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Professional Resume of

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## **EDUCATIONAL RECORD**

- Ph.D. Mechanical Engineering, University of Illinois in Urbana-Champaign, September 1984
- M.S. Mechanical Engineering, University of Illinois in Urbana-Champaign, May 1981
- B.S. Mechanical Engineering, Sharif University of Technology, Tehran, Iran, May 1978

## **PROFESSIONAL EXPERTISE**

Experimental and Theoretical Studies in the Following Areas:

- Enhancement of Heat Transfer and Mass Transport with Electrohydrodynamics in Macro-, Micro-, and Nano- Scales (Single-Phase and Two-Phase) in the presence and absence of gravity
- Heat and Mass Transfer in Porous Media
- Augmentation of Heat and Mass Transfer with Innovative Impinging Jets (with and without chemical reaction)

## **PROFESSIONAL EXPERIENCE**

### **Illinois Institute of Technology**

January 2002 – present, Professor and Chair

Mechanical, Materials and Aerospace Engineering Department

Illinois Institute of Technology, Chicago, Illinois

Teaching:

- Liquid-Vapor Phase-Change Phenomena, graduate level course (introduced this course) (MMAE 528)
- Fundamentals of Heat Transfer, graduate level course (MMAE 525)
- Ph.D. and M.S. Research, graduate level course (MMAE 591)
- Heat and Mass Transfer, undergraduate level course (MMAE 322)
- Design of Thermal Systems, undergraduate level course (MMAE 433)

Research:

- Experimental, Theoretical, and Numerical Studies in Enhancement of Heat Transfer and Mass Transport in Macro, Micro, and Nano Scales in Single-Phase and Two-Phase Flows with Electrohydrodynamics in the Presence and Absence of Gravity - Financial Support from NSF, NASA Headquarters, NASA Goddard Space Flight Center, ASHRAE, and Wieland-Werke AG Company (Germany)
- Oscillating Flow Radiant Emitters - Financial Support from Gas Technology Institute
- Contaminant Dispersion in Atmosphere - Financial Support from Office of Naval Research

### **University of Poitiers, Poitiers, France**

June 2009 – July 2009, French Ministry of Education Fellowship

June 2001 – July 2001, French Ministry of Education Fellowship

### **Texas A&M University**

September 1998 – December 2001, Professor (Tenured) and Paul John Faculty Fellow

September 1992 - August 1998, Associate Professor (Tenured) and TEES Senior Fellow

August 1987 - August 1992, Assistant Professor (Tenure-Track)

Department of Mechanical Engineering, Texas A&M University, College Station, Texas

#### Teaching:

- Two-Phase Flow and Heat Transfer, graduate level course (MEEN 624)
- Intermediate Heat Transfer, graduate level course (MEEN 630)
- Special Problems, graduate level course (MEEN 685)
- Ph.D. and M.S. Research, graduate level course (MEEN 691)
- Fluid Mechanics, undergraduate level course (MEEN 344)
- Seminar, undergraduate level course (MEEN 381)
- Engineering Laboratory, undergraduate level course (MEEN 404)
- Design Analysis, undergraduate level course (MEEN 445)
- Design of Thermal Systems, undergraduate level course (developed and introduced this course) (MEEN 456)
- Heat Transfer, undergraduate level course (MEEN 461)
- Special Problems, undergraduate level course (MEEN 485)

#### Research:

- Experimental and Theoretical Studies in Enhancement of Heat Transfer and Mass Transport with Electrohydrodynamics in Macro and Micro Scales, Single-phase and Two-phase, in the presence or absence of gravity – Financial Support from NASA Headquarters, NASA Johnson Space Center, NASA Goddard Space Flight Center, NASA Center for Space Power at Texas A&M University, ASHRAE, McDonnell Douglas Space Systems Company, Wieland-Werke AG Company (Germany), and the State of Texas.
- Experimental and Theoretical Studies in Heat and Mass Transfer in Porous Media- Financial Support from the State of Texas, National Science Foundation, Beloit Corporation, E.I. Du Pont De Nemours & Co., Inc., Kimberly Clark Corporation, Texas Instruments, Inc., American Forest and Paper Association, Gas Technology Institute, and the Texas A&M University Drying Research Center.
- Experimental Studies in Augmentation of Heat and Mass Transfer with Innovative Impinging Jets (with and without chemical reaction) - Financial Support from Gas Research Institute, Texas Hazardous Waste Research Center, National Science Foundation, and the Texas A&M University Drying Research Center.
- Experimental and Theoretical Studies in Thermal Modeling of Salt-Gradient Solar Ponds - Financial Support from the State of Texas.

**Japan Ministry of International Trade and Industry, Tsukuba, Japan**

May 1995 – July 1995, Japan Society for the Promotion and Science Fellowship

**NASA Goddard Space Flight Center**

June 1993 – August 1993, NASA-ASEE Summer Faculty Fellowship

**Westvaco Corporation**

September 1984 - August 1987

Research Engineer, Covington Research Center, Westvaco Corp., Covington, Virginia

Projects: Principal Investigator for the following projects:

- Experimental Investigation of Heat and Mass Transfer in Paper Web in Drying Process
- Development and Implementation of Advanced Software Programs for Vibration Analysis of Rotating Machinery
- Energy Recovery from Waste Heat
- Field Study of Mechanical Treatment of Broke Flakes
- Establishing Criteria for Testing Electric Motors
- Organizing Company Wide Vibration Analysis Seminars

**University of Illinois**

September 1979 - June 1984

Research and Teaching Assistant, Department of Mechanical Engineering,  
University of Illinois, Urbana-Champaign, Illinois

Teaching:

- Undergraduate courses in heat transfer and thermodynamics

Research:

- Electrohydrodynamic Heat Exchanger Pump - Partial Support from the National Science Foundation
- A Viscometric Temperature Measurement Technique in Electrohydrodynamic Flows - Partial Support from the Electric Power Research Institute
- Cooling of High Power Transistors - Partial Support from the Harris Corporation
- Effect of Long-Term Low-Level Corona Discharge on Liquid Dielectrics-Partial Support from the Electrical Engineering Department
- Cooling Radiation Shields of an Orbiting Satellite for Missions Lasting Several Years - Partial Support from NASA-Ames

## **Momtaz Wood Corporation**

May 1978- August 1978

Engineer, Momtaz Wood Corporation, Tabriz, Iran

Projects:

- Directing Installation of Heavy Machinery
- Supervision of Chemical Laboratory.

## **POST DOCTORATE, EXCHANGE VISITORS, AND RESEARCH ASSOCIATES SUPERVISED**

- J.W. Mohr, Post Doctorate from Texas A&M University, *Studies in Flame Heating*, September 1996 - January 1997
- L. Ye-Bo, Exchange Visitor from Chinese Academy of Sciences, Institute of Engineering Thermophysics, Beijing, China, *Studies in Drying of Paste Like Materials*, April 1997 - March 1998
- H. Noboa, Research Associate from Ecuador National Polytechnic University, *Transport Phenomena in Drying of Coated Paper*, October 1998 - April 2000
- J. Madadnia, Visiting Faculty Member from the University of Technology-Sydney; Sydney, Australia, *Electrohydrodynamically Enhanced Pool Boiling*, September 1999 - December 1999
- Y. Feng, Research Associate from Texas A&M University, *Studies in Electrohydrodynamics*, July 2002 – August 2004
- M. Daaboul, Research Associate from L'Universite de Poitiers, Poitiers, France, *Studies in Electrohydrodynamics*, November 2010 – December 2010

## **STUDENTS SUPERVISED**

### Ph.D.

- J. Wang, *Experimental Studies of Radiation Transmission in Water and Numerical Simulation of Dynamic Behavior of a Salt-Gradient Solar Pond*, Graduation Date: December 1993
- D.K. Habetz, *Radial Jet Reattachment Combustion*, Graduation Date: December 1993 (Co-Chair with Professor R.H. Page)
- J.W. Mohr, *Studies of Single and Multiple Impinging Radial Jet Reattachment Flames*, Graduation Date: August 1996
- J.E. Bryan, *Fundamental Study of Electrohydrodynamically Enhanced Convective and Nucleate Boiling Heat Transfer*, Graduation Date: December 1998
- M. Wawzyniak, *Fundamental Study of Electrohydrodynamic Induction Pumping of a Stratified Liquid/Vapor Medium*, Graduation Date: December 1999
- M.C. Asensio, *Transport Phenomena During Drying of Deformable, Hygroscopic Porous Media: Fundamentals and Applications*, Graduation Date: May 2000

