FRANK INCROPERA

RESUME (5/3/2012)

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Education:

S.B. M.E., 1961, Massachusetts Institute of Technology
M.S.M.E., 1962, Stanford University
PhD, M.E., 1966, Stanford University

Employment/Appointments:

1960, M.I.T. - Industry Cooperative Work Program (9 months with Barry Controls Corporation). Design, test, and analysis of shock and vibration isolation systems.

1961, Summer Employment with Aerojet General Corporation. Heat transfer and thermodynamic analyses of propellant storage systems for large thrust boosters.

1962-64, Heat Transfer Specialist, Lockheed Missiles and Space Company. Development of improved techniques for predicting aerodynamic heating in laminar and turbulent boundary layers with and without separation. Responsibility for the thermal protection of several planetary probe systems and the supervision of two engineers and a computer aid during the second year. Part time student at Stanford University.

1964-66, Research Assistant, Mechanical Engineering Department, Stanford University. Design of equipment used to produce a high temperature plasmajet and application of spectroscopic and probe plasma diagnostic techniques. Studies relating to plasmajet flow transition phenomena and plasma heat transfer.

1966-69, Assistant Professor, School of Mechanical Engineering, Purdue University. Graduate and undergraduate teaching in thermodynamics and high temperature gas dynamics. Research in high temperature gas dynamics.

1969 (Summer), NASA-ASEE Fellow at the Ames Research Center, Mountain View, California. Research in high temperature gas dynamics.

1969-73, Associate Professor, School of Mechanical Engineering, Purdue University. Graduate and undergraduate teaching in thermodynamics and heat transfer. Research in high temperature gas dynamics and bioengineering.

1973-98, Professor, School of Mechanical Engineering, Purdue University. Graduate and undergraduate teaching in heat and mass transfer, thermodynamics, and fluid mechanics. Research on radiative transfer in absorbing-scattering-emitting media; free, mixed, forced and double-diffusive convection; electronic equipment cooling; boiling; and materials processing.

1973-74, Visiting Scholar, Mechanical Engineering Department, University of California, Berkeley, California. Research on heat and mass transfer processes related to powerplant waste heat utilization and solar energy collection.

1983, 87, Guest Professor, Departimento di Energetica, Universita Degli Studi di Pisa, Pisa, Italy (September-October). Research and lectures on mixed convection heat transfer.

1988, Guest Professor, Lehrstuhl C für Thermodynamik, Technical University of Munich, Federal Republic of Germany (August-December). Research and lectures on electronic cooling and solidification of binary substances.

1987,89, Assistant Dean of Engineering for Research and Graduate Programs, Purdue University.

1989-98, Head, School of Mechanical Engineering, Purdue University.

1998-2007, Matthew McCloskey Dean of Engineering, University of Notre Dame.

2006-2007, Visiting Professor, Massachusetts Institute of Technology.

2009, Visiting Professor, Trinity College, Dublin, Ireland (June-July).

Society Memberships:

American Society of Mechanical Engineers (Fellow)
American Society of Engineering Education
American Association for the Advancement of Science (Fellow)

Awards and Honors:

Pi Tau Sigma
Tau Beta Pi
Sigma Xi
Garrett Fellow, Stanford University (1961-62)
Harry Solberg Award for Best Teacher in Mechanical Engineering (1973, 1977, 1986)
A.A. Potter Award for Best Teacher in Engineering (1973)

Ralph Coats Roe Award for Excellence in Teaching and Other Notable Contributions to the Mechanical Engineering Profession, American Society of Engineering Education (1982)

Invited Lecturer, Southwest Mechanics Lecture Series (1983, 1998)

George Westinghouse Award for Outstanding Accomplishments in Teaching and Research, American Society of Engineering Education (1983)

Fellow, American Society of Mechanical Engineers (1984)

Third Annual Alexander Graham Christie Lecturer, Johns Hopkins University (1986)

Keynote Lecturer, Eighth International Heat Transfer Conference, San Francisco (1986)

Co-author, ASME Heat Transfer Division Best Paper Award:
"Transient Behavior of a Radiatively Heated Double-Diffusive System." (1987)

Invited Contributor, Special 50th Anniversary Issue of the ASME Journal of Heat Transfer (1988)

Senior United States Scientist Award of the Alexander von Humboldt Foundation, Bonn, Federal Republic of Germany (1988)

Keynote Lecturer, Twentieth Symposium of International Center for Heat and Mass Transfer, Dubrovnik, Yugoslavia (1988)

Melville Medal for Best Original Paper on a Mechanical Engineering Subject Published by the American Society of Mechanical Engineers: "Transient Behavior of a Radiatively Heated Double-Diffusive System." Co-author (1988)

Heat Transfer Memorial Award of the American Society of Mechanical Engineers:
"For two decades of outstanding research contributions of consistently high quality, breadth and depth, notably in radiation heat transfer, double-diffusive and mixed convection, and plasma heat transfer; and for significant contributions to engineering education." (1988)

