

**Jeongmin Ahn**  
Washington State University  
School of Mechanical and Materials Engineering  
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## **RESEARCH AREAS**

### **MEMS (Micro Electro Mechanical Systems), Combustion, Energy Conversion**

Gas-phase and catalytic combustion in counterflow, heat-recirculating combustors/exchangers  
Development of meso- and micro-combustors  
Catalyst development for ultra low-temperature reaction  
Solid Oxide Fuel Cells (SOFCs)  
Development of an integrated meso- and micro-scale power generator  
Thermal transpiration based propulsion and pumping

## **EDUCATION**

University of Southern California, Los Angeles, CA  
Department of Aerospace and Mechanical Engineering  
*Ph. D., Aerospace Engineering*

December 2005

University of Michigan, Ann Arbor, MI  
Department of Aerospace Engineering  
*M.S.E., Aerospace Engineering*

May 2001

Rensselaer Polytechnic Institute, Troy, NY  
Department of Mechanical, Aerospace, and Nuclear Engineering  
*B.S., Mechanical Engineering. Minor in Economics*

May 1999

## **EXPERIENCE**

**Washington State University**, Pullman, WA  
School of Mechanical and Materials Engineering

Assistant Professor: (August 2006 - present)

**University of Southern California**, Los Angeles, CA  
Department of Aerospace and Mechanical Engineering

Research Associate: (January 2006 – July 2006)

Graduate Research Assistant: (September 2001 – December 2005)

Design, build and test of integrated meso- and micro-scale power generators

Graduate Teaching Assistant:

AE 441 (Senior Projects Laboratory) – Fall 2001

AE 261 (Basic Flight Mechanics) – Spring 2002

**University of Michigan**, Ann Arbor, MI  
Department of Aerospace Engineering

Graduate Research Assistant: (May 2000 – May 2001)

Performed a numerical (FORTRAN) investigation of EMF (Electromagnetic Forming)

Graduate Teaching Assistant:

AE 335 (Aircraft and Spacecraft Propulsion) – Spring 2001

## **AWARDS & HONORS**

- Awarded in *WSU Faculty Excellence Recognition Program*, 2008
- Selected one of 8 finalists in *The 2007 ASME Innovation Showcase (I-Show) Competition*, 2007
- *Who's Who*, 2007 -
- Recipient of *Faculty Travel Grant* from Office of Grant and Research Development (OGRD) at WSU, 2007
- Recipient of *The Young Researchers Travel Grant* from National Science Foundation (NSF), 2007
- Recipient of *Student Travel Awards* from Western States Section of the Combustion Institute (WSSCI), 2002 - 2005
- Recipient of *The Graduate Research Assistantship* from University of Southern California, 2001 - 2005
- Recipient of *The Graduate Teaching Assistantship* from University of Southern California, 2001 - 2002
- Recipient of *The Graduate Teaching Assistantship* from University of Michigan, 2000 - 2001
- Biography has been accepted for publication in *The National Dean's List 21<sup>st</sup> & 22<sup>nd</sup> Annual Edition*, Multiple year honorees, 1997 - 1999
- Recipient of *The International Award for Excellence Scholarship* from Rensselaer Polytechnic Institute, 1996 - 1999
- The 1<sup>st</sup> place in *The 16<sup>th</sup> Annual AHS/Industry/NASA Student Design Competition* (Responsible for designing Hydraulic Systems of the Rotorcraft), 1999
- Admitted to *Pi Tau Sigma*, National Honor Mechanical Engineering Society, 1999
- Admitted to *Alpha Pi Mu*, National Honor Industrial Engineering Society, 1996

## PUBLICATIONS

### Books

Jeongmin Ahn, “Swiss Roll Heat Exchangers/Reactors and Solid-Oxide-Fuel-Cells Power Generation”, VDM Publisher, Saarbrücken, Germany, ISBN: 978-3-639-05298-5 (2008).

### Referred Journal Publications

Jeong-Hyun Cho, ChienShung Lin, Cecilia D. Richrds, Robert F. Richards, Jeongmin Ahn, and Paul D. Ronney, “Demonstration of an external combustion micro-heat engine”, *Proceedings of the Combustion Institute*, Vol. 32, accepted for publication.