- V. Narayanan, *An Experimental Flow Field and Heat Transfer Investigation of Submerged Double-Sided Reattachment and Two-Dimensional Impingement Slot Jets*, Graduation Date: December 2001
- J. Wu, *Fundamental Study of Radial Jet Reattachment Flames in Open and Enclosed Environment*, Graduation Date: August 2002
- Y. Feng, *Effects of Electric Field on Internal Convective Two-Phase Flow Heat Transfer and Pressure Drop*, Graduation Date: August 2002
- S. I. Jeong, *Theoretical and Experimental Study of Electrohydrodynamically Induced Dielectric Liquid Flow Through Pure Conduction*, Graduation Date: August 2002
- K. Brand, *Enhancement of External Condensation Heat Transfer with Electrohydrodynamic Induction Pumping: Theoretical and Experimental Study*, Graduation Date: August 2002
- J. Hendrarsakti, *A Study of the Micro Fiber Dispersion using Digital Image Analysis*, Graduation Date: August 2003 (Co-Chair with Dr. K. Kihm)
- S.A.S. Al Dini, *Electrohydrodynamic Induction and Conduction Pumping of Dielectric Liquid Film: Theoretical and Numerical Studies*, Graduation Date: December 2005
- R. Sabbah, *Numerical and Experimental Investigation of Heat Transfer Characteristics of Liquid Flow with Micro-Encapsulated Phase Change Material*, Graduation Date: December 2008
- M. Yazdani, *Electrically Driven Liquid and Liquid Film Flow in Large and Small Scales in the Absence and Presence of Phase Change*, Graduation Date: December 2009
- M. Pearson, *Theoretical, Numerical, and Experimental Study of Micro Heat Pipe Driven by Electric Conduction Forces and Capillary Forces*, Expected Graduation Date: August 2010
- V. Patel, *Electrically Driven Fluid Flows in Nano Scale Channels*, Expected Graduation Date: August 2013
- Currently three additional PhD students are being considered.

#### M.S.

- J.E. Bryan, *An Experimental Study of Ion-Drag Pumping in a Vertical Axisymmetric Configuration*, Graduation Date: August 1990
- D.O. Bell, *Theoretical and Numerical Study of Heat and Mass Transfer in a Paper Sheet During Drying*, Graduation Date: December 1990
- K. Ng, *Thermal Contact Conductance of a Paper Handsheet/Metal Interface*, Graduation Date: December 1990
- B.J. Bohinsky, *Experimental Study of Induction Electrohydrodynamic Pumping in Horizontal Axisymmetric Configuration*, Graduation Date: December 1991
- M.C. Asensio, *Simulation of Conventional Paper Drying System with Incorporation of an Experimental Drum/Paper Thermal Contact Conductance Relationship*, Graduation Date: May 1992
- J.A. Castaneda, *Experimental and Fundamental Studies of Ion-Drag Pumping*, Graduation Date: August 1992

- E.C. Dietz, *Impingement Characteristics of a Combustion Nozzle*, Graduation Date: August 1992 (Co-Chair with Professor R.H. Page)
- B.D. Margo, *Heat Transfer Enhancement Resulting from Induction Electrohydrodynamic Pumping*, Graduation Date: December 1992
- M. Wawzyniak, *Electrohydrodynamically Enhanced Condensation Heat Transfer*, Graduation Date: December 1993
- B.L. Owsenek, *Experimental, Theoretical and Numerical Investigation of Corona Wind Heat Transfer Enhancement*, Graduation Date: December 1993
- E.J. Motte, *Augmentation of Condensation Heat Transfer with Electrohydrodynamics on Vertical Enhanced Tubes*, Graduation Date: December 1994
- M.M. Heatly, *Enhanced Impingement Heat Transfer Using a Self-Oscillating Jet Impingement Nozzle Array*, Graduation Date: August 1995
- V. Narayanan, *Comparison of Heat Transfer Characteristics of Axisymmetric and Two Dimensional Reattachment Jet Nozzles to Conventional Jet Impingement Nozzles*, Graduation Date: May 1997
- S.L.P. Raghupathi, *Enhancement of Pool Boiling Heat Transfer with Electrohydrodynamics and Its Fundamental Study*, Graduation Date: May 1998
- S.A. Alam, *Drying Characteristics of Slot Jet Reattachment Nozzle and Comparison with a Slot Jet Nozzle*, Graduation Date: December 1998
- J.W. Wirtz, *An Experimental Study of Gas-Fired Infrared Drying of Paper*, Graduation Date: August 1999
- A.N. Husain, *Measurement and Analysis of Heating of Paper with Gas-Fired Infrared Burner*, Graduation Date: May 2000
- S. Datta, *Theoretical and Numerical Study of Flow Generation Through Electrohydrodynamic Conduction Phenomenon*, Graduation Date: August 2004
- M. A. W. Siddiqui, *Experimental Study of Stratified Liquid Film Pumping with Electric Conduction Phenomenon* Graduation Date: May 2006
- M. Pearson, *Theoretical and Numerical Study of Bubble Deformation in a Diverging Electric Field*, Graduation Date: May 2006
- M. Yazdani, *Electrically Induced Dielectric Liquid Film Flow Based on Electric Conduction Phenomenon*, Graduation Date: August 2006

#### M.S. (non-thesis)

- A.D. Stevens, *Measurements of Thermal Contact Conductance for a Paper/Metal Interface and Effective Conductivity of Machine Samples* (Technical Report), May 1995
- S. M. Solanki, *Theoretical and Numerical Study of Electrohydrodynamic Conduction Pumping of Dielectric Liquid Film* (Technical Report), May 2006
- R. Arikapudi, *Theoretical and Numerical Study of Micro Heat Pipe Driven by Dielectrophoretic and Capillary Forces* (Technical Report), May 2006
- S. Shafie Fazel, *Enhancement of External Condensation Heat Transfer with EHD Conduction Pumping* (Technical Report), May 2009

### Exchange Students

- B.A. Göbel, German, *Experimental Studies in Electrohydrodynamic Pumping*, August 1990 - February 1991
- L.M. Geppert, German, *Enhancement of Boiling Heat Transfer Through Electrohydrodynamic Effects and Measurement of Heat Transfer in a High Electric Field*, January 1994 - August 1994
- C.A. Geppert, German, *Electrohydrodynamically Enhanced Heat Transfer in Pool Boiling*, January 1994 - August 1994
- K. Freudenreich, German, *Entrainment and Energy Balance for a Radial Jet Reattachment Combustion Nozzle*, January 1995 - May 1995
- V.G. Szymanski, German, *Theoretical and Experimental Analysis of an Electrostriction Pump*, January 1996 - May 1996
- T. Yajima, Japanese, *Integral Analysis of Laminar Film Condensation Utilizing Electrical Force*, January 1996 - May 1996
- A. Dalmau,, Spanish, *Visualization of Bubble Deformation in the Presence of Diverging Electric Field*, August 2005 – March 2006
- G. Cabirol, French, *Design of an Experimental Setup for the Study of an EHD Driven Jet*, June 2008 – September 2008
- C. Becu, French, *Design of an Experimental Setup for the Study of an EHD Driven Jet*, June 2008 – September 2008
- J. Moinier, French, *Design of an Experimental Setup for the Study of an EHD Driven Jet*, June 2009 – September 2009
- A. Neveu, French, *Design of an Experimental Setup for the Study of an EHD Driven Jet*, June 2009 – September 2009
- J. Nobilet, French, *Design of an Experimental Setup for the Study of an EHD Driven Jet*, June 2009 – September 2009

### Senior Honor Thesis

- Lee, K.A., "Design of Optimum Electrodes for EHD Enhanced Condenser," December 1994
- Tijerina, C.C., "Capillary Pressure and Thermal Contact Conductance Measurements for Paper Samples," December 1994
- Barr, A., "Flow Visualization and Heat Transfer Measurements of Jet Impingement Nozzles," August 2000

### **PEER REVIEWED JOURNAL PUBLICATIONS**

1. Yazdani, M. and Seyed-Yagoobi, J., "Heat Transfer Augmentation of Parallel Flows by Means of Electric Conduction Phenomenon in Macro- and Micro-Scales", Accepted for publication, *ASME Journal of Heat Transfer*.