Keynote Lecturer, Ninth National Heat Transfer Conference of Unione Italiana di Termofluidodinamica, Pisa, Italy (1991)

Centennial Award of the American Society of Engineering Education for Exceptional Contributions to Education and the Profession of Engineering (1993)

Keynote Lecturer, NATO Advanced Study Institute on Cooling of Electronic Systems, Cesme, Turkey (1993)

Worcester Reed Warner Award of the American Society of Mechanical Engineers:
"For contributions to the science and practice of heat transfer and to heat transfer pedagogy." (1995)

Elected to the National Academy of Engineering.
“For research on the science and practice of heat transfer and for contributions to engineering education.” (1996)

Thirteenth Annual Hawkins Memorial Lecturer, Purdue University (1996)

Keynote Lecturer, Fourth World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, Brussels, Belgium (1997)

Keynote Lecturer, Fifth Thermal Engineering Joint Conference of the American and Japanese Societies of Mechanical Engineers, San Diego, California (1999)

Ninth Annual Byron Short Memorial Lecturer, University of Texas, Austin (1999)

Inaugural Member of *Book of Great Teachers*, Purdue University (1999)
A permanent wall plaque in the Purdue Memorial Union honoring faculty members, past and present, “who have devoted their lives to excellence in teaching and scholarship.”

Keynote Lecturer, ENCIT 2000-Brazilian Conference on Thermal Engineering and Sciences, Porto Alegre, Brazil (2000)

Institute for Scientific Research *Highly Cited Researchers* Data Base (2001)
Named as one of the world's 100 most highly cited researchers in all fields of engineering, based on the number of journal citations recorded from 1981 to 1999 (ISI *Web of Science*).

Co-author, ASME Heat Transfer Division Classic Paper Award (2001)
Awarded annually for a paper published in the heat transfer literature at least 15 years ago that is cited extensively in other publications and has significantly contributed to the technology and science of heat transfer ("Convection Heat Transfer from Discrete Heat Sources in a Rectangular Channel," *International Journal of Heat and Mass Transfer 29*, 1051-1058, 1986).

Fellow, American Association for the Advancement of Science (2005).

Keynote Lecturer, Fifth ASME USB Engineering Congress, Universidad Simon Bolivar, Caracas, Venezuela (2006).

Keynote Lecturer, All Ireland Leadership Summit, Kildare Ireland (2006).

Keynote Lecturer, Sixth Annual Notre Dame Environmental Education and Research Conference, University of Notre Dame (2007).

Keynote Lecturer, Science Foundation of Ireland Symposium on Energy Research, Dublin (2008).

Citations in American Men and Women of Science, Marquis Who's Who in America, Marquis Who's Who in the Midwest, Who's Who in Engineering, Who's Who in Technology Today, International Who's Who in Engineering, and Marquis Who's Who in Frontiers of Science and Technology

Research Activities:

Heat transfer fundamentals related to radiation transfer in scattering-absorbing media; double-diffusive convection; free, forced and mixed convection; solidification; and boiling. Applications related to energy conversion, biomedical engineering, electronic equipment cooling, casting and quenching of metal alloys, and laser-based machining operations. Energy technology and policy. Publications are listed in Appendix A.

Administration and Service:

Includes serving on numerous committees at the department, school, university, state, and national levels, as well as chairing the Heat and Mass Transfer Area of Mechanical Engineering, serving as Assistant Dean of Engineering for Research and Graduate Programs, and serving as Head of the School of Mechanical Engineering at Purdue University. Also served as Dean of Engineering at the University of Notre Dame University from 1998 to 2007 and numerous committees dealing with education, research and administrative activities. Detailed lists are provided in Appendices B and C.

On-Campus Teaching:

Thermodynamics (Undergraduate and Graduate, Classical and Statistical)
Fluid Mechanics (Undergraduate)
Heat Transfer (Undergraduate and Graduate, Lecture and Laboratory)
Thermal Systems Analysis (Dual Level)

Technology and Values (Undergraduate)
Energy Technology and Policy

Continuing Education:

Off-Campus Teaching

Indianapolis Extension of Purdue University (Graduate Level Thermodynamics, Classical and Statistical, 1966 and 1970)
All Regional Campuses, TV (Graduate Level Heat Transfer, 1977 and 1980)
Cummins Engine Company (Graduate Level Heat Transfer, 1980)

Short Courses:

Major or exclusive responsibilities for short course lectures on:

Fundamentals of Heat Transfer, Purdue University, West Lafayette, November 1-4, 1977.
Industrial Energy Conservation, Purdue University, West Lafayette, May 1-4, 1978.
Industrial Energy Conservation, Purdue University, West Lafayette, April 24-26, 1979.
Fundamentals of Heat Transfer: A Review, IBM Corporation, Poughkeepsie, NY, May 20-31, 1985.

Workshops and Conferences:

Includes serving as panelist, lecturer and session or conference organizer. A detailed list is provided in Appendix C.

