

## Son H. Ho, Ph.D.

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(407) 823-6072

### EDUCATION

- 12/2007      **Ph.D. Mechanical Engineering**  
University of South Florida, Tampa, Florida.  
GPA: 3.94/4.00
- 12/2004      **M.S. Mechanical Engineering**  
University of South Florida, Tampa, Florida.  
GPA: 4.00/4.00
- 09/1995      **B.S. Mechanical Engineering**  
Graduated with honors (Silver Medal).  
HCMC University of Technology, Ho Chi Minh City, Vietnam.

### AREA OF EXPERTISE

Numerical modeling and simulation of thermal systems:

- Computational fluid dynamics and heat transfer using commercial or in-house developed CFD/FEA codes.
- Complex geometry mesh generation, especially 3-D all-hexahedral element meshing.
- Thermodynamics analysis of steady/unsteady systems using Matlab/Simulink.

### COMPUTING PROFICIENCY

- **CFD/FEA:** FIDAP (4 years), COMSOL (1 year).
- **Mesh generation:** GAMBIT (4 years).
- **Scientific computing:** MATLAB/SIMULINK (5 years), MAPLE (10 years).
- **Programming languages:** C (6 years), FORTRAN, PASCAL.
- **CAD:** AUTOCAD (4 years).
- **Microsoft Office applications:** Word, Excel, PowerPoint, Visio.
- **Web developing:** HTML, PHP.

### EMPLOYMENT

- 02/2009 – Present      **Research Manager**  
**University of Central Florida, Orlando, FL 32816**  
*Center for Advanced Turbines and Energy Research (CATER)*
- Coordinate project activities; distribute workload. Train graduate students on CFD modeling and simulation. Guide doctoral students to fulfill overall responsibilities/project goals.
- 05/2003 – 01/2009      **Research Assistant**  
**University of South Florida, Tampa, FL 33620**
- Conduct research on numerical modeling and simulation for analysis of fluid flow and heat and mass transfer in engineering

systems using both CFD and dynamic system modeling approaches in various projects, in particular:

- Modeling and design a portable blood cooling system with the use of evaporation/phase-change processes (sponsored by Donovan Industries).
- Modeling and design of MEMS micropump of low flow rate (sponsored by Children's Hospital of LA)
- Modeling and simulation of transport phenomena in zero boil-off cryogenic storage systems for liquid hydrogen (sponsored by NASA).
- Modeling and simulation of transport phenomena and analysis of human thermal comfort and contaminant removal in HVAC indoor spaces, such as hospital operating room, office, residential room, refrigerated warehouses...

03/2006 – Present

**Independent Contractor**

***Client: Meckler Forensic Group, St. Petersburg, FL 33701***

- Work as a design engineer in analyzing/computing/drafting involving many aspects of consulting engineering services for several forensic cases (confidential).

04/2005 – 12/2005

**Independent Contractor**

***Client: Roberts Aviation Corporation, Land O' Lakes, FL 34639***

- Work as a mechanical engineer in designing and building a mechatronic system with microcontroller embedded control circuit (confidential).

04/2002 – 12/2002

**Machine Operator, Molex Inc., Pinellas Park, FL 33781**

03/2002 – 04/2002

**Assembler, Wood You, Clearwater, FL 34624**

**Packager, St. Petersburg Times, FL 33713**

09/1995 – 06/2001

**R&D Mechanical Engineer**

***Laboratory of Applied Mechanics, University of Technology, HCM city (Saigon), Vietnam***

- Engineer in charge of the mechanical team in the R&D group collaborating with the electrical/electronic team in developing computer-based machinery and engineering systems. Balancing machines and CNC controllers designed and built by the group are successful products that have been widely purchased by many industrial businesses in Vietnam.
- Lead programmer who developed core operating programs (in C language) with effective interpolation/analyzing algorithms, user-friendly interfaces, and many utilities for CNC controllers, balancing machines, and data acquisition/analyzing systems.
- Senior investigator in experimental and theoretical studies on vibration analysis, predictive maintenance, stress analysis, and some related fields.