2. Yazdani, M. and Seyed-Yagoobi, J., "An Electrically Driven Impinging Liquid Jet for Direct Cooling of Heated Surfaces", Accepted for publication, *IEEE Transactions on Industry Applications*.
3. Yazdani, M. and Seyed-Yagoobi, J., "Thermal Homogenization in Spherical Reservoir by EHD Conduction Phenomenon", *ASME Journal of Heat Transfer*, Vol. 131, pp. 094502-1 to 4, September 2009.
4. Yazdani, M. and Seyed-Yagoobi, J., "Fluid Circulation within a Spherical Reservoir with EHD Conduction Pumping", *IEEE Transactions on Industry Applications*, Vol. 45, No. 4, pp. 1491-1498, July/August 2009.
5. Yazdani, M. and Seyed-Yagoobi, J., "Electrically Induced Dielectric Liquid Film Flow Based on Electric Conduction Phenomenon", *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol. 16, No. 3, pp. 768 – 777, June 2009.
6. Pearson, M.R. and Seyed-Yagoobi, J., "Advances in Electrohydrodynamic Conduction Pumping", *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol. 16, No. 2, pp. 424-434, April 2009.
7. Siddiqui, M.A.W. and Seyed-Yagoobi, J., "Experimental Study of Pumping of Liquid Film With Conduction Phenomenon", *IEEE Transactions on Industry Applications*, Vol. 45, pp. 3-9, January 2009.
8. Aldini, S. A. and Seyed-Yagoobi, J., "Electrohydrodynamic Induction Pumping of Liquid Film in Vertical Annular Configuration", *IEEE Transactions on Industry Applications*, Vol. 45, pp. 22-29, January 2009.
9. Yazdani, M. and Seyed-Yagoobi, J., "Numerical Investigation of Electrohydrodynamic-Conduction Pumping of Liquid Film in the Presence of Evaporation", *ASME Journal of Heat Transfer*, Vol. 131, pp. 11602-1 to 8, January 2009.
10. Pearson, M. R. and Seyed-Yagoobi, J., "Numerical Study of Bubble Behavior of Dielectric Fluids within Diverging External Electrical Fields", *ASME Journal of Heat Transfer*, Vol. 130, No. 3, pp. 032901-1 to 032901-10, March 2008.
11. Feng, Y. and Seyed-Yagoobi, J., "Electrical Charge Transport and Energy Conversion with Fluid Flow During Electrohydrodynamic Conduction Pumping", *Journal of Physics of Fluids*, Vol. 19, pp. 1-11, May 2007.
12. Feng, Y. and Seyed-Yagoobi, J., "Control of Liquid Flow Distribution Utilizing EHD Conduction Pumping Mechanism", *IEEE Transactions on Industry Applications*, Vol. 42, No. 2, pp. 369-377, March 2006.

13. Feng, Y. and Seyed-Yagoobi, J., "Control of Adiabatic Two-Phase Dielectric Fluid Flow Distribution with EHD Conduction Pumping", *Journal of Electrostatics*, Vol. 64, pp. 621-627, November 2005.
14. Aldini, S. A. and Seyed-Yagoobi, J., "Stability of Electrohydrodynamic Induction Pumping of Liquid Film in vertical Annular Configuration", *IEEE Transactions on Industry Applications*, Vol. 41, No. 6, pp. 1522-1530, November 2005.
15. Seyed-Yagoobi, J., "Electrohydrodynamic Pumping of Dielectric Liquids", *Journal of Electrostatics*, Vol. 63, pp. 861-869, March 2005.
16. Jeong, S.I. and Seyed-Yagoobi, J., "Fluid Circulation in an Enclosure Generated by Electrohydrodynamic Conduction Phenomenon," *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol.11, No.5, pp. 899-910, October 2004.
17. Feng, Y. and Seyed-Yagoobi, J., "Understanding of Electrohydrodynamic Conduction Pumping Phenomenon," *Journal of Physics of Fluids*, Vol.16, No.7, pp. 2432-2441, 2004.
18. Narayanan, V., Seyed-Yagoobi, J., and Page, R.H., "Transient Thermal Structure, Turbulence, and Heat Transfer in a Reattaching Slot Jet Flow," *International Journal of Heat and Mass Transfer*, Vol. 47, pp. 5219-5234, 2004.
19. Narayanan, V., Seyed-Yagoobi, J., and Page, R.H., "An Experimental Study of Fluid Mechanics and Heat Transfer in an Impinging Slot Jet Flow," *International Journal of Heat and Mass Transfer*, Vol. 47, pp. 1827-1845, 2004.
20. Jeong, S.I. and Seyed-Yagoobi, J., "Innovative Electrode Designs for Electrohydrodynamic Conduction Pumping," *IEEE Transactions on Industry Applications*, Vol. 40, No. 3, pp. 900-904, May 2004.
21. Brand, K. and Seyed-Yagoobi, J., "Experimental Study of Electrohydrodynamic Induction Pumping of a Dielectric Micro Liquid Film in External Horizontal Condensation Process," *ASME Journal of Heat Transfer*, Vol. 125, pp. 1096-1105, December 2003.
22. Brand, K. and Seyed-Yagoobi, J. "Pumping of Refrigerant Liquid Film with Electrohydrodynamic Induction Pumping Mechanism – Theoretical and Experimental Study," *ASHRAE International Journal of Heating, Ventilation, Air Conditioning, and Refrigeration Research*, Vol. 9, No. 4, pp. 415-433, October 2003.
23. Noboa, H. and Seyed-Yagoobi, J., "Drying of Uncoated Paper with Gas-Fired Infrared Emitters – Optimum Emitters' Location Within the Paper Machine Drying Section," *Journal of Drying Technology*, Vol. 21, No. 10, pp. 1897-1908, October 2003.

24. Feng, Y. and Seyed-Yagoobi, J., "Mechanism of Annular Two-Phase Flow Heat Transfer Enhancement and Pressure Drop Penalty in the Presence of Radial Electric Field-Turbulence Analysis," *ASME Journal of Heat Transfer*, Vol. 125, pp. 478-486, June 2003.
25. Narayanan, V., Page, R.H., and Seyed-Yagoobi, J., "Visualization of Air Flow Using Infrared Thermography," *Journal of Experiments in Fluids*, Vol. 34, pp. 275-284, 2003.
26. Jeong, S.I., Seyed-Yagoobi, J., and Atten, P., "Theoretical/Numerical Study of Electrohydrodynamic Pumping Through Pure Conduction Phenomenon," *IEEE Transactions on Industry Applications*, Vol. 39, No.2, pp. 355-361, March 2003.
27. Atten, P. and Seyed-Yagoobi, J., "Electrohydrodynamically Induced Dielectric Liquid Flow Through Pure Conduction in Point/Plane Geometry," *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol. 10, No.1, pp. 27-36, February 2003 (invited paper).
28. Bryan, J.E. and Seyed-Yagoobi, J., "Electrohydrodynamically Enhanced Convective Boiling of Alternative Refrigerants: Fundamental Understanding and Applicability," *ASHRAE International Journal of Heating, Ventilation, Air Conditioning, and Refrigeration Research*, Vol. 8, No. 4, pp. 337-355, October 2002.
29. Jeong, S.I. and Seyed-Yagoobi, J., "Experimental Study of Electrohydrodynamic Pumping Through Conduction Phenomenon," *Journal of Electrostatics*, Vol. 56, pp. 123-133, 2002.
30. Brand, K. and Seyed-Yagoobi, J., "Effect of Electrode Position on Electrohydrodynamic Induction Pumping of a Stratified Liquid/Vapor Medium," *IEEE Transactions on Industry Applications*, Vol. 38, No. 2, pp. 389-400, March 2002.
31. Feng, Y. and Seyed-Yagoobi, J., "Flow Regime and Heat Transfer of Horizontal Two-Phase Flow in the Presence and Absence of Electric Field," *ASME Journal of Heat Transfer*, Vol. 124, pp. 102-110, February 2002.
32. Seyed-Yagoobi, J. and Husain, A.N., "Experimental and Theoretical Study of Heating/Drying of a Moist Paper Sheet with a Gas-Fired Infrared Emitter," *ASME Journal of Heat Transfer*, Vol. 123, pp. 711-718, August 2001.
33. Wawzyniak, M. and Seyed-Yagoobi, J., "Electrohydrodynamic Induction Pumping of a Stratified Liquid/Vapor Medium in the Presence of Volumetric and Interface Electric Charges," *IEEE Transactions on Industry Applications*, Vol. 37, No. 4, pp. 950-958, July 2001.

34. Noboa, H.L. and Seyed-Yagoobi, J., "Thermal Contact Conductance of a Coated Paper/Metal Interface," *Journal of Drying Technology*, Vol. 19, No. 6, pp. 1125-1135, June 2001.
35. Seyed-Yagoobi, J., and Wirtz, J., "An Experimental Study of Gas-Fired Infrared Drying of Paper," *Journal of Drying Technology*, Vol. 19, No. 6, pp. 1099-1112, June 2001.
36. Wu, J., Seyed-Yagoobi, J., and Page, R.H., "Heat Transfer and Combustion Characteristics of an Array of Radial Jet Reattachment Flames," *Journal of Combustion and Flame*, Vol. 125, pp. 955-964, May 2001.
37. Bryan, J.E. and Seyed-Yagoobi, J., "Influence of Flow Regime and Heat Flux on Electrohydrodynamically Enhanced Convective Boiling," *ASME Journal of Heat Transfer*, Vol. 123, pp. 355-367, April 2001.
38. Seyed-Yagoobi, J., Sikirica, S.J. and Counts, K.M., "Heating/Drying of Paper Sheet with Gas-Fired Infrared Emitters-Pilot Machine Trials," *Journal of Drying Technology*, Vol. 19, Nos. 3&4, pp. 639-651, March 2001.
39. Bryan, J.E. and Seyed-Yagoobi, J., "Electrohydrodynamically Enhanced Convective Boiling: Relationship between Electrohydrodynamic Pressure and Momentum Flux Rate," *ASME Journal of Heat Transfer*, Vol. 122, pp. 266-277, May 2000.
40. Seyed-Yagoobi, J., "Heat Transfer and Combustion Characteristics of Radial Jet Reattachment Combustion Nozzle," *Bulletin of the Polish Academy of Sciences-Technical Sciences*, Vol. 48, No. 3, pp. 405-414, 2000 (invited paper).
41. Wawzyniak, M., Seyed-Yagoobi, J., and Morrison, G.L., "An Experimental Study of Electrohydrodynamic Induction Pumping of a Stratified Liquid/Vapor Medium," *ASME Journal of Heat Transfer*, Vol. 122, pp. 200-203, February 2000.
42. Wawzyniak, M. and Seyed-Yagoobi, J., "Stability of Electrohydrodynamic Induction Pumping of a Stratified Liquid/Vapor Medium in the Presence of an External Load," *IEEE Transactions on Industry Applications*, Vol. 35, No. 5, pp. 1211-1217, September 1999.
43. Li, Y.B., Seyed-Yagoobi, J., Moreira, R.G., and Yamsaengsung, R., "Superheated Steam Impingement Drying of Tortilla Chips," *Journal of Drying Technology*, Vol. 17, No. 1 & 2, pp. 191-213, February 1999.
44. Wawzyniak, M. and Seyed-Yagoobi, J., "An Analytical Study of Electrohydrodynamic Pumping of a Stratified Liquid/Vapor Medium," *IEEE Transactions on Industry Applications*, Vol. 35, No. 1, pp. 231-239, February 1999.