Invited Lectures:

Lectures dealing with plasma transport processes, radiative transfer in absorbing-scattering media, mixed convection, double-diffusive convection, waste heat recovery, materials processing, electronic cooling, energy utilization, energy and public policy, and/or engineering education have been given at:

University of Illinois, Urbana-Champaign (1966)
Ohio State University, Columbus (1966)
Purdue University, W. Lafayette, Indiana (1966, 1974, 1986, 1996, 2003, 2011)
NASA-Ames Research Laboratory, Mountain View, California (1969)
Aerospace Research Laboratories, Dayton, Ohio (1972)
University of California, Berkeley (1974)
University of Florida, Gainesville (1978)
Alcoa Technical Center, Alcoa, Pennsylvania (1979)
Arizona State University, Tempe (1982)
University of Texas, Austin (1983, 1999)
Texas A & M, College Station (1983, 1998)
Shell Development Laboratories, Houston, Texas (1983)
Louisiana State University, Baton Rouge (1983)
Universita di Pisa, Pisa, Italy (1984)
Argonne National Laboratory, Argonne, Illinois (1985)

IBM Corporation, Poughkeepsie, New York (1986)
Carnegie Mellon University, Pittsburgh, Pennsylvania (1986)
Johns Hopkins University, Baltimore, Maryland (1986)
Washington State University, Pullman (1987)
University of Nevada, Reno (1987)
University of Iowa, Iowa City (1987)
Rockwell-Collins Electronics, Cedar Rapids, Iowa (1987)
University of Notre Dame, South Bend, Indiana (1987, 1998, 1999, 2006)
University of Karlsruhe, Federal Republic of Germany (1988, 2002)
Technical University of Darmstadt, Federal Republic of Germany (1988)
Philips, Eindhoven, The Netherlands (1988)
3M European Technical Center, Antwerp, Belgium (1988)
University of Stuttgart, Federal Republic of Germany (1988)
Ansaldo Elettronica, Rome, Italy (1988)
University of Essen, Federal Republic of Germany (1988)
Siemens AG, Munich, Federal Republic of Germany (1988)
Technical University of Munich, Federal Republic of Germany (1988, 2002)
University of Kentucky, Lexington (1989)
3M Technical Center, St. Paul, Minnesota (1989)
University of Pennsylvania, Philadelphia (1990)
Clemson University, Clemson, South Carolina (1991)
State University of New York, Binghamton (1992)
Wright State University, Dayton, Ohio (1993)
University of Arizona, Tucson (1993)
General Electric Aircraft Engines, Cincinnati, Ohio (1994)
University of Michigan, Ann Arbor (1994)
University of Massachusetts, Amherst (1995)
University of Miami, Miami, Florida (1995)
Georgia Institute of Technology, Atlanta (1996)
University of Connecticut, Storrs (1997)
Tulane University (1998)
Oklahoma University, Norman (1998)
Oklahoma State University, Stillwater (1998)
Southwest Research Institute, San Antonio, Texas (1998)
University of Bonn, Federal Republic of Germany (2002)
Technical University of Berlin (2002)
University of Rhode Island (2002)
Modine Manufacturing Company (2003)
University of Qatar, Doha (2006)
Technical University of Zurich_ETH (2006)
Trinity College, Dublin, Ireland (2009)

Reviewer:

National Science Foundation
National Research Council
Department of Energy

National Aeronautics and Space Administration
Journal of the American Institute of Chemical Engineers
Journal of the American Institute of Aeronautics and Astronautics
Journal of Quantitative Spectroscopy and Radiative Transfer
ASME Journal of Heat Transfer
ASME Journal of Solar Energy Engineering
AIAA Journal of Thermophysics and Heat Transfer
Solar Energy
International Journal of Heat and Mass Transfer
Review of Scientific Instruments
International Journal of Heat and Fluid Flow
Canadian Journal of Chemical Engineering
Wärme und Stoffübertragung
Experimental Thermal and Fluid Science
Metallurgical Transactions B
Experiments in Fluids
Numerical Heat Transfer
ASME Journal of Electronic Packaging
Experimental Heat Transfer
Journal of Materials Processing and Manufacturing Science
ASEE Journal of Engineering Education
ASME Journal of Engineering for Industry
ASME Journal of Manufacturing Science and Engineering
International Journal of Heat and Technology

Patents and/or Invention Disclosures:

Plasma Arc Scalpel, U.S. Dept. Commerce,
Patent No. 3,991,764, November 16, 1976.

Graduate Thesis Supervision:

Sixty-two (62) M.S. and thirty (30) Ph.D. theses have been completed in the general field of heat and mass transfer with applications to high temperature gas dynamics, bioengineering, energy conversion and utilization, electronic cooling, and materials processing. A list of students and thesis titles is provided in Appendix D.

Appendix A

SCHOLARLY WORKS

Refereed Journal Publications

1. Incropera, F.P. and G. Leppert, "Flow Transition Phenomena in a Subsonic Plasmajet," *Journal of American Institute of Aeronautics and Astronautics 4*, 1087-1088, 1966.