## **PUBLICATIONS**

### ***Journal Publications***

1. **Ho, S. H.**, Rosario, L., and Rahman, M. M., “Three-dimensional analysis for hospital operating room thermal comfort and contaminant removal,” *Appl. Therm. Eng.* **29** (10) (2009), pp. 2080-2092.
2. **Ho, S. H.**, Rosario, L., and Rahman, M. M., “Thermal comfort enhancement by using a ceiling fan,” *Appl. Therm. Eng.* **29** (8-9) (2009), pp. 1648-1656.
3. **Ho, S. H.** and Rahman, M. M., “Nozzle injection displacement mixing in a zero boil-off hydrogen storage tank,” *Int. J. Hydrogen Energy* **33** (2) (2008), pp. 878-888.
4. **Ho, S. H.** and Rahman, M. M., “Three-dimensional analysis for liquid hydrogen in a cryogenic storage tank with heat pipe-pump system,” *Cryogenics* **48** (1-2) (2008), pp. 31-41.
5. Kaw, A. K. and **Ho, S. H.**, “On introducing approximate solution methods in theory of elasticity,” *Comput. Appl. Eng. Educ.* **14** (2) (2006), pp. 120-134.

### ***Publications in Conference Proceedings***

1. Meckler, M. and **Ho, S. H.**, “Integrate CHP to improve overall corn ethanol economics,” *Proceedings of 2008 ASME International Mechanical Engineering Congress and Exposition*, IMECE2008-66295, Nov. 2008, Boston, Massachusetts.
2. **Ho, S. H.** and Rahman, M. M., “Transient thermal analysis of cryogenic liquid hydrogen tank with active circulation,” *Proceedings of Energy Sustainability 2007*, ES2007-36195, Jun. 2007, Long Beach, California.
3. **Ho, S. H.**, Rosario, L. and Rahman, M. M., “Numerical analysis of thermal behavior in a refrigerated warehouse,” *Proceedings of 2006 ASME International Mechanical Engineering Congress and Exposition*, IMECE2006-15415, Nov. 2006, Chicago, Illinois.
4. **Ho, S. H.** and Rahman, M. M., “Zero boil-off cryogenic liquid hydrogen storage tank with axial cold-spray system,” *Proceedings of 2006 ASME International Mechanical Engineering Congress and Exposition*, IMECE2006-15341, Nov. 2006, Chicago, Illinois.
5. Rahman, M. M., **Ho, S. H.**, and Rosario, L., “Review and some research results on hydrogen liquefaction and storage,” *Proceedings of the International Conference on Mechanical Engineering 2005*, ICME2005, Dec. 2005, Dhaka, Bangladesh.
6. **Ho, S. H.**, Rosario L., and Rahman, M. M., “Effect of using ceiling fan on human thermal comfort in air-conditioned space,” *Proceedings of AIAA 3rd International Energy Conversion Engineering Conference and Exhibit (IECEC)*, AIAA-2005-5734, Aug. 2005, San Francisco, California.
7. **Ho, S. H.** and Rahman, M. M., “Three-dimensional analysis of liquid hydrogen cryogenic storage tank,” *Proceedings of AIAA 3rd International Energy Conversion Engineering Conference and Exhibit (IECEC)*, AIAA-2005-5712, Aug. 2005, San Francisco, California.

8. **Ho, S.H.**, Rosario, L., and Rahman, M.M., “Analysis of thermal comfort and contaminant removal in an office room with underfloor air distribution system,” *Proceedings of 2005 ASME Summer Heat Transfer Conference*, HT2005-72437, Jul. 2005, San Francisco, California.
9. Rahman, M. M. and **Ho, S. H.**, “Zero boil-off cryogenic storage of hydrogen,” *NHA 2005 Proceedings of Hydrogen Conference*, Mar. 2005, Washington, D.C.
10. **Ho, S. H.**, Rosario, L., and Rahman, M. M., “Predictions of relative humidity and temperature in an operating room,” *Proceedings of 2004 ASME International Mechanical Engineering Congress and Exposition*, IMECE2004-61372, Nov. 2004, Anaheim, California.