45. Alam, S.A., Seyed-Yagoobi, J., Narayanan, V., and Page, R.H., "Drying Characteristics of Slot Jet Reattachment Nozzle," *Journal of Drying Technology*, Vol. 16, No. 8, pp. 1585-1607, August 1998.
46. Narayanan, V., Seyed-Yagoobi, J., and Page, R.H., "Heat Transfer Characteristics of Slot Jet Reattachment Nozzle," *ASME Journal of Heat Transfer*, Vol. 120, pp. 348-356, May 1998.
47. Seyed-Yagoobi, J., Narayanan, V., and Page, R.H., "Comparison of Heat Transfer Characteristics of Radial Jet Reattachment Nozzle to In-Line Impinging Jet Nozzle," *ASME Journal of Heat Transfer*, Vol. 120, pp. 335-341, May 1998.
48. Mohr, J.W., Seyed-Yagoobi, J., and Page, R.H., "Heat Transfer from a Pair of Radial Jet Reattachment Flames," *ASME Journal of Heat Transfer*, Vol. 119, pp. 633-635, August 1997.
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#### **NON-REVIEWED CONFERENCE PRESENTATIONS**

1. Jeong, S. I. and Seyed-Yagoobi, J., "Augmentation of Performance of a Monogroove Heat Pipe with Electrohydrodynamic Conduction Pumping," *NASA's 6<sup>th</sup> Microgravity Fluid Physics and Transport Phenomena Conference*, Cleveland, Ohio, August 2002.
2. Seyed-Yagoobi, J., "Electrohydrodynamic Pumping through Conduction Phenomenon," *NASA's 5<sup>th</sup> Microgravity Fluid Physics and Transport Phenomena Conference*, Cleveland, Ohio, August 2000.
3. Seyed-Yagoobi, J., "Electrohydrodynamic Induction Pumping of a Stratified Liquid/Vapor Medium," *Two-Phase Technology*, College Park, Maryland, May 1999.
4. Seyed-Yagoobi, J., "Flame Jet Impingement Heat Transfer from an Array of Radial Jet Reattachment Flames," *Advances in Drying Symposium*, Dallas, Texas, April 1998.
5. Seyed-Yagoobi, J., "Enhancement of Heat and Mass with Innovative Impinging Jets," *Advances in Drying Symposium*, Dallas, Texas, April 1998.

6. Seyed-Yagoobi, J., "Infrared Drying of Paper," *Advances in Drying Symposium*, Dallas, Texas, April 1998.
7. Seyed-Yagoobi, J., "Enhancement of Heat Transfer in Single-Phase and Two-Phase Flows with Electrohydrodynamics," Panel Discussion: Unsolved Heat Transfer Problems in Oil, Gas, and Petroleum Industries, *8<sup>th</sup> Annual International Energy Week Conference Exhibition*, Houston, Texas, January 1997.
8. Wawzyniak, M., Motte, E.J., and Seyed-Yagoobi, J., "Electrohydrodynamical Augmentation of Condensation Heat Transfer on Enhanced Tubes," *Open Forum, ASME/JSME Thermal Engineering Joint Conference*, Maui, Hawaii, March 1995.
9. Seyed-Yagoobi, J., Mohr, J.W., Page, R.H., and Habetz, D.K., "A Comparison of the Stability and Appearance of Radial Jet Reattachment and Co-Axial Flowing Flame Impingement Nozzles," *Open Forum on Fire and Combustion, ASME Winter Annual Meeting*, Chicago, Illinois, November 1994.
10. Seyed-Yagoobi, J. and Miller, K., "Performance Enhancement of Heat and Mass Transfer Devices with Electrohydrodynamics," *Dual Technology Conference*, NASA Johnson Space Center, Houston, Texas, February 1994.
11. Seyed-Yagoobi, J. and Margo, B.D., "Induction Electrohydrodynamic Pumping in a Tilted Axisymmetric Configuration," *American Physical Society Annual Meeting of the Division of Fluid Dynamics*, Scottsdale, Arizona, November 1991.
12. Habetz, D., Seyed-Yagoobi, J., and Page, R.H., "Fundamental Engineering Research on Cloth Drying," *Open Forum, ASME Heat Transfer Conference*, Minneapolis, Minnesota, July 1991.
13. Seyed-Yagoobi, J., "Electrohydrodynamic Pumping," *Electrostatics Conference*, Cambridge, Massachusetts, June 1991.
14. Seyed-Yagoobi, J., "Electrohydrodynamic Heat Exchanger Pump," *Proceedings of Eurotherm Seminar No. 9*, Bochum, West Germany, July 1989.

## PATENTS

- Seyed-Yagoobi, J., "Viscometric Thermometer," United States Patent, Number 4,790,668, December 1988, property of Westvaco Corporation.
- Seyed-Yagoobi, J. and Bryan, J.E., "Heat Transport Enhancement of Heat Pipe with Electrohydrodynamic Pumping," provisional patent issued in August 1997 (final patent was not filed).

- Seyed-Yagoobi, J. and Page, R.H., "Method of Using Radial Jet Reattachment Combustion Nozzles for Flame Heating of Surfaces," United States Patent, Number 6,007,328, December 1999, Licensed to ABB Industrial Drying, LaSalle, Canada.
- Seyed-Yagoobi, J. and Page, R.H., "Slot Jet Reattachment Nozzle and Method of Operation," United States Patent, Number 6,142,391, November 2000.
- Seyed-Yagoobi, J. and Wawzyniak, M., "Electrohydrodynamic Induction Pumping Thermal Energy Transfer System and Method" United States Patent, Number 6,409,975, June 2002, Licensed to Wieland-Werke AG Tube Company, Ulm, Germany.
- Seyed-Yagoobi, J. and Bryan, J.E., "Electrohydrodynamic Conduction Pump," United States Patent, Number 6,932,580, August 2005, Licensed to Wieland-Werke AG Tube Company, Ulm, Germany.
- Seyed-Yagoobi, J. and Brand, K., "Electrode Design for Electrohydrodynamic Induction Pumping Thermal Energy Transfer System," United States Patent, Number 7,004,238, February 2006, Licensed to Wieland-Werke AG Tube Company, Ulm, Germany.
- Seyed-Yagoobi, J. "Electrode Designs for Electrohydrodynamic Conduction Pump," United States Patent, Number 7,261,521, September 2007, Licensed to Wieland-Werke AG Tube Company, Ulm, Germany.
- Seyed-Yagoobi, J. and Pearson, M., "Electrically Driven Heat Transport Device", provisional patent issued in January 2010.

## **SOFTWARE DEVELOPMENT**

Seyed-Yagoobi, J. and Asensio, M.C., Software Package Entitled, "VISION," for Simulation of Paper Machine Drying Section, software licensed to Gas Research Institute, Chicago, Illinois, December, 1997.