2. Incropera, F.P. and G. Leppert, "Investigation of Arc Jet Temperature Measurement Techniques," *ISA Transactions 6*, 34-41, 1967.

3. Incropera, F.P. and G. Leppert, "Laminar Flow Heat Transfer from an Argon Plasma in a Circular Tube," *Int. J. Heat Mass Transfer 10*, 1861-1873, 1967.

4. Bower, W.W. and F.P. Incropera, "Heat Transfer, Development Length, and Friction Factor Correlations for the Asymptotic Region of a Laminar Arc Constrictor," *Wärme und Stoffübertragung 2*, 150-162, 1969.

5. Incropera, F.P. and R.L. Kingsbury, "The Feasibility of Wall Parameter Correlations for Internal, Field-Free Plasma Flows," *Int. J. Heat Mass Transfer 12*, 1641-1659, 1969.

6. Incropera, F.P. and J.R. Viegas, "Nonequilibrium in an Arc Constrictor," *Journal of American Institute of Aeronautics and Astronautics 8*, 1722-1724, 1970.

7. Giannaris, R.J. and F.P. Incropera, "Nonequilibrium Effects in an Atmospheric Argon Arc Plasma," *J. Quant. Spectrosc. Radiat. Transfer 11*, 291-307, 1970.

8. Lukens, L.A. and F.P. Incropera, "Anode Heat Transfer in a Constricted Tube Arc," *Journal of American Institute of Aeronautics and Astronautics 9*, 2453-2454, 1971.

9. Clark, K.J. and F.P. Incropera, "Thermochemical Nonequilibrium in an Argon Constricted Arc Plasma," *Journal of American Institute of Aeronautics and Astronautics 10*, 17-18, 1972.

10. Lukens, L.A. and F.P. Incropera, "A Technique for Delineating Convective and Radiative Wall Heat Fluxes," *Journal of American Institute of Aeronautics and Astronautics 10*, 359-361, 1972.

11. Link, W.J. and F.P. Incropera, "Experimental Heat Transfer Distribution in an Arc Constrictor of Variable Area," *Int. J. Heat Mass Transfer 15*, 873-875, 1972.

12. Lukens, L.A. and F.P. Incropera, "Electric Field Intensity and Wall Heat Transfer Measurements for the Heating Region of an Atmospheric Cascade Arc," *Int. J. Heat Mass Transfer 15*, 935-951, 1972.

13. Incropera, F.P. and E.S. Murrer, "Spectroscopic Measurements for Atmospheric Nitrogen and Helium Arcs," *J. Quant. Spectrosc. Radiat. Transfer 12*, 1369-1377, 1972.

14. Bower, W.W. and F.P. Incropera, "Numerical Calculations for the Turbulent Arc Constrictor," *Journal of American Institute of Aeronautics and Astronautics 10*, 1662-1666, 1972.

15. Giannaris, R.J. and F.P. Incropera, "Radiative and Collisional Effects in a Cylindrically Confined Plasma - I. Optically Thin Considerations," *J. Quant. Spectrosc. Radiat. Transfer 13*, 167-181, 1973.

16. Giannaris, R.J. and F.P. Incropera, "Radiative and Collisional Effects in a Cylindrically Confined Plasma - II. Absorption Effects," *J. Quant. Spectrosc. Radiat. Transfer 13*, 183-195, 1973.

17. Link, W.J., Glover, J.L., Edwards, J.L., Henderson, M.R., Yaw, P.B. and F.P. Incropera, "Wound Healing of Mouse Skin Incised with a Plasma Scalpel," *J. Surgical Research 14*, 1973.

18. Incropera, F.P., "Procedures for Modeling Laminar Cascade Arc Behavior," *IEEE Transactions of Plasma Science PS-1*, 3-9, 1973.

19. Lee, J.B., Incropera, F.P. and R.C. Peterson, "Measurement of Arc Radiation for Selected Spectral Regions," *Journal of American Institute of Aeronautics and Astronautics 11*, 1455-1456, 1973.

20. Lee, J.B. and F.P. Incropera, "Spectral Distribution of Radiation from the Cascade Arc Plasma," *J. Quant. Spectrosc. Radiat. Transfer 13*, 1539-1552, 1973.

21. Scott, R.K. and F.P. Incropera, "Nonequilibrium Flow Calculations for the Hydrogen Constricted Arc," *Journal of American Institute of Aeronautics and Astronautics 11*, 1714-1719, 1973.

22. Weirich, W.E., Smith, C.R., Incropera, F.P. and I. Mandelbaum, "Hypothermia for Cardiac Arrest Surgery in the Dog," *J. American Animal Hospital Association 9*, 540-547, 1973.

23. Kach, E.A. and F.P. Incropera, "Induction Thermocoagulation: Thermal Response and Lesion Size," *IEEE Transactions of Biomedical Engineering BME-21*, 8-12, 1974.

