode/Cathode Flow Field Designs in PEM Fuel Cells", Presented at the 208th Meeting of The Electrochemical Society, Los Angeles, California, October 16 - 21, 2005.
25. R. Mohtadi, **W-k. Lee**, and J. W. Van Zee, "Studies on Anodic and Cathodic Impurities in PEMFCs Using Impedance Spectroscopy", Presented at the 6th International EIS Conference, Cocoa Beach, FL, May 17-20, 2004.
26. T. Gu, **W-k. Lee**, and J. W. Van Zee, "Using Electrochemical Impedance Spectroscopy as a Diagnostic Tool for PEM Fuel Cell Poisoning", Presented at the 6th International EIS Conference, Cocoa Beach, FL, May 17-20, 2004.
27. R. Mohtadi, **W-k. Lee**, S. Cowan, M. Murthy, and J. W. Van Zee, "Effects of Hydrogen Sulfide on the Performance of a PEM Fuel Cell", Presented in 204th meeting of the Electrochemical Society, Orlando, FL, October 12-16, 2003.
28. R. Mohtadi, **W-k. Lee**, and J. W. Van Zee, "Effect of Hydrogen Sulfide on the Performance of PEM Fuel Cells", Presented in AIChE, Indianapolis, IN, Nov. 4 – 8, 2002
29. W. Wang, **W-k. Lee**, and J. W. Van Zee, "Using CO Stripping to Study Poisoning of PEM Fuel Cells", Presented in AIChE, Indianapolis, IN, Nov. 4 – 8, 2002
30. S. Kim, **W-k. Lee**, S. Shimpalee, and J. W. Van Zee, "The Voltage Change Effect on a PEMFC", Presented in the 202th meeting of the Electrochemical Society, Salt Lake, Utah, October 20-24, 2002.
31. T. Gu, **W-k. Lee**, and J. W. Van Zee, "The Dilution Effect of Reformate Components on PEMFC Performance", Presented in the 202th meeting of the Electrochemical Society, Salt Lake, Utah, October 20-24, 2002.
32. H.J. Soto, **W-k. Lee**, and J. W. Van Zee, "The Effect of Ammonia in Reformate on PEMFC Performance", Presented in the 202th meeting of the Electrochemical Society, Salt Lake, Utah, October 20-24, 2002.
33. S. Greenway, S. Shimpalee, **W-k. Lee**, and J. W. Van Zee, "The Interaction of Permeability and Flow-Field Geometry on PEMFC Performance", Presented in the 202th meeting of the Electrochemical Society, Salt Lake, Utah, October 20-24, 2002.
34. S. Kim, **W-k. Lee**, S. Shimpalee, and J. W. Van Zee, "Experimental study of transient response for a PEMFC", Presented in the 201th meeting of the Electrochemical Society, Philadelphia, PA, May 12-17, 2002.
35. S. Shimpalee, **W-k. Lee**, and J. W. Van Zee, "Prediction response for a 25-cm² PEM fuel cell", Presented in the 201th meeting of the Electrochemical Society, Philadelphia, PA, May 12-17, 2002.
36. S. Shimpalee, J. Glandt, S. Greenway, **W-k. Lee**, and J. W. Van Zee, "The effect of flow-field configurations on PEMFC performance", Presented in the 201th meeting of the Electrochemical Society, Philadelphia, PA, May 12-17, 2002.
37. M. Murthy, **Woo-kum Lee**, and J. W. Van Zee, "The Effect of Reformate on PEM Fuel Cell Performance", Presented in AIChE, New Orleans, LA, March 10 – 15, 2002.
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