## **THESES**

Ph.D., Seyed-Yagoobi, J., "Theoretical, Numerical, and Experimental Study of Electrohydrodynamic Pumping in Vertical Configuration," (Advisor: Professor J.C. Chato)

M.S., Seyed-Yagoobi, J., "A Viscometric Temperature Measurement Technique in Electrohydrodynamic Flow," (Advisor: Professor J.C. Chato)

## **HONORS AND AWARDS**

- Alumni Board Member, Department of Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, 2010-2013
- ASME, Heat Transfer Division, Certificate of Appreciation for Journal of Heat Transfer Associate Editorship, November 2009
- French Ministry of Education Fellowship, "Research Collaboration in the Field of Electrohydrodynamics," Host: University of Poitiers, Poitiers, France, June-July 2009

- James Melcher Prize Paper Award, IEEE-IAS Electrostatics Processes Committee, “Control of Liquid Flow Distribution Utilizing EHD Conduction Pumping Mechanism”, Feng, Y. and Seyed-Yagoobi, J., October 2007
- Innovation and Creativity Prize Paper Award, IEEE-IAS Electrostatics Processes Committee, “Theoretical/Numerical Study of Electrohydrodynamic Pumping Through Conduction Phenomenon”, Jeong, S., Seyed-Yagoobi, J., and Atten, P., October 2004.
- Space Act Award – Certificate of Recognition, NASA John H. Glenn Research Center Inventions and Contributions Board, April 2002.
- Senior Member, Institute of Electrical and Electronics Engineers, February 2002
- Faculty Distinguished Achievement Award in Teaching, The Association of Former Students of Texas A&M University, October 2001
- French Ministry of Education Fellowship, “Research Collaboration in the Field of Electrohydrodynamics,” Host: University of Poitiers, Poitiers, France, June-July 2001
- Fellow, American Society of Mechanical Engineers, June 1999
- Gustus L. Larson Memorial Award, Pi Tau Sigma and American Society of Mechanical Engineers, November 1998 (for outstanding achievement in mechanical engineering within ten to twenty years following graduation from an engineering curriculum)
- Paul John Faculty Fellow, College of Engineering, Texas A&M University, 1998
- Space Act Award - Certificate of Recognition, NASA Johnson Space Center Inventions and Contributions Board, November 1997
- Recognition of Faculty Mentors, College of Engineering, Texas A&M University, September 1999, 1998, 1997, and 1996
- Texas Engineering Experiment Station (TEES) Senior Fellow Award, College of Engineering, Texas A&M University, September 1996
- Texas Engineering Experiment Station (TEES) Fellow Award, College of Engineering, Texas A&M University, September 1995
- Japan Society for the Promotion of Science Fellowship, "Enhancement of Heat Transfer with Electrohydrodynamics," Host: University of Tsukuba and Ministry of International Trade and Industry, Tsukuba, Japan, May-July 1995
- Texas Engineering Experiment Station (TEES) Fellow Award, College of Engineering, Texas A&M University, September 1994
- Technical Association of Pulp and Paper Industries' (TAPPI) 1992 Best Research Paper Award, "Theoretical Drying Study of Single-Tier Versus Conventional Two-Tiered Dryer Configurations," Asensio, M.C. and Seyed-Yagoobi, J., September 1993
- NASA-ASEE Summer Faculty Fellowship, "Enhancement of Heat Transfer with Electrohydrodynamics," NASA Goddard Space Flight Center, June- August 1993 (Received the same fellowship for June-August 1994, but was unable to accept it)
- Award of Appreciation, Student Section of the ASME, Texas A&M University, May 1993.
- General Dynamics Teaching Award, College of Engineering, Texas A&M University, October 1992
- Outstanding Undergraduate Teaching Award, Department of Mechanical Engineering, Texas A&M University, November 1991

## **BIOGRAPHICAL LISTINGS**

Who's Who in America (49<sup>th</sup> edition)  
Who's Who in American Education (5<sup>th</sup> edition)  
Who's Who in Science and Engineering (2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup> editions)  
Who's Who in the South and Southwest (23<sup>rd</sup> and 25<sup>th</sup> editions)  
Lexington Who's Who (1999/2000 millennium edition)  
Dictionary of International Biography (23<sup>rd</sup> edition)

## **HONORARY SOCIETIES**

Member of Tau Beta Pi, Phi Kappa Phi, Sigma XI, Pi Tau Sigma

## **PROFESSIONAL SOCIETIES**

- Member of American Society of Mechanical Engineers, ASME (1984-present), Member of ASME K-15 Committee (Transport Phenomena in Manufacturing and Material Processing Committee) and K-15 Committee Representative in 1998-1999
- Member of the Institute of Electrical and Electronics Engineers, IEEE (1989-present), Member of IEEE-IAS Electrostatics Committee
- Member of American Institute of Aeronautics and Astronautics, Inc., AIAA (1990-1991)
- Member of American Society for Engineering Education, ASEE (1987-present)
- Associate Member of American Society of Heating, Refrigeration, and Air Conditioning Engineers, ASHRAE (1985-present), Member of Liquid to Refrigerant Heat Exchangers Committee
- Member of Technical Association of Pulp and Paper Industries, TAPPI (1987- present), Member of TAPPI Water Removal Committee

## **PROFESSIONAL ACTIVITIES**

- Member of Scientific Council, International Center for Heat and Mass Transfer, 2006 - 2010
- Member of James Melcher Prize Paper Award and Innovation and Creativity Prize Paper Award Committee, IEEE-IAS Electrostatic Processes Committee, 2004.
- Chair of James Melcher Prize Paper Award Committee, IEEE-IAS Electrostatic Processes Committee, 2003.
- Member of Advisory Committee of International Conference on Dielectric Liquids, July 1999 - present

- Member of Advisory Panel of International Drying Symposium, September 1998 - present
- Chairman, IEEE-IAS Electrostatic Processes Committee, October 1999 - September 2001
- Vice-Chairman, IEEE-IAS Electrostatic Processes Committee, October 1997-September 1999
- Secretary, IEEE-IAS Electrostatic Processes Committee, October 1995-September 1997

## **EDITORIAL ACTIVITIES**

- Associate Editor of the *ASME Journal of Heat Transfer*, 2006-2009
- Associate Editor of the *IEEE Transactions on Industry Applications* (2008-2011).
- Member of International Editorial Advisory Board, *Journal of Drying Technology*, Marcel Dekker, Inc., 1998 - present.
- Associate Editor of the *Journal of Applied Fluid Mechanics*, 2007-present.
- Member of Editorial Board, *Journal of Faculty of Engineering*, University of Tabriz, Tabriz, Iran, 1996-present.
- "Manufacturing and Materials Processing," edited by J. Seyed-Yagoobi et al., ASME-HTD-Vol. 347, 1997.
- "Thermal Contact Conductance and Inverse Problems in Heat Transfer," edited by J. Seyed-Yagoobi and K.A. Woodbury, ASME-HTD-Vol. 332, 1996.
- "Multiphase Flow in Porous Media," edited by J. Seyed-Yagoobi and Y.A. Hassan, ASME-HTD-Vol. 334, 1996.
- "Transport Phenomena in Materials Processing and Manufacturing," edited by J. Seyed-Yagoobi et al., ASME-HTD-Vol. 336, 1996.
- "Transport Phenomena in Materials Processing," edited by J. Seyed-Yagoobi, et al., ASME-HTD-Vol. 317-2, 1995.
- "Heat and Mass Transfer in Materials Processing and Manufacturing," edited by J. Seyed-Yagoobi et al., ASME-HTD-Vol. 261, 1993.
- "Heat and Mass Transfer in Pulp and Paper Processing," edited by J. Seyed-Yagoobi and D.W. Anderson, ASME-HTD-Vol. 238, 1993.

## **SESSION CHAIR ACTIVITIES**

- Session Chairman, "Electrohydrodynamics", 16<sup>th</sup> IEEE International Conference on Dielectric Liquids, Poitiers, France, June 2008.
- Session Chairman, "Drying of Paper", 14<sup>th</sup> International Drying Symposium, Sao Paulo, Brazil, August 2004.
- Session Chairman, "Applied Electrostatics II and Electrohydrodynamics", IEEE-IAS Annual Meeting, Pittsburgh, Pennsylvania, October 2002.
- Session Chairman, "Drying of Paper-1", 13<sup>th</sup> International Drying Symposium, Beijing, China, August 2002.
- Session Co-Chairman, "Modeling and Simulation-4", 13<sup>th</sup> International Drying Symposium, Beijing, China, August 2002.