24. Greene, C.S., Incropera, F.P. and K.J. Daniel, "Thermal Properties of Krypton and Xenon Laminar Arc Plasmas," *Int. J. Heat Mass Transfer 17*, 370-372, 1974.

25. Incropera, F.P., Henderson, M.R. and W.J. Link, "A Model for Tissue Response to High Intensity Energy Sources," *Medical and Biological Engineering 12*, 199-207, 1974.

26. Henderson, M.R., Link, W.J., Incropera, F.P. and J.L. Glover, "Gas Transport Resulting from Plasma-Scalpel Surgery," *Medical and Biological Engineering 12*, 208-213, 1974.

27. Incropera, F.P., "Leaf Photosynthesis: The Influence of Environmental Variables," *J. Environ. Quality 4*, 440-447, 1975.

28. Link, W.J., Incropera, F.P. and J.L. Glover, "A Plasma Scalpel: Comparison of Tissue Damage and Wound Healing with Electrosurgical and Steel Scalpels," *Archives of Surgery 111*, 392-397, 1976.

29. Mauck, G.W., Smith, C.R., Incropera, F.P. and W.E. Weirich, "An Experimental and Theoretical Investigation of Hypothermia in Dogs," *ASME Transactions, J. Biomechanical Engineering*, 195-202, 1977.

30. Incropera, F.P. and J.F. Thomas, "A Model for Solar Radiation Conversion to Algae in a Shallow Pond," *Solar Energy 20*, 157-165, 1978.

31. Yaghoubi, M.A. and F.P. Incropera, "Natural Convection from a Heated Horizontal Cylinder Submerged in a Shallow Water Layer," *Proc. Sixth International Heat Transfer Conf.*, Toronto, Vol. 2, NC-15, 269-274, 1978.

32. Collins, C.E., Incropera, F.P. and C.P.L. Grady, "The Effect of Temperature Control on Biological Wastewater Treatment," *Water Research 12*, 547-554, 1978.

33. Daniel, K.J., Laurendeau, N.M. and F.P. Incropera, "Comparison of Predictions with Measurements for Radiative Transfer in an Algal Suspension," *Int. J. Heat Mass Transfer 21*, 1379-1384, 1978.

34. Privoznik, K.G., Daniel, K.J. and F.P. Incropera, "Absorption, Extinction and Phase Function Measurements for Algal Suspensions of Chlorella Pyrenoidosa," *J. Quant. Spectrosc. Radiat. Transfer 20*, 345-352, 1978.

35. Incropera, F.P. and K.G. Privoznik, "Radiative Property Measurements for Selected Water Suspensions," *Water Resources Research 15*, 85-89, 1979.

36. Daniel, K.J., Laurendeau, N.M. and F.P. Incropera, "Prediction of Radiation Absorption and Scattering in Turbid Water Bodies," *ASME Transactions, J. Heat Transfer 101*, 63-67, 1979.

37. Incropera, F.P. and W.G. Houf, "A Three-Flux Method for Predicting Radiative Transfer in Aqueous Suspensions," *ASME Transactions, J. Heat Transfer 101*, 496-501, 1979.

38. Incropera, F.P. and M.A. Yaghoubi, "Free Convection Heat Transfer from Heated Cylinders Immersed in a Shallow Water Layer," *ASME Transactions, J. Heat Transfer 101*, 743-745, 1979.

39. Houf, W.G. and F.P. Incropera, "An Assessment of Techniques for Predicting Radiation Transfer in Aqueous Media," *J. Quant. Spectrosc. Radiat. Transfer 23*, 101-115, 1980.

40. Incropera, F.P. and M.A. Yaghoubi, "Buoyancy Driven Flows Originating from Heated Cylinders Submerged in a Finite Water Layer," *Int. J. Heat Mass Transfer 23*, 269-278, 1980.

41. Wagner, T.R., Incropera, F.P. and W.G. Houf, "Visible Radiation Transfer in a Black Ink Suspension," *ASME Transactions, J. Heat Transfer 102*, 709-714, 1980.

42. Yaghoubi, M.A. and F.P. Incropera, "Analysis of Natural Convection due to Localized Heating in a Shallow Water Layer," *Numerical Heat Transfer 3*, 315-329, 1980.

43. Wagner, T.R. and F.P. Incropera, "Radiative Property Measurements for India Ink Suspensions of Varying Concentration," *Solar Energy 25*, 549-554, 1980.

44. Incropera, F.P., Wagner, T.R. and W.G. Houf, "A Comparison of Predictions and Measurements of the Radiation Field in a Shallow Water Layer," *Water Resources Research 17*, 142-148, 1981.

45. Bennon, W.D. and F.P. Incropera, "Mixed Convection Heat Transfer from Horizontal Cylinders in a Finite Water Flow," *ASME Transactions, J. Heat Transfer 103*, 540-545, 1981.