Tao Yuan, Rui Cai, Ke Wang, Ran Ran, Guixin Wang, Zongping Shao, Jeongmin Ahn, “Constricted space combustion synthesis and high rate-performance of  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  for secondary Li-ion battery”, *Power Sources*, submitted for publication.

Hongxia Gu, Yao Zheng, Ran Ran, Zongping Shao, Wanqin Jin, Nanping Xu, Jeongmin.Ahn, “Synthesis and assessment of  $\text{La}_{0.8}\text{Sr}_{0.2}\text{Sc}_y\text{Mn}_{1-y}\text{O}_{3-\delta}$  as cathode for ScSZ-electrolyte SOFCs”, *Power Sources*, submitted for publication.

Jeongmin Ahn, Paul D. Ronney, Zongping Shao, and Sossina Haile, “A thermally self-sustaining miniature solid oxide fuel cell”, *Fuel Cell Science and Technology*, accepted for publication.

Ye Lin, Ran Ran, Yao Zheng, Zongping Shao, Wanqin Jin, Nanping Xu, Jeongmin Ahn, “Evaluation of  $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Co}_{0.8}\text{Fe}_{0.2}\text{O}_{3-\delta}$  as a potential cathode for an anode-supported proton-conducting solid-oxide fuel cell”, *Power Sources*, Vol. 180, pp. 15-22 (2008).

Chunming Zhang, Yao Zheng, Ran Ran, Zongping Shao, Wanqin Jin, Nanping Xu, Jeongmin Ahn, “Initialization of a methane-fueled single-chamber solid-oxide fuel cell with NiO+SDC anode and BSCF+SDC cathode”, *Power Sources*, Vol. 179, pp. 640-648 (2008).

Kang Wang, Ran Ran, Wei Zhou, Hongxia Gu, Zongping Shao, and Jeongmin Ahn, “Properties and Performance of  $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Co}_{0.8}\text{Fe}_{0.2}\text{O}_{3-\delta}+\text{Sm}_{0.2}\text{Ce}_{0.8}\text{O}_{1.9}$  Composite Cathode”, *Power Sources*, Vol. 179, pp. 60-68 (2008)

Wei Zhou, Ran Ran, Zongping Shao, Rui Cai, Wanqin Jin, Nanping Xu, and Jeongmin Ahn, “Electrochemical performance of silver-modified  $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Co}_{0.8}\text{Fe}_{0.2}\text{O}_{3-\delta}$  cathodes prepared via electroless deposition”, *Electrochimica Acta*, Vol. 53, pp. 4370-4380 (2008).

Hongxia Gu, Ran Ran, Wei Zhou, Zongping Shao, Wanqin Ji, Nanping Xu, and Jeongmin Ahn, “Solid-oxide fuel cell operated on in-situ catalytic decomposition products of liquid hydrazine”, *Power Sources*, Vol. 177, pp. 323-329 (2008).

Zongping Shao, Sossina M. Haile, Jeongmin Ahn, Paul D. Ronney, Zhongliang Zhan and Scott A. Barnett, “A thermally self-sustained micro solid-oxide fuel-cell stack with high power density”, *Nature*, Vol. 435, pp. 795-798 (2005).

Jeongmin Ahn, Craig Eastwood, Lars Sitzki and Paul D. Ronney, "Gas-phase and catalytic combustion in heat-recirculating burners", *Proceedings of the Combustion Institute*, Vol. 30, pp. 2463-2472 (2005).

Kaoru Maruta, Koichi Takeda, Jeongmin Ahn, Kevin Borer, Lars Sitzki, Paul D. Ronney, and Olaf Deutschmann, "Extinction limits of catalytic combustion in microchannels", *Proceedings of the Combustion Institute*, Vol. 29, pp. 957-963 (2002).

## **Other Publications**

Jeong-Hyun Cho, ChienShung Lin, Cecilia D. Richrds, Robert F. Richards, and Jeongmin Ahn, "Demonstration of an external combustion micro-heat engine", The 8th International Workshop on Micro and Nanotechnology for Power Generation and Energy Conversion Applications (PowerMEMS 2006) and The 2nd MEMS (Micro Environmental Machine Systems) Symposium, Sendai, Japan, November 2008.