- Session Chairman, 14<sup>th</sup> International Conference on Dielectric Liquids, Graz, Austria, July 2002.
- Session Chairman, "Power Electronics," IEEE-IAS Annual Meeting, Chicago, Illinois, October 2001.
- Session Chairman, "Electrohydrodynamics", IEEE-IAS Annual Meeting, Chicago, Illinois, October 2001.
- Session Chairman, The Second Inter-American Drying Conference, Veracruz, Mexico, July 2001.
- Session Chairman, "Power Electronics," IEEE-IAS Annual Meeting, Rome, Italy, October 2000.
- Session Chairman, "Electrohydrodynamics", IEEE-IAS Annual Meeting, Rome, Italy, October 2000.
- Session Chairman, "Industrial Processes and Equipment-9," 12<sup>th</sup> International Drying Symposium, Noordwijkerhout, The Netherlands, August 2000.
- Session Co-Chairman, Industrial Processes and Equipment-2," 12<sup>th</sup> International Drying Symposium, Noordwijkerhout, The Netherlands, August 2000.
- Session Chairman, "Electrohydrodynamics 1," 2<sup>nd</sup> International Workshop on Electrical Conduction, Convection, and Breakdown in Fluids, Grenoble, France, May 2000
- Session Chairman, "Transport Process in Woven and Non-Woven Materials Processing," ASME International Mechanical Engineering Congress and Exposition, Nashville, Tennessee, November 1999.
- Session Chairman, "Liquids and Electrohydrodynamics," IEEE-IAS Annual Meeting, Phoenix, Arizona, October 1999.
- Session Chairman, 13<sup>th</sup> International Conference on Dielectric Liquids, Nara, Japan, July 1999.
- Session Chairman, "Electrohydrodynamics," IEEE-IAS Annual Meeting, St. Louis, Missouri, October 1998.
- Session Chairman, "Impinging Jets," 10<sup>th</sup> International Symposium on Transport Phenomena in Thermal Science and Process Engineering, Kyoto, Japan, December 1997.
- Session Chairman, "Electrohydrodynamics," IEEE-IAS Annual Meeting, New Orleans, Louisiana, October 1997.
- Session Chairman, "Jet Impingement and Spray Heat Transfer in Materials Processing," National Heat Transfer Conference, Baltimore, Maryland, August 1997.
- Session Chairman, "Modeling and Measuring Techniques," 8<sup>th</sup> International Conference on Electrostatics, Poitiers, France, June 1997.
- Session Chairman, "Transport Phenomena in Crystal Growth, Solidification, and Melting," 1996 ASME International Mechanical Engineering Congress and Exposition, Atlanta, Georgia, November 1996.
- Session Chairman, "Thermal Contact Conductance," 1996 ASME International Mechanical Engineering Congress and Exposition, Atlanta, Georgia, November 1996.
- Session Chairman, "Multi-Phase Flow in Porous Media," 1996 ASME International Mechanical Engineering Congress and Exposition, Atlanta, Georgia, November 1996.

- Session Chairman, "Transport Phenomena in Paper and Pulp Processing," 1995 ASME International Mechanical Engineering Congress and Exposition (formerly ASME Winter Annual Meeting), San Francisco, California, November 1995.
- Session Chairman, "Electrohydrodynamics," IEEE-IAS Annual Meeting, Denver, Colorado, October 1994.
- Session Chairman, "Heat and Mass Transfer in Porous Materials Processing and Manufacturing," ASME Winter Annual Meeting, New Orleans, Louisiana, December 1993.
- Session Chairman, "Electrohydrodynamics," IEEE-IAS Annual Meeting, Toronto, Canada, October 1993.
- Session Chairman, "Heat and Mass Transfer in Pulp and Paper Processing," National Heat Transfer Conference, Atlanta, Georgia, August 1993.
- Session Chairman, "Electrohydrodynamics," IEEE-IAS Annual Meeting, Houston, Texas, October 1992.

## **REVIEW ACTIVITIES**

### Technical Papers:

ASME Journal of Heat Transfer; Journal of International Heat and Mass Transfer; ASME Journal of Energy Resources Technology; ASME Journal of Engineering for Industry; AIAA Journal of Thermophysics and Heat Transfer; Numerical Heat Transfer Journal; Journal of Enhanced Heat Transfer; Journal of Experiments in Fluids; International Journal of Experimental Heat Transfer, Thermodynamics, and Fluid Mechanics; Journal of Environmental Thermal and Fluid Science; Journal of Electrostatics; Journal of Solar Energy; International Journal of Refrigeration; IEEE-IAS Transactions; IEEE-DEI Transactions; ASHRAE International Journal of HVAC&R Research; Heat Transfer Engineering Journal; Journal of Technical Association of Pulp and Paper Industries; Drying Technology Journal; Journal of Pulp and Paper Science; International Journal of Multiphase Flows; Journal of Porous Media; Iranian Engineering Journal; National Heat Transfer Conference; ASME International Mechanical Engineering Congress and Exposition; International Heat Transfer Conference; ASME/JSME Thermal Engineering Conference; AIAA Meetings; Australasian Heat and Mass Transfer Conference

### Technical Proposals:

National Science Foundation (including review panels), Australian Research Council, Natural Sciences and Engineering Research Council of Canada

### Text Books:

Leach, J.W., 1991, "Applied Thermal Science," Macmillan Publishing Company.  
 Jaluria, Y., 1995 and 1996, "Design and Optimization of Thermal Systems," McGraw Hill Co.  
 Mills, A.F., 1995, "Basic Heat and Mass Transfer," Irwin Publishing Company.  
 Oosthuizen, P.H. and Naylor, D., 1996, "An Introduction to Convective Heat Transfer Analysis," McGraw Hill Company.  
 (Author's name was kept anonymous) 1996, "Elements of Thermal-Fluid System Design,"

McGraw Hill Company.

Ribando, R., 2008, "Modern Heat Transfer", Prentice Hall Co.

## **CONSULTING**

(Professional Engineer in the State of Texas, Certificate Number 66728)

- Niehoff & Co., Evanston, Illinois, January 2009 to Present
- Gas Technology Institute, Des Plaines, Illinois, February 2005 to March 2005
- Centre des Technologies du Gaz Naturel, Boucherville, Quebec, Canada, November 2003 to May 2004
- Procter & Gamble, West Chester, Ohio, March 2004
- TRICON Restaurant Services Group, Inc., Dallas, Texas, November 2001
- Product Genesis, Inc., Cambridge, Massachusetts, April 2001
- Voith Paper, Heidenheim, Germany, December 2000 to 2001
- American Forest and Paper Association, New York, New York, December 2000 to 2003
- Gas Research Institute, Chicago, Illinois, May 1998 to present
- Kimberly-Clark Corporation, Neenah, Wisconsin, November 1996 to May 1997
- International Technology and Trade Inc., Midland, Ontario, Canada, September 1995 to December 1995
- Johnson & Johnson Medical, Inc., Sherman, Texas, October 1994 to January 1995
- Texas Instruments Corporation, Plano, Texas, September 1994
- ABB Industrial Drying, Appleton, Wisconsin, October 1991 to August 1995
- Pizza Hut, Inc., Wichita, Kansas, August 1991 to November 1991
- Frito-Lay, Inc., Irving, Texas, January 1990 to May 1990 and March 1991 to May 1991
- WEB Systems, Inc., Boulder, Colorado, December 1990
- Bommer Engineering Company, San Antonio, Texas, February 1990
- Westvaco Corporation, Covington, Virginia, December 1987 to May 1988

## **PROFESSIONAL OUTREACH**

- Member of Jury, L'Habilitation a Diriger des Recherches, l'Universite de Poitiers, Laboratoire Etudes Aérodynamiques, Poitiers, France (Candidate : Thierry Pailiat, Dossier's Title : Double Couche Électrique et Phénomènes Électrocinétiques), June 30, 2009
- Technical Presentation at the Illinois ASHRAE Chapter, Naperville, Illinois, October 11, 2005.
- Participated at the NASA Multiphase Flow in Space Power and Propulsion Workshop, Organized by the Office of Biological and Physical Research, NASA Headquarter (by invitation only), Cleveland, Ohio, May 15, 2003.
- Participated at the Natural Gas Distribution Industry Technology Roadmap Workshop, Organized by the Gas Technology Institute (by invitation only), Des Plaines, Illinois, December 5-6, 2001.
- Reviewed Three Tenure and Promotion Packages, King Fahd University of Petroleum and Minerals, Dahrán, Saudi Arabia, 2001 and 2002.

- Reviewed Two Promotion and Tenure Packages, Department of Mechanical Engineering, University of Queensland, Brisbane, Australia, June 2000.
- External Reviewer for Oral Ph.D. Dissertation Defense, Department of Chemical Engineering 1, Lund University, Lund, Sweden (Candidate: Magnus Pettersson, Dissertation Title: Heat Transfer and Energy Efficiency in Infrared Paper Dryers), December 10, 1999.
- Participated at the Energy Efficiency and Renewable Energy Program Review of the U.S. Department of Energy (by invitation only), Arlington, Virginia, December 1-3, 1998.
- Participated at the Electric Power Research Institute Technology Roadmap Workshop (by invitation only), Orlando, Florida, May 6-7, 1998.
- Collaborated with Professor P. Schmidt at the University of Texas in Austin with Establishment of the Drying Association of North America - DANA (1994-1995).
- United Nations Development Program - Transfer of Knowledge Through Expatriate National, Assignment: Assisting Department of Mechanical Engineering, Univ. of Tabriz in Iran with Establishing their Ph.D. Program, December 14, 1993 - January 20, 1994.
- Instructor for a Workshop/Short Course on the Electrohydrodynamic Enhancement of Single-Phase and Phase-Change Heat Transfer in Heat Exchangers Sponsored by ASHRAE and University of Maryland, Baltimore, Maryland, June 26, 1992.
- Instructor for a Texas A&M University Industrial Short Course on the Design of Thermal Systems, Houston, Texas, September 14, 1988.