46. Poplawsky, C.J., Incropera, F.P. and R. Viskanta, "Mixed Layer Development in a Double-Diffusive Thermohaline System," *ASME Transactions, J. Solar Energy Engineering 103*, 351-359, 1981.

47. Lewis, W.T., Incropera, F.P. and R. Viskanta, "Interferometric Study of Stable Salinity Gradients Heated from Below or Cooled from Above," *J. Fluid Mechanics 116*, 411-430, 1982.

48. Lewis, W.T., Incropera, F.P. and R. Viskanta, "Interferometric Study of Mixing Layer Development in a Laboratory Simulation of Solar Pond Conditions," *Solar Energy 28*, 389-401, 1982.

49. Stoddard, M.C. and F.P. Incropera, "Distribution of Solar Radiation in Natural Waters under Field Conditions," *Solar Energy 28*, 425-432, 1982.

50. Incropera, F.P. and R. Viskanta, "Optical Studies of Mixed Layer Development in a Double-Diffusive, Thermohaline System," *Proc. Seventh International Heat Transfer Conference*, Hemisphere Publishing Corporation, Vol. 2, 419-424, 1982.

51. Bergman, T.L., Incropera, F.P. and R. Viskanta, "A Multi-Layer Model for Mixing Layer Development in a Double-Diffusive, Thermohaline System Heated from Below," *Int. J. Heat Mass Transfer 25*, 1411-1418, 1982.

52. Bergman, T.L., Houf, W.G. and F.P. Incropera, "Effect of Single Scatter Phase Function Distribution on Radiative Transfer in Absorbing-Scattering Liquids, *Int. J. Heat Mass Transfer 26*, 101-107, 1983.

53. Wang, G.S., Incropera, F.P. and R. Viskanta, "Experimental Study of Mixed Convection Heat Transfer in a Horizontal Open Channel Flow with Uniform Bottom Heat Flux," *ASME Transactions, J. Heat Transfer 105*, 817-822, 1983.

54. Matthews, L.K., Viskanta, R. and F.P. Incropera, "Development of Inverse Methods for Determining Thermophysical and Radiative Properties of High Temperature Fibrous Materials," *Int. J. Heat Mass Transfer 27*, 487-496, 1984.

55. Craig, T.D. and F.P. Incropera, "Radiation Transfer in Absorbing-Scattering Liquids: I. Radiance and Flux Measurements," *J. Quant. Spectrosc. Radiat. Transfer 31*, 127-137, 1984.

56. Incropera, F.P., Craig, T.D. and W.G. Houf, "Radiation Transfer in Absorbing-Scattering Liquids: II. Comparisons of Measurements with Predictions,*" J. Quant. Spectrosc. Radiat. Transfer 31*, 139-147, 1984.

57. Voelkel, D.D. and F.P. Incropera, "Performance Model for a Radiation Recuperator," *Heat Transfer Engineering 5*, 74-84, 1984.

58. Houf, W.G., Incropera, F.P. and R. Viskanta, "Effect of Solar Radiation on Thermal and Hydrodynamic Conditions in Laminar, Open Channel Flow,*" ASME Transactions, J. Solar Energy Engineering 106*, 475-482, 1984.

59. Zumbrunnen, D.A., Viskanta, R. and F.P. Incropera, "Heat Transfer through Granular Beds at High Temperature," *Wärme und Stoffübertragung 18*, 221-226, 1984.

60. Houf, W.G., Incropera, F.P. and R. Viskanta, "Thermal Conditions in Irradiated Slowly Moving Liquid Layers," *ASME Transactions, J. Heat Transfer 107*, 92-98, 1985.

61. Matthews, L.K., Viskanta, R. and F.P. Incropera, "Combined Conduction and Radiation Heat Transfer in Porous Materials Heated by Intense Solar Radiation,*" ASME Transactions, J. Solar Energy Engineering 107*, 29-34, 1985.

62. Osborne, D.G. and F.P. Incropera, "Laminar, Mixed Convection Heat Transfer for Flow between Horizontal Parallel Plates with Asymmetric Heating," *Int. J. Heat Mass Transfer 28*, 207-218, 1985.

63. Bergman, T.L., Incropera, F.P. and W.H. Stevenson, "Use of a Miniature Fiber Optic Refractometer for Measurement of Salinity in Double-Diffusive Thermohaline Systems,*" Review of Scientific Instruments 56*, 291-296, 1985.

64. Bergman, T.L., Incropera, F.P. and R. Viskanta, "A Differential Model for Salt-Stratified, Double-Diffusive Systems Heated from Below," *Int. J. Heat Mass Transfer 28*, 779-788, 1985.

65. Osborne, D.G. and F.P. Incropera, "Experimental Study of Mixed Convection Heat Transfer for Transitional and Turbulent Flow between Horizontal, Parallel Plates," *Int. J. Heat Mass Transfer 28*, 1337-1344, 1985.

66. Incropera, F.P., Prescott, P.J. and D.D. Voelkel, "Hybrid Systems for Furnace Waste Heat Recovery: I. Use of a Radiation Recuperator with a Rankine Cycle," *Heat Recovery Systems 5*, 321-330, 1985.