Kang Wang, Jeongmin Ahn, and Zongping Shao, "A High-Performance No-Chamber Fuel Cell Operated on Ethanol Flame", ASME International Mechanical Engineering Congress and Exposition (IMECE), Boston, MA, November 2008.

Najmeddin Shafrei Tehrany, Chien Shung Lin, Cory Bloomquist, Konstantin Matveev, and Jeongmin Ahn, "Development of Combustion-Driven Small Thermoacoustic Engine", ASME International Mechanical Engineering Congress and Exposition (IMECE), Boston, MA, November 2008.

Kang Wang, Jeongmin Ahn, and Zongping Shao, "A High-Performance No-Chamber Fuel Cell Operated on Ethanol Flame", The 6th International Conference on Fuel Cell Science, Engineering and Technology, Denver, CO, June 2008.

Najmeddin Shafrei Tehrany, Chien Shung Lin, Jeongmin Ahn, and Konstantin Matveev, "Development of Combustion-Driven Small Thermoacoustic Engine", The Western States Section of the Combustion Institute (WSSCI), Los Angeles, CA, March 2008.

Lindsay Sanford, Shuo-Yu Huang, Chien Shung Lin, Jungmin Lee, Jeongmin Ahn, and Paul D. Ronney, "Plastic Mesoscale Combustors/Heat Exchangers", ASME International Mechanical Engineering Congress and Exposition (IMECE), Seattle, WA, November 2007.

Patrick Hyland, Jungmin Lee, Jeongmin Ahn, and Paul D. Ronney, "Effect of Ammonia Treatment on Pt Catalyst Used for Low-Temperature Reaction", ASME International Mechanical Engineering Congress and Exposition (IMECE), Seattle, WA, November 2007.

Jeongmin Ahn, Paul D. Ronney, Zongping Shao, and Sossina Haile, "A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell", ASME International Mechanical Engineering Congress and Exposition (IMECE), Seattle, WA, November 2007.

Jeonghyun Cho, Jungmin Lee, Chien Shung Lin, Lindsay Sanford, James Huang, Cecilia D. Richards, Robert F. Richards, and Jeongmin Ahn, "Demonstration of An External Combustion Micro-Heat Engine", The Western States Section of the Combustion Institute (WSSCI), Livermore, CA, October 2007.

Jeongmin Ahn, Paul D. Ronney, Zongping Shao, and Sossina Haile, "A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell", The 5th International Energy Conversion Engineering Conference and Exhibit (IECEC), St. Louis, MO, June 2007.

Jeongmin Ahn, and Paul D. Ronney, "Plastic Mesoscale Heat Exchangers", The 5th International Energy Conversion Engineering Conference and Exhibit (IECEC), St. Louis, MO, June 2007.

Jeongmin Ahn, Paul D. Ronney, Zongping Shao, and Sossina Haile, "A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell", The 5th International Conference on Fuel Cell Science, Engineering and Technology, Brooklyn, NY, June 2007.

Jeongmin Ahn, and Paul D. Ronney, "Effect of Wall Thermal Conductivity and Thickness on the Performance of Heat-Recirculating Reactors", The 5th U.S. National Combustion Meeting, San Diego, CA, March 2007.

Jeongmin Ahn, and Paul D. Ronney, "Effect of Ammonia Treatment on Pt Catalyst Used for Low-Temperature Reaction", The 5th U.S. National Combustion Meeting, San Diego, CA, March 2007.

Younho Kim, Hwanil Huh, Jeongmin Ahn, and Paul D. Ronney, "Effect of Scale and Fuel Type on Heat-Recirculation Combustor Performance", The 5th U.S. National Combustion Meeting, San Diego, CA, March 2007.

Jeongmin Ahn, Paul D. Ronney, Zongping Shao, and Sossina Haile, "A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell", The 6th International Workshop on Micro and Nanotechnology for Power Generation and Energy Conversion Applications (PowerMEMS 2006), Berkeley, CA, November 2006.

Hwayoung Oh, Hwanil Huh, Jeongmin Ahn, and Paul D. Ronney, "Effect of scale on the Performance of Heat-Recirculating Reactors", The 4th International Energy Conversion Engineering Conference and Exhibit, San Diego, CA, June 2006.