## **SERVICE ACTIVITIES AT TEXAS A&M**

- Establishment and Director of the Drying Research Center, Department of Mechanical Engineering (1993-2001)
- Department of Mechanical Engineering Thermal and Fluid Sciences Division Leader (2000-2001)
- Department of Mechanical Engineering EFAC (Engineering Faculty Advisory Committee) Representative (1998-2001)
- Member of Tenure and Promotion Committee, Department of Mechanical Engineering (1999-2003)
- Member of Advisory Committee, Department of Mechanical Engineering (1999-2001)
- Member of Heat Transfer Ph.D. Qualifying Exam Committee, Department of Mechanical Engineering (1995-2000)
- Member of Fluid Mechanics Ph.D. Qualifying Exam Committee, Department of Mechanical Engineering (1989-1992)
- Member of College of Engineering TEES Senior Fellow, TEES Fellow, and Young TEES Fellow Awards Selection Committee (1997)
- Member of the Department of Mechanical Engineering Scholarship Committee (1998-present)
- Member of Award Committee, Department of Mechanical Engineering (1994-1997 and 2001 - present)

- Texas A&M University Mentor (1992-2001)
- Member and Graduate Council Representative of Several Ph.D. Committees at Various Colleges (1988-2001)
- Provided Review Sessions for Fundamentals of Engineering Examination for EIT (1991 and 1993)
- Member of Food Processing/Value Added Committee - Institute of Food Science and Engineering (1995- 2001)
- Member of Graduate Affairs Focus Group, Department of Mechanical Engineering (1992)

## **INVITED LECTURES AND KEYNOTE PRESENTATIONS**

1. “Enhancement of Heat Transfer and Mass Transport with Electrical Fields in Macro and Micro Scales”, Navy Research Laboratory, Washington, D.C., October 2009 (Partial Financial Support from NRL).
2. “Impinging Jet Generated by Electric Conduction Phenomenon”, NSF Workshop on Electrostatic Atomization of Electrically Insulating Liquids: Principles and Applications, School of Engineering Sciences, University of Southampton, Southampton, UK, March 2009 (Financial support from NSF).
3. “Enhancement of Heat Transfer and Mass Transport with Electrical Fields in Macro and Micro Scales”, Department of Mechanical, Aerospace, and Biomedical Engineering, University of Tennessee - Knoxville, February 28, 2008 (Financial support from the University of Tennessee – Knoxville).
4. “Electrically Driven Flows for Heat Transfer and Mass Transport in Micro-gravity Environment”, Korea Advanced Institute of Science and Technology, Daejeon, Korea, February 20, 2008 (Financial Support from KIMM of Korea).
5. “Simulation of Paper Drying Process and Heat and Mass Transfer Characteristics of Reattachment Jets”, Korea Institute of Energy Research, Daejeon, Korea, February 19, 2008 (Financial Support from KIMM of Korea).
6. “Enhancement of Heat Transfer and Mass Transport with Electrical Fields in Macro and Micro Scales”, Korea Institute of Machinery and Materials (KIMM), Daejeon, Korea, February 18, 2008 (Financial Support from KIMM of Korea).
7. “Enhancement of Heat Transfer and Mass Transport with Electrical Fields in Macro and Micro Scales”, Mechanical Engineering Department, University of Kentucky – Lexington, April 19, 2007 (Financial Support from University of Kentucky – Lexington).
8. “Enhancement of Heat Transfer and Mass Transport in the Presence and Absence of Gravity”, *Gordon Conference of Engineering Sciences for Space Exploration*, Les

- Diablerets, Switzerland, August 2005 (Financial Support from NASA/Conference Organizers).
9. “Electrohydrodynamic Induction Pumping of Dielectric Liquid Films”, *15<sup>th</sup> International Conference on Dielectric Liquids*, Coimbra, Portugal, June 2005 (Partial Financial Support from the Conference Organizers).
  10. “Electrohydrodynamic Pumping of Dielectric Liquids”, *10<sup>th</sup> International Conference on Electrostatics*, Espoo/Helsinki, Finland, June 2005 (Partial Financial Support from the Conference Organizers).
  11. “Enhancement of Heat Transfer and Mass Transport with Electrohydrodynamics”, Department of Mechanical and Industrial Engineering, University of Illinois at Urbana Champaign, Urbana, Illinois, October 19, 2004.
  12. “Electrohydrodynamic Pumping”, 5<sup>th</sup> International EHD Workshop, Poitiers, France, August 30, 2004.
  13. “Electrohydrodynamic Pumping Based on Conduction Phenomenon”, Tabriz University, Tabriz, Iran, July 14, 2004.
  14. “Enhancement of Heat Transfer and Mass Transport with Electrohydrodynamics”, Department of Mechanical Engineering, Purdue University, Lafayette, Indiana, April 15, 2004 (Financial Support from Purdue University).
  15. “Topics in Drying”, Kimberly-Clark Company, Neenah, Wisconsin, October 17, 2003 (Financial Support from Kimberly-Clark Company).
  16. “Enhancement of Heat Transfer and Mass Transport with Electrohydrodynamics”, Department of Mechanical and Industrial Engineering, University of Illinois at Chicago, Chicago, Illinois November 7, 2002
  17. “Drying of Uncoated Paper with Gas-Fired Infrared Emitters – Optimum Emitters’ Location within the Paper Machine”, *13<sup>th</sup> International Drying Symposium*, Beijing, China, August 27, 2002 (Partial Financial Support from the Conference Organizers).
  18. “Enhancement of Heat Transfer and Mass Transport in Single-Phase and Two-Phase Flows with Electrohydrodynamics,” Mechanical Engineering Department, Louisiana State University, Baton Rouge, Louisiana, March 8, 2002 (Financial Support from Louisiana State University).
  19. “Innovative Impinging Jets,” Metso Paper Company and VTT Energy Laboratory, Jyväskylä, Finland, December 10, 2001.

20. "Innovative Impinging Jets," Energy Diversification Research Laboratory (CANMET), Natural Resources Canada, Varennes, Canada, November 14, 2001.
21. "Electrohydrodynamics Innovations in Heat Transfer Enhancement Applications," Department of Mechanical Engineering, Tabriz University, Tabriz, Iran, August 1, 2001.
22. "Enhancement of Heat Transfer with Reattachment Jets," *Inter-American Drying Conference*, Veracruz, Mexico, July 8, 2001 (Partial Financial Support from the Conference Organizers).
23. "Enhancement of Heat Transfer and Mass Transport in Single-Phase and Two-Phase Flows with Electrohydrodynamics," Laboratoire d'Etudes Aerodynamiques, CNRS and University of Poitiers, Poitiers, France, June 21, 2001 (Financial Support from the French Ministry of Education).
24. "Enhancement of Heat Transfer and Mass Transport in Single-Phase and Two-Phase Flows with Electrohydrodynamics," Department of Mechanical, Materials, and Aerospace Engineering, Illinois Institute of Technology, Chicago, Illinois, April 18, 2001 (Financial Support from Illinois Institute of Technology).
25. "Enhancement of Heat Transfer and Mass Transport with Electrohydrodynamics," Department of Chemical Engineering 1, Lund University, Lund, Sweden, December 9, 1999 (Financial Support from Lund University).
26. "Recent Developments in Electrohydrodynamically Enhanced Heat Transfer," *IEEE Dielectrics and Electrical Insulation Society - Electrohydrodynamics Technical Committee Meeting*, Austin, Texas October 17, 1999.
27. "Augmentation of Two-Phase and Single-Phase Heat Transfer and Mass Transport with Electrohydrodynamics in Thermal Equipment," Invited Speaker, *13<sup>th</sup> International Conference on Dielectric Liquids*, Nara, Japan, July 23, 1999 (Partial Financial Support from the Conference Organizers).
28. "Enhancement of Convective Boiling Heat Transfer with Electrohydrodynamics," *IEEE Dielectrics and Electrical Insulation Society - Electrohydrodynamics Technical Committee Meeting*, Atlanta, Georgia, October 25, 1998.
29. "Enhancement of Heat Transfer with Electrohydrodynamics in Two Phase Flows," Department of Electrical Engineering and Computer Science - Laboratory for Electromagnetic and Electronic Systems, Massachusetts Institute of Technology, Cambridge, Massachusetts, June 30, 1997.
30. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics - Single Phase and Two Phase Flows," Department of Mechanical Engineering, Aeronautical Engineering &

Mechanics, Rensselaer Polytechnic Institute, Troy, New York, February 28, 1997 (Financial Support from Rensselaer Polytechnic Institute).

