

Dr. Fanghei Tsau



A. Education

Ph.D. Aerospace Engineering, Georgia Institute of Technology, Atlanta, GA, USA, 1988
Major: Combustion & Propulsion, Thermofluids Tech.

MS Aerospace Engineering, Georgia Institute of Technology, Atlanta, GA, USA, 1986

BS Aeronautical Engineering, National Cheng-Kung University, Taiwan, R.O.C., 1982

Advanced Management Program, Harvard Business School, Harvard University, 2008

B. Professional Appointments & Experience

2007-present Division Director/Senior Researcher, New Energy Technology Division, Energy and Environment Research Laboratories, Industrial Technology Research Institute, Taiwan, R.O.C.
Project Leader, Commercialization and Key Technology Development of PEM Fuel Cell

2004–2007 Director/Senior Researcher, Innovative Energy Technology Division, Energy & Resources Laboratories, Industrial Technology Research Institute, Taiwan, R.O.C.
Co-Project Leader, System Development of Proton Exchange Membrane Fuel Cell

2002-2004 Deputy Director/Senior Researcher, Innovative Energy Technology Division, Energy & Resources Laboratories, Industrial Technology Research Institute, Taiwan, R.O.C

1991 – 2002 Project Leader/Senior Researcher/Manager, Thermofluids Technology Division, Energy & Resources Laboratories Industrial Technology Research Institute, Taiwan, R.O.C

1988 - 1991 Assistant Specialist, College of Engineering, University of California at Irvine, USA

2005 – present	<i>Member</i> , National Standards Committee (Electro-mechanical Engineering), Bureau of Standards, Metrology and Inspection
2002- present	<i>Head</i> , Regulations & Standards Working Group, Taiwan Fuel Cells Partnership
2002-2005	<i>Chair</i> , Expert Group on Energy Efficiency & Conservation, APEC Energy Working Group
2002-2004	Technical Editorial Board, <i>Institute of Environmental Science & Engineering Journal</i> (USA)
2001-2003	<i>Technical Assessor & Consultant</i> , the Chinese National Laboratory Accreditation for the development of national testing standards for fire dampers and smoke management fans

C. Selected Publication (2007-2009)

- 1. F. Tsau and *et al.* " Effects of Gas Diffusion Layer Porosity on the Location of the Gas-Liquid Interface in a PEM Fuel Cell", Fuel Cell Seminar, Palm Spring, CA, November 2009**
- 2. F. Tsau and *et al.* " Regeneration of Spent-NaBH₄ Using a Combined Process of Azeotropic Distillation and Schlesinger Method", American Institute of Chemistry Engineers Symposium Series, November 2009**
- 3. F. Tsau and *et al.* " Study on Solid-state NaBH₄/Co-based Catalyst Composite for Hydrogen Production", American Institute of Chemistry Engineers Symposium Series, November 2009**
- 4. F. Tsau and *et al.* " Electrochemical Behaviors of Type 316L Stainless Steel by Different Surface Treatments", Electrochemical Society Meeting (ECS), October 2009**
- 5. F. Tsau and *et al.* " Preparation of Magnetic Cobalt-based Catalyst for Hydrogen Generation from Alkaline NaBH₄ Solution", Applied Catalysis B-Environmental, September 2009**
- 6. F. Tsau and *et al.* " Preparation of NaBH₄ from Spent-NaBH₄ through Planetary Ball-milling at Room Temperature", International Conference on Materials for Advanced Technologies (ICMAT), Singapore, June 2009**
- 7. F. Tsau and *et al.* " Thermal-mechanical Properties of Carbon Nanotubes: Molecular Dynamics Simulation", J. Micro/Nanolith. MEMS. MOEMS 8(2), April-June 2009**
- 8. F. Tsau and *et al.* " 1 kW PEM Fuel Cell Power System - Research of System Operating Parameter and Long-time Test", Asian Hydrogen Energy Conference, April 2009**
- 9. F. Tsau and *et al.* " Hydrogen Generation from Hydrolysis of Sodium Borohydride Using Ni-Ru Nanocomposite as Catalysts", Intl. J. of Hydrogen**

Energy, March 2009

10. F. Tsau and *et al.* "Effect of System Parameters on the Production of Hydrogen in Adsorption-enhanced Steam-methane Reforming Reaction", World Hydrogen Energy Conference, June 2008
11. F. Tsau and *et al.* "Highly Improved Hydrogen Absorption Kinetics of Magnesium-based Nanocomposites Using Carbon Nanotubes", NHA Annual Hydrogen Conference 2008, Sacramento, CA, March 2008
12. F. Tsau and *et al.* "Simple and fast fabrication of polymer template-Ru composite as a catalyst for hydrogen generation from alkaline NaBH₄ solution", Journal of Power Sources 177(2008), pp. 485-492
13. F. Tsau and *et al.* "The Development of a Small PEMFC Combined Heat and Power System", Journal of Power Sources 176 (2008), pp. 499-514
14. F. Tsau and *et al.* "Influence of Thermal Loading on the Thermal Conductivity of Single-wall Carbon Nanotube", ASME Micro/Nanoscale Heat Transfer International Conference, Tainan, Taiwan, January 2008
15. F. Tsau and *et al.* "Spark Plasma Sintering of PbTe Thermoelectric Bulk Materials with Small Grains", ASME Micro/Nanoscale Heat Transfer International Conference, Tainan, Taiwan, January 2008
16. F. Tsau and *et al.* "ITRI 5 kW PEMFC Power System-Analysis of System Thermal and Electric Energy Balance", ASME International Fuel Cell Science, Engineering and Technology Conference, New York, NY, June 2007
17. F. Tsau and *et al.* "An Overview of PEMFC And H₂ Infrastructure Technology Research & Development at ITRI", International Conferences on Engineering, Applied Sciences, and Technology, Bangkok, Thailand, November 2007
18. F. Tsau and *et al.* "Design of a Palladium Membrane Steam Reforming Reactor", AIChE Annual Meeting, Salt Lake City, USA, November 2007

(F. Tsau may not be the first author in all the above publications)

D. Patents and Honors

- 11 domestic and international patents in low pressure turbo-machinery, PEMFC and hydrogen energy technology with several more patents pending
- 2 domestic copy rights in software

1. 2009 Bronze Award (Team) for Technology Achievement, Industrial Technology Research Institute

2. 2005 Silver Award (Team) for Technology Achievement, Industrial Technology Research Institute

- 3. 2004 Technical Paper Award, Industrial Technology Research Institute**
- 4. 2002 Bronze Award (Team) for Technical Promotion & Service, Industrial Technology Research Institute**
- 5. 1999 Silver Award (Team) for Technical Achievement, Industrial Technology Research Institute**
- 6. 1998 Outstanding Young Engineer, Chinese Society of Mechanical Engineers**
- 7. Listed in Who's Who in the World / Who's Who in Science and Engineering**

E. Contact Info

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