Jeongmin Ahn, and Paul D. Ronney, "Effect of Wall Thermal Conductivity and Thickness on the Performance of Heat-Recirculating Reactors", The Western States Section of the Combustion Institute (WSSCI), Stanford, CA, October 2005.

Jeongmin Ahn, Paul D. Ronney, Zongping Shao, and Sossina M. Haile, "A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell", The 4th Joint meeting of the U.S. Sections of the Combustion Institute, Philadelphia, PA, March 2005.

Jeongmin Ahn, and Paul D. Ronney, "Plastic Mesocombustors", The 4th Joint meeting of the U.S. Sections of the Combustion Institute, Philadelphia, PA, March 2005.

Jeongmin Ahn, Craig Eastwood, Paul D. Ronney, Zongping Shao, and Sossina M. Haile, "A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell", The Western States Section of the Combustion Institute (WSSCI), Davis, CA, April 2004.

Sossina M. Haile, Chan Kwak, Jeongmin Ahn, Craig Eastwood, and Paul D. Ronney, "Solid Oxide Fuel Cells for Portable Applications", 2003 Materials Research Society (MRS) Fall Meeting, Boston, MA, December 2003.

Jeongmin Ahn, Craig Eastwood, and Paul D. Ronney, “Extinction Limits of Heat-Recirculating Burners”, The Western States Section of the Combustion Institute (WSSCI), Los Angeles, CA, October 2003.

Jeongmin Ahn, Craig Eastwood, Kevin Borer, Lars Sitzki and Paul D. Ronney, “Catalytic and Non-Catalytic Combustion in Heat-Recirculating Burners”, The 3rd Joint meeting of the U.S. Sections of the Combustion Institute, Chicago, IL, March 2003.

Kaoru Maruta, Koichi Takeda, Jeongmin Ahn, Kevin Borer, Lars Sitzki and Paul D. Ronney, Olaf Deutschmann, “Extinction Limits of Catalytic Combustion in Microchannels”, Mini-Symposium MS10-Numerical Modeling of Microscale Combustion, Italy, May 2002.

Jeongmin Ahn, Kevin Borer, Lars Sitzki and Paul D. Ronney, “Combustion and Power Generation in Microscale Heat-Recirculating Burners”, The Western States Section of the Combustion Institute (WSSCI), San Diego, CA, March 2002.

### **Invited Seminars**

“Solid Oxide Fuel Cells Driven Electric Power Generation”, *3 Tech Energy Corporation*, San Diego, CA, July 2007.

“Catalytic and Non-Catalytic Reaction in Heat-Recirculating Reactors and Applications to Power Generation”, *Washington State University*, Pullman, WA, May 2007.

“An Experimental Study of Catalytic and Non-Catalytic Reaction in Heat-Recirculating Reactors and Applications to Power Generation”, *Washington State University*, Pullman, WA, January 2007.

“Solid Oxide Fuel Cells Driven Electric Power Generation”, *NexGen, Inc.*, San Francisco, CA, July 2006.

“An Experimental Study of Catalytic and Non-Catalytic Reaction in Heat-Recirculating Reactors and Applications to Power Generation”, *Stevens Institute of Technology*, Hoboken, NJ, April 2006.

“An Experimental Study of Catalytic and Non-Catalytic Reaction in Heat-Recirculating Reactors and Applications to Power Generation”, *Washington State University*, Pullman, WA, March 2006.

“An Experimental Study of Catalytic and Non-Catalytic Reaction in Heat-Recirculating Reactors and Applications to Power Generation”, *Auburn University*, Auburn, AL, March 2006.

“An Experimental Study of Catalytic and Non-Catalytic Reaction in Heat-Recirculating Reactors and Applications to Power Generation”, *KAIST (Korea Advanced Institute of Science and Technology)*, Daejeon, Korea, November 2005.

“Plastic Mesoscale Swiss Roll Reactor and Applications to Electric Power Generation”, *UKC 2005 (USA-Korea Conference on Sciences, Technologies, and Entrepreneurship)*, Irvine, CA, August 2005.