67. Prescott, P.J. and F.P. Incropera, "Hybrid Systems for Furnace Waste Heat Recovery: II. Convection Recuperators and a Rankine Cycle," *Heat Recovery Systems 5*, 331-339, 1985.

68. Ramadhyani, S., Moffatt, D.W. and F.P. Incropera, "Conjugate Heat Transfer from Small Isothermal Heat Sources Embedded in a Large Substrate," *Int. J. Heat Mass Transfer 28*, 1945-1952, 1985.

69. Bergman, T.L., Incropera, F.P. and R. Viskanta, "Parameterization of System Behavior for Salt-Stratified Solutions Heated from Below with and without Salinity-Maintained Mixed Layers," *Int. J. Heat Mass Transfer 28*, 1617-1621, 1985.

70. Incropera, F.P. and J.A. Schutt, "Numerical Simulation of Laminar, Mixed Convection in the Entrance Region of Horizontal, Rectangular Ducts," *Numerical Heat Transfer 8*, 707-729, 1985.

71. Zumbrunnen, D.A., Viskanta, R. and F.P. Incropera, "Heat Transfer through Porous Solids with Complex Internal Geometries," *Int. J. Heat Mass Transfer 29*, 275-284, 1986.

72. Bergman, T.L., Incropera, F.P. and R. Viskanta, "Correlation of Mixed Layer Growth in a Double-Diffusive, Salt-Stratified System Heated from Below," *ASME Transactions, J. Heat Transfer 108*, 206-211, 1986.

73. Lents, C.L., Incropera, F.P. and R. Viskanta, “Application of Heated Thermistors to Speed Measurements in Thermohaline Solutions," *Solar Energy 36*, 179-186, 1986.

74. Bergman, T.L., Incropera, F.P. and R. Viskanta, "Transient Behavior of a Radiatively Heated Double-Diffusive System," *ASME Transactions, J. Heat Transfer 108*, 317-322, 1986.

75. Incropera, F.P., Lents, C.E. and R. Viskanta, "Gradient Layer Entrainment in a Double-Diffusive Thermohaline System with Mixed Layer Circulation," *ASME Transactions, J. Solar Energy Engineering 108*, 267-274, 1986.

76. Vader, D.T., Viskanta, R. and F.P. Incropera, "Design and Testing of a High Temperature Emissometer for Porous and Particulate Dielectrics," *Review of Scientific Instruments 57*, 87-93, 1986.

77. Incropera, F.P., Kerby, J.S., Moffatt, D.F. and S. Ramadhyani, "Convection Heat Transfer from Discrete Heat Sources in a Rectangular Channel," *Int. J. Heat Mass Transfer 29*, 1051-1058, 1986.

78. Incropera, F.P., Knox, A.L. and J.A. Schutt, "Onset of Thermally Driven Secondary Flow in Horizontal Rectangular Channels," *Proc. Eighth International Heat Transfer Conference*, C.L. Tien, V.P. Carey and J.K. Ferrell, Eds., Hemisphere Publishing Corp., Vol.3, 1395-1400, 1986.

79. Ciampi, M., Faggiani, S., Grassi, W., Incropera, F.P. and G. Tuoni, "Experimental Study of Mixed Convection in Horizontal Annuli for Low Reynolds Numbers," *Proc. Eighth International Heat Transfer Conference*, C.L. Tien, V.P. Carey and J.K. Ferrell, Eds., Hemisphere Publishing Corp., Vol.3, 1413-1418, 1986.

80. Bergman, T.L., Munoz, D.R., Incropera, F.P. and R. Viskanta, "Measurement of Salinity Distributions in Salt-Stratified, Double-Diffusive Systems by Optical Deflectometry," *Review of Scientific Instruments 57*, 2538-2542, 1986.

81. Bergman, T.L., Incropera, F.P. and R. Viskanta, "Interaction of External and Double-Diffusive Convection in Linearly Salt-Stratified Systems," *Experiments in Fluids 5*, 49-58, 1987.

82. Anderson, D.W., Viskanta, R. and F.P. Incropera, "Effective Thermal Conductivity of Coal Ash Deposits at Moderate to High Temperatures," *ASME Transactions, J. Engineering for Gas Turbines and Power 109*, 215-221, 1987.

83. Bergman, T.L., Ungan, A., Incropera, F.P., and R. Viskanta, "Mixed Layer Development in a Salt-Stratified Solution Destabilized by a Discrete Heat Source," *ASME Transactions, J. Heat Transfer 109*, 802-803, 1987.

84. Ciampi, M., Faggiani, S., Grassi, W., Tuoni, G. and F.P. Incropera, "Mixed Convection Heat Transfer in Horizontal Concentric Annuli," *Int. J. Heat Mass Transfer 30*, 833-842, 1987.