31. "Enhancement of Heat and Mass Transfer in Single-Phase and Two-Phase Flows with Electrohydrodynamics," *Open Forum: Future Trends in Enhanced Heat Transfer*, National Heat Transfer Conference, Houston, Texas, August 1996.
32. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics on Single Phase and Two Phase Flow Systems," Department of Mechanical Engineering, University of Houston, Texas, September 14, 1995 (Financial Support from the University of Houston).
33. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics - Single Phase and Two Phase Flow Systems," Mechanical Engineering Laboratory, Ministry of International Trade and Industry, Tsukuba, Japan, July 6, 1995 (Financial Support from Japan Society for Promotion of Science).
34. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics - Single Phase and Two Phase Flow Systems," Department of Mechanical Engineering, University of Tokyo, Tokyo, Japan, July 3, 1995 (Financial Support from Japan Society for Promotion of Science).
35. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics - Single Phase and Two Phase Flow Systems," Department of Mechanical Systems Engineering, Kanazawa University, Kanazawa, Japan, June 27, 1995 (Financial Support from Japan Society for Promotion of Science).
36. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics - Single Phase and Two Phase Flow Systems," Department of Electrical and Information Engineering, Yamagata University, Yonezawa, Japan, June 23, 1995 (Financial Support from Japan Society for Promotion of Science).
37. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics - Single Phase and Two Phase Flow Systems," Keihin Product Operations, Toshiba Heavy Apparatus Engineering Laboratory, Yokohoma, Japan, June 20, 1995 (Financial Support from Japan Society for Promotion of Science).
38. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics - Single Phase and Two Phase Flow Systems," Department of Mechanical Engineering, Science University of Tokyo, Noda, Japan, June 15, 1995 (Financial Support from Japan Society for Promotion of Science).
39. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics - Single Phase and Two Phase Flow Systems," Electrostatic Society of Japan, Dielectric Fluids Div. Annual

- Meeting, Tokyo, Japan, June 9, 1995 (Financial Support from Japan Society for Promotion of Science).
40. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics – Single Phase and Two Phase Flow Systems," Institute of Engineering Mechanics, Tsukuba University, Tsukuba, Japan, June 8, 1995 (Financial Support from Japan Society for Promotion of Science).
  41. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics - Single Phase and Two Phase Flow Systems," Department of Mechanical Engineering, Kyushu University, Hakata, Japan, May 30, 1995 (Financial Support from Japan Society for Promotion of Science).
  42. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics, - Single Phase and Two Phase Flow Systems," Mitsubishi Heavy Industry Research Center, Takasago, Japan, May 29, 1995, (Financial Support from Japan Society for Promotion of Science).
  43. "Heat Transfer from a Radial Jet Reattachment Combustion Nozzle," Department of Mechanical Engineering, Tabriz University, Tabriz, Iran, January 9, 1994 (Financial Support from the United Nations).
  44. "Augmentation of Condensation Heat Transfer with Electrohydrodynamics," Department of Mechanical Engineering, Tabriz University, Tabriz, Iran, January 2, 1994 (Financial Support from the United Nations).
  45. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics," Allied Signal Aerospace, Torrance, California, October 25, 1993.
  46. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics," United Technologies Carrier, Syracuse, New York, October 8, 1993.
  47. "Enhancement of Heat and Mass Transfer with Electrohydrodynamics," NASA Goddard Space Flight Center, Greenbelt, Maryland, July 14, 1993 (Financial Support from ASEE).
  48. "Heat and Mass Transfer in Porous Media-Paper Drying," Department of Mechanical Engineering, University of Maryland, College Park, Maryland, July 13, 1993.
  49. "Renewable Energy Resource: Solar Pond," Department of Mechanical Engineering, Tabriz University, Tabriz, Iran, December 30, 1992.
  50. "Enhancement of Heat Transfer Resulting from Electrohydrodynamic Pumping," Department of Mechanical Engineering, Tabriz University, Tabriz, Iran, December 31, 1992.

51. "Analysis of Heat and Mass Transfer in a Paper Sheet During Drying," Laboratoire d'Energetique et de Mecanique Theorique et Apliquee, C.N.R.S., Nancy, France, Oct. 21, 1992.
52. "Analysis of Heat and Mass Transfer in Porous Media; Drying of Paper," Department of Mechanical Engineering, University of Tokyo, Tokyo, Japan, March 16, 1992.
53. "Electrohydrodynamic Pumping," Department of Mechanical Engineering, Kinki University, Kure, Japan, March 19, 1992.
54. "Electrohydrodynamic Pumping," Department of Mechanical Engineering, Tabriz University, Tabriz, Iran, January 3, 1992.
55. "Electrohydrodynamic Pumping," Department of Physics, University of Sevilla, Sevilla, Spain, July 17, 1991.
56. "Texas Drying Research Consortium: Projects Related to Drying Process in Pulp and Paper Industries," Pulp and Paper Center, University of British Columbia, Vancouver, Canada, July 8, 1991.
57. "Electrohydrodynamic Heat Exchanger Pump," Department of Electrical Engineering, Hokkaido University, Sapporo, Japan, March 14, 1991.
58. "Analysis of Heat and Mass Transfer in a Paper Sheet During Drying," Department of Mechanical Engineering, Tabriz University, Tabriz, Iran, January 5, 1991.
59. "Texas Drying Research Consortium: Projects Related to Drying Process in Pulp and Paper Industries," Institute of Paper Science Technology, Atlanta, Georgia, October 1, 1990.
60. "Ion-Drag Heat Exchanger Pump," Department of Mechanical Engineering, University of Tokyo, Tokyo, Japan, June 28, 1990.
61. "Ion-Drag Heat Exchanger Pump," Mechanical Engineering Laboratory Ministry of International Trade and Industry, Tsukuba Science City, Japan, June 27, 1990.
62. "Ion-Drag Heat Exchanger Pump," Aerodynamics Division, National Aerospace Laboratory, Tokyo, Japan, June 26, 1990.
63. "Analysis of Heat and Mass Transfer in a Paper Sheet During Drying," Department of Mechanical Engineering, University of Queensland, St. Lucia, Australia, May 28, 1990.
64. "Analysis of Heat and Mass Transfer in a Paper Sheet During Drying," School of Mechanical and Industrial Engineering, University of New South Wales, Kensington, Australia, May 24, 1990.

65. "Optimization Techniques Applied to Thermal Systems," Hawker Siddeley Power Engineering Inc., Houston, Texas, November 16, 1988 (Financial Support from Hawker Siddeley Power Engineering, Inc.).
66. "Temperature Induced Electrohydrodynamic Pumping," Department of Mechanical Engineering, University of Wisconsin-Milwaukee, Wisconsin, March 20, 1987 (Financial Support from the University of Wisconsin-Milwaukee).

### **SHORT COURSES ATTENDED**

- Nano Training Bootcamp, ASME Nanotechnology Institute, Evanston, Illinois, July 2003.
- Capillary Pumped Loop, NASA Goddard, Annapolis, Maryland, May 1992.
- Heat Exchanger Design and Enhancement, University of Maryland, College Park, Maryland, November 1991.
- Paper Drying, Johnson Corporation, Three Rivers, Michigan, March 1990.
- Microprocessor Based Mechanical Systems, University of California, Berkeley, California, August 1989.
- Modern Time and Spectral Analysis, Time Series Associates, Palo Alto, California, October 1986.
- Applied Vibration Engineering, Vibration Institute, Orlando, Florida, May 1986.
- Applications of HVAC System Psychometrics and Load Calculations, ASME, Miami Beach, Florida, November 1985.
- Strategy of Experimentation, DuPont, Charleston, South Carolina, May 1985.
- IEEE 488 Interfacing, HP, Thousand Oaks, California, April 1985.
- IBM CS 9000, IBM, San Jose, California, November 1984.
- Basic Principles of Pulp and Paper, Westvaco Corporation, Covington, Virginia, October 1984.

### **BRIEF STATEMENT - TEXAS A&M UNIVERSITY DRYING RESEARCH CENTER**

Dr. Seyed-Yagoobi, with valuable help from his colleagues, established the Texas A&M Drying Research Center (DRC) in 1993. The center is supported with its industry membership fee. The DRC assists industry, nationally and internationally, in improving the performance of existing and future industrial drying through the application of advanced heat and mass transfer technologies. Optimization of drying systems for process industries results in reduced energy use, lower production costs, increased productivity and improved product quality. In responding to industry drying problems, the Center helps improve the global competitive position for member companies. The laboratories of the DRC now include six unique facilities with modern up-to-date instrumentation. The DRC has been very successful in transferring technologies developed in DRC to industry.

## **BRIEF STATEMENT - ELECTROHYDRODYNAMICS LABORATORY**

At Texas A&M University, in 1988, Dr. J. Seyed-Yagoobi established a unique laboratory for electrohydrodynamics (EHD) research. The EHD Laboratory was relocated to the Illinois Institute of Technology (IIT) in 2002. Such a facility did not exist previously (neither at Texas A&M nor at IIT), but currently is available for fundamental and applied research. The facility has gained national and international recognition. Researchers from Australia, Canada, France, Germany, Japan, Korea, Spain, and the United States have specifically visited the EHD Laboratory. The EHD Laboratory features several especially designed single-phase and two-phase conduction, induction, and ion-drag pumping apparatuses in micro and macro scales. The laboratory also features several state of the art two-phase flow experimental apparatuses to study the augmentation of condensation heat transfer and boiling heat transfer with various EHD mechanisms. Also available in the EHD Laboratory is a unique facility for measuring the electrical conductivity and permittivity of dielectric fluids within a wide range of temperature and pressure. The working fluids include hydrocarbons and refrigerants.