“Combustion in Heat-Recirculating Reactors and Applications to Power Generation”, *Shibaura Institute of Technology*, Tokyo, Japan, July 2005.

“Combustion in Heat-Recirculating Reactors and Applications to Power Generation”, *Tohoku University*, Sendai, Japan, July 2005.

“Microscale Combustion and Electrical Power Generation”, *Choongnam National University*, Daejeon, Korea, February 2004.

## **Conference Presentations and Posters**

Jeong-Hyun Cho, ChienShung Lin, Cecilia D. Richrds, Robert F. Richards, and Jeongmin Ahn, “Demonstration of an external combustion micro-heat engine”, The 8th International Workshop on Micro and Nanotechnology for Power Generation and Energy Conversion Applications (PowerMEMS 2006) and The 2nd MEMS (Micro Environmental Machine Systems) Symposium, Sendai, Japan, November 2008.

Kang Wang, Jeongmin Ahn, and Zongping Shao, “A High-Performance No-Chamber Fuel Cell Operated on Ethanol Flame”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Boston, MA, November 2008.

Najmeddin Shafrei Tehrany, Chien Shung Lin, Cory Bloomquist, Konstantin Matveev, and Jeongmin Ahn, “Development of Combustion-Driven Small Thermoacoustic Engine”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Boston, MA, November 2008.

Toni Gutknecht, and Jeongmin Ahn, “The Influence of Ammonia on Pt-Catalysts on Microcombustors”, Research Experience for Undergraduate (REU) Poster Session, Pullman, WA, August 2008.

Jeong-Hyun Cho, ChienShung Lin, Cecilia D. Richrds, Robert F. Richards, Jeongmin Ahn, and Paul D. Ronney, “Demonstration of an external combustion micro-heat engine”, The 32nd International Symposium on Combustion, Combustion Institute, Montreal, Canada, August 2008, published in *Proceedings of the Combustion Institute*, Vol. 32.

Jeongmin Ahn, and Paul D. Ronney, “Effect of wall thermal conductivity and thickness on the performance of heat-recirculating reactors”, The 32nd International Symposium on Combustion, Combustion Institute, Montreal, Canada, August 2008.

Kang Wang, Jeongmin Ahn, and Zongping Shao, “A High-Performance No-Chamber Fuel Cell Operated on Ethanol Flame”, The 6th International Conference on Fuel Cell Science, Engineering and Technology, Denver, CO, June 2008.

ChienShung Lin, and Jeongmin Ahn, “Swiss-Roll Type Heat-Recirculating Combustors and Applications to Power Generation”, MME Student Day 2008, Pullman, WA, April 2008.

Patrick Hyland, and Jeongmin Ahn, “The Influence of Ammonia on Pt-Catalysts on Microcombustors”, MME Student Day 2008, Pullman, WA, April 2008.

Lindsay Sanford, ChienShung Lin, and Jeongmin Ahn, “Plastic Mesocombustors”, MME Student Day 2008, Pullman, WA, April 2008.

Chienshung Lin, and Jeongmin Ahn, “Swiss-Roll Type Heat-Recirculating Combustors and Applications to Power Generation”, Academic Showcase 2008, Pullman, WA, March 2008.

Najmeddin Shafrei Tehrani, Chien Shung Lin, Jeongmin Ahn, and Konstantin Matveev, “Development of Combustion-Driven Small Thermoacoustic Engine”, The Western States Section of the Combustion Institute (WSSCI), Los Angeles, CA, March 2008.

Chienshung Lin, and Jeongmin Ahn, “Swiss-Roll Type Heat-Recirculating Combustors and Applications to Power Generation”, The William R. Wiley Exposition of Graduate and Professional Studies, Pullman, WA, February 2008.

Lindsay Sanford, Shuo-Yu Huang, Chien Shung Lin, Jungmin Lee, and Jeongmin Ahn, “GreEnergy Micro Power Inc. (GMPI)”, The 5<sup>th</sup> Annual Fall Business Plan Competition, Pullman, WA, November 2007.

Lindsay Sanford, Shuo-Yu Huang, Chien Shung Lin, Jungmin Lee, Jeongmin Ahn, and Paul D. Ronney, “Plastic Mesoscale Combustors/Heat Exchangers”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Seattle, WA, November 2007.

Patrick Hyland, Jungmin Lee, Jeongmin Ahn, and Paul D. Ronney, “Effect of Ammonia Treatment on Pt Catalyst Used for Low-Temperature Reaction”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Seattle, WA, November 2007.

Jeongmin Ahn, Paul D. Ronney, Zongping Shao, and Sossina Haile, “A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Seattle, WA, November 2007.

Lindsay Sanford, Shuo-Yu Huang, Chien Shung Lin, Jungmin Lee, and Jeongmin Ahn, “Plastic Microscale Combustors”, *Finalist* of Innovation Showcase (I-Show) at ASME International Mechanical Engineering Congress and Exposition (IMECE), Seattle, WA, November 2007.

Jeonghyun Cho, Jungmin Lee, Chien Shung Lin, Lindsay Sanford, James Huang, Cecilla D. Richards, Robert F. Richards, and Jeongmin Ahn, “Demonstration of An External Combustion Micro-Heat Engine”, The Western States Section of the Combustion Institute (WSSCI), Livermore, CA, October 2007.

Lindsay Sanford, Shuo-Yu Huang, Chien Shung Lin, Jungmin Lee, and Jeongmin Ahn, “Plastic Microscale Combustors”, WSU-CEA Fall 2007 Advisory Board meeting, Seattle, WA, September 2007.

Patrick Hyland, and Jeongmin Ahn, “The Influence of Ammonia on Pt-Catalysts on Microcombustors”, Research Experience for Undergraduate (REU) Poster Session, Pullman, WA, August 2007.

Jeongmin Ahn, Paul D. Ronney, Zongping Shao, and Sossina Haile, “A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell”, The 5th International Energy Conversion Engineering Conference and Exhibit (IECEC), St. Louis, MO, June 2007.

Jeongmin Ahn, and Paul D. Ronney, “Plastic Mesocombustors”, The 5th International Energy Conversion Engineering Conference and Exhibit (IECEC), St. Louis, MO, June 2007.

Jeongmin Ahn, Paul D. Ronney, Zongping Shao, and Sossina Haile, "A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell", The 5th International Conference on Fuel Cell Science, Engineering and Technology, Brooklyn, NY, June 2007.

Lindsay Sanford, Chienshung Lin, and Jeongmin Ahn, "Plastic Mesocombustors", MME Student Day 2007, Pullman, WA, April 2007.

Jeongmin Ahn, and Paul D. Ronney, "Effect of Wall Thermal Conductivity and Thickness on the Performance of Heat-Recirculating Reactors", The 5th U.S. National Combustion Meeting, San Diego, CA, March 2007.

Jeongmin Ahn, and Paul D. Ronney, "Effect of Ammonia Treatment on Pt Catalyst Used for Low-Temperature Reaction", The 5th U.S. National Combustion Meeting, San Diego, CA, March 2007.

Younho Kim, Hwanil Huh, Jeongmin Ahn, and Paul D. Ronney, "Effect of Scale and Fuel Type on Heat-Recirculation Combustor Performance", The 5th U.S. National Combustion Meeting, San Diego, CA, March 2007.

Lindsay Sanford, Chienshung Lin, and Jeongmin Ahn, "Plastic Mesocombustors", Academic Showcase 2007, Pullman, WA, March 2007.

Jeongmin Ahn, Paul D. Ronney, Zongping Shao, and Sossina Haile, "A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell", The 6th International Workshop on Micro and Nanotechnology for Power Generation and Energy Conversion Applications (PowerMEMS 2006), Berkeley, CA, November 2006.

Hwayoung Oh, Hwanil Huh, Jeongmin Ahn, and Paul D. Ronney, "Effect of geometry and scale on the Performance of Swiss-roll combustor for micro power generation", The 31st International Symposium on Combustion, Combustion Institute, Heidelberg, Germany, August 2006.

Jeongmin Ahn, and Paul D. Ronney, "Effect of Wall Thermal Conductivity and Thickness on the Performance of Heat-Recirculating Reactors", The Western States Section of the Combustion Institute (WSSCI), Stanford, CA, October 2005.

Jeongmin Ahn, Paul D. Ronney, Zongping Shao, and Sossina M. Haile, "A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell", The 4th Joint meeting of the U.S. Sections of the Combustion Institute, Philadelphia, PA, March 2005.

Jeongmin Ahn, and Paul D. Ronney, "Plastic Mesocombustors", The 4th Joint meeting of the U.S. Sections of the Combustion Institute, Philadelphia, PA, March 2005.

Jeongmin Ahn, Craig Eastwood, Lars Sitzki and Paul D. Ronney, "Gas-Phase and Catalytic Combustion in Heat-Recirculating Burners", The 30th International Symposium on Combustion, Combustion Institute, Chicago, IL, July 2004, published in *Proceedings of the Combustion Institute*, Vol. 30, pp. 2463-2472 (2005).

Jeongmin Ahn, Craig Eastwood, Paul D. Ronney, Zongping Shao, and Sossina M. Haile, "A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell", The 30th International Symposium on Combustion, Combustion Institute, Chicago, IL, July 2004.

Jeongmin Ahn, Craig Eastwood, Paul D. Ronney, Zongping Shao, and Sossina M. Haile, "A Thermally Self-Sustaining Miniature Solid Oxide Fuel Cell", The Western States Section of the Combustion Institute (WSSCI), Davis, CA, April 2004.

Sossina M. Haile, Chan Kwak, Jeongmin Ahn, Craig Eastwood, and Paul D. Ronney, "Solid Oxide Fuel Cells for Portable Applications", 2003 Materials Research Society (MRS) Fall Meeting, Boston, MA, December 2003.

Jeongmin Ahn, Craig Eastwood, and Paul D. Ronney, "Extinction Limits of Heat-Recirculating Burners", The Western States Section of the Combustion Institute (WSSCI), Los Angeles, CA, October 2003.

Francisco Ochoa, Jeongmin Ahn, Craig Eastwood and Paul D. Ronney, "Thermal Transpiration-Based Meso / Microscale Combined Propulsion and Power Generation Devices", The AFRL Microfluidics Workshop, Los Angeles, CA, May 2003.

Jeongmin Ahn, James Kuo, Craig Eastwood and Paul D. Ronney, "Catalytic and Non-Catalytic Combustion in Heat-Recirculating Burners", The AFRL Microfluidics Workshop, Los Angeles, CA, May 2003.

Jeongmin Ahn, Craig Eastwood, and Paul D. Ronney, "Microscale Combustion and Electrical Power Generation", The 13th Annual Southwestern Regional Technology Conference and Job Fair, Cerritos, CA, March 2003.

Jeongmin Ahn, Craig Eastwood, Kevin Borer, Lars Sitzki and Paul D. Ronney, "Catalytic and Non-Catalytic Combustion in Heat-Recirculating Burners", The 3rd Joint meeting of the U.S. Sections of the Combustion Institute, Chicago, IL, March 2003.

Kaoru Maruta, Koichi Takeda, Jeongmin Ahn, Kevin Borer, Lars Sitzki and Paul D. Ronney, Olaf Deutschmann, "Extinction Limits of Catalytic Combustion in Microchannels", The 29th International Symposium on Combustion, Combustion Institute, Sapporo, Japan, July 2002, published in *Proceedings of the Combustion Institute*, Vol. 29, pp. 957-963 (2002).

Kaoru Maruta, Koichi Takeda, Jeongmin Ahn, Kevin Borer, Lars Sitzki and Paul D. Ronney, Olaf Deutschmann, "Extinction Limits of Catalytic Combustion in Microchannels", Mini-Symposium MS10-Numerical Modeling of Microscale Combustion, Italy, May 2002.

Jeongmin Ahn, Kevin Borer, Lars Sitzki and Paul D. Ronney, "Combustion and Power Generation in Microscale Heat-Recirculating Burners", The Western States Section of the Combustion Institute (WSSCI), San Diego, CA, March 2002.

## **MEDIA/NEWSLETTERS**

### **Media**

TV coverage: KBS, MBC, SBS, YTN, Arirang TV (June 9<sup>th</sup>, 2005)

Newspapers: Chosun Ilbo, Joong-Ang Ilbo, Dong-A Ilbo, Maeil Business Newspaper, The Korean Economic Daily, Han-Kook Ilbo, Kyong-Hyang Shinmun, Han-Kyoreh Shinmun, Kook-Min Ilbo, Segye Ilbo, Munhwa Ilbo, Seoul Ilbo, Daehan Ilbo, Busan Ilbo, Yeong-Nam Ilbo, The Energy Economic News, etc. (June 9<sup>th</sup>, 2005)

- The June 9<sup>th</sup>, 2005 publication in *Nature* of research on miniaturized portable fuel cells attracted worldwide attention. And in Korea, much of the attention focused on the work of Jeongmin Ahn.

### **Newsletters**

“FuelCells”, Innovation CEA (2007).

“Advanced Energy”, MME News Catalyst for Innovation (2007).

“Swiss Roll could power cell phones, similar devices for hundreds of hours”, WSU University Spotlight (2007).

“WSU Researchers Take Swiss Roll Innovation to National Competition”, WSU News Service (2007).

“Propane power creates longer-use battery”, Daily Trojan (2005).

“USC/Caltech/Northwestern Fuel Cell Research Gains Worldwide Attention”, USC Viterbi School of Engineering News (2005).

## **COURSES TAUGHT**

ME 303: Fluid Mechanics

ME 404: Heat Transfer

ME 419: Air Conditioning

ME 515: Advanced Heat Transfer

ME 598: Seminar

## **UNIVERSITY SERVICE**

WSU – Cougar Quest (Academic Summer Camp Grades 7 – 12): July 2008

- Faculty instructor: Clean Green Machines Workshops (Build and test model solar cars, wind powered cars, and fuel cell powered cars)

WSU – Graduate and Professional Student Association: February 2008

- Faculty judge: Wiley Research Exposition

WSU – MME Symposia: (January 2008 – May 2008)

- Coordinator: Symposia series inviting both on campus and outside speakers to present current research activities to the faculty and students

WSU – Student Clubs and Advisory Committee: (August 2007 – present)

- Faculty Advisor: The American Society of Mechanical Engineers (ASME)

WSU – MME Faculty Search Committee: (August 2007 – present)

WSU – Office of Scholarship Services: 2007 –

- Review student applications for the Regents Scholars program and rank them

WSU – MME Undergraduate Studies Committee: (August 2006 – present)

- Work on curriculum updates and prerequisites
- Select outstanding students for awards and scholarships

WSU – School of Mechanical and Materials Engineering: (August 2006 – present)

- Faculty Advisor: Freshmen – Sophomore ME majors at WSU

WSU – Intensive American Language Center: (August 2006 – present)

- Department representative at the evaluation of International Teaching Assistants (ITA) exam

## **PROFESSIONAL SERVICES**

Organizer, Combustion, Power Generation, and Propulsion in Microscale Devices, ASME IMECE 2008

Chair, Combustion, Power Generation, and Propulsion in Microscale Devices, ASME IMECE 2008

Chair, IC Engines, WSSCI Spring 2008 Meeting

Chair, Heterogeneous Combustion, WSSCI Fall 2007 Meeting

Chair, Fire, The 5<sup>th</sup> U.S. Combustion Meeting

Editorial Board, International Review of Mechanical Engineering

Editorial Advisory Board, Scientific Journals International

International Editorial Advisory Board, Journal of Mechanical Science and Technology

## **REVIEWERSHIP**

Combustion and Flame

Combustion Science and Technology

Power Sources

Electrochimica Acta

Physics and Chemistry of Solids

Propulsion and Power

International Review of Mechanical Engineering  
Mechanical Science and Technology  
Engineering, Computing and Architecture

## **HONORARY SOCIETIES**

Pi Tau Sigma (Mechanical Engineering)  
Alpha Pi Mu (Industrial Engineering)

## **AFFILIATIONS**

ASME – The American Society of Mechanical Engineers  
AIAA – American Institute of Aeronautics and Astronautics  
The Combustion Institute  
AIChE – American Institute of Chemical Engineers  
SAE – Society of Automotive Engineers  
SIAM – Society for Industrial and Applied Mathematics  
KSME – The Korean Society of Mechanical Engineers  
KSEA – Korean-American Scientists & Engineers Association