85. Incropera, F.P., Knox, A.L. and J.R. Maughan, "Mixed Convection Flow and Heat Transfer in the Entry Region of a Horizontal Rectangular Duct," *ASME Transactions, J. Heat Transfer 109*, 434-439, 1987.

86. Maughan, J.R. and F.P. Incropera, "Secondary Flow in Horizontal Channels Heated from Below," *Experiments in Fluids 5*, 334-343, 1987.

87. Maughan, J.R. and F.P. Incropera, "Mixed Convection Heat Transfer for Airflow in a Horizontal and Inclined Channel," *Int. J. Heat Mass Transfer 30*, 1307-1318, 1987.

88. Mudawwar, I.A., Incropera, T.A. and F.P. Incropera, "Boiling Heat Transfer and Critical Heat Flux in Liquid Films Falling on Vertically Mounted Surfaces," *Int. J. Heat Mass Transfer 30*, 2083-2095, 1987.

89. Mahaney, H.V., Incropera, F.P. and S. Ramadhyani, "Development of Laminar Mixed Convection Flow in a Horizontal Rectangular Duct with Uniform Bottom Heating," *Numerical Heat Transfer 12*, 137-155, 1987.

90. Bennon, W.D. and F.P. Incropera, "A Continuum Model for Momentum, Heat and Species Transport in Binary Solid-Liquid Phase Change Systems: I. Model Formulation," *Int. J. Heat Mass Transfer 30*, 2161-2170, 1987.

91. Bennon, W.D. and F.P. Incropera, "A Continuum Model for Momentum Heat and Species Transport in Binary Solid Liquid Phase Change Systems: II. Application to Solidification in a Rectangular Cavity," *Int. J. Heat Mass Transfer 30*, 2171-2187, 1987.

92. Neilson, D.G. and F.P. Incropera, "Double-Diffusive Flow and Heat Transfer for a Cylindrical Source Submerged in a Salt-Stratified Solution," *Int. J. Heat Mass Transfer 30*, 2559-2570, 1987.

93. Bennon, W.D. and F.P. Incropera, "The Evolution of Macrosegregation in Statically Cast Binary Ingots," *Metallurgical Transactions B 18B*, 611-616, 1987.

94. Grimley, T.A., Mudawwar, I.A. and F.P. Incropera, "CHF Enhancement in Flowing Fluorocarbon Liquid Films using Structured Surfaces and Flow Deflectors," *Int. J. Heat Mass Transfer 31*, 55-65, 1988.

95. Munoz, D.R., Zangrando, F., Viskanta, R. and F.P. Incropera, "Gradient Layer Entrainment Correlation for a Salt Gradient Solar Pond with Storage Layer Recirculation," *ASME Transactions, J. Solar Energy Engineering 110*, 248-254, 1988.

96. Bennon, W.D. and F.P. Incropera, "Developing Laminar Mixed Convection with Solidification in a Vertical Channel," *ASME Transactions, J. Heat Transfer 110*, 410-415, 1988.

97. Neilson, D.G. and F.P. Incropera, "Local Heat Transfer from a Horizontal Cylinder in Unstratified and Salt-Stratified Fluid Layers," *Int. J. Heat Mass Transfer 31*, 660-663, 1988.

98. Grimley, T.A., Mudawwar, I. and F.P. Incropera, "Upper Limits to Critical Heat Flux Enhancement in a Falling Liquid Film," *ASME Transactions, J. Heat Transfer 110*, 535-538, 1988.

99. Bennon, W.D. and F.P. Incropera, "Numerical Analysis of Binary Solid-Liquid Phase Change using a Continuum Model," *Numerical Heat Transfer 13*, 277-296, 1988.

100. Mahaney, H.V., Incropera, F.P. and S. Ramadhyani, "Effect of Wall Heat Flux Distribution on Laminar Mixed Convection in the Entrance Region of a Horizontal Duct," *Numerical Heat Transfer 13*, 427-450, 1988.

101. Bennon, W.D. and F.P. Incropera, "Numerical Simulation of Binary Solidification in a Vertical Channel with Thermal and Solutal Mixed Convection," *Int. J. Heat Mass Transfer, 31*, 2147-2160, 1988.

102. Incropera, F.P., "Convection Heat Transfer in Electronic Equipment Cooling," *ASME Transactions, J. Heat Transfer 110*, 1097-1111, 1988.

103. Brinkman, R., Ramadhyani, S., and F.P. Incropera, "Enhancement of Convective Heat Transfer from Small Heat Sources to Liquid Coolants Using Strip Fins," *Experimental Heat Transfer 1*, 315-330, 1988.

104. Christenson, M.S. and F.P. Incropera, "Solidification of an Aqueous Ammonium Chloride Solution in a Rectangular Cavity-I. Experimental Study," *Int. J. Heat Mass Transfer 32*, 47-68, 1989.

105. Christenson, M.S., Bennon, W.D. and F.P. Incropera, "Solidification of an Aqueous Ammonium Chloride Solution in a Rectangular Cavity-II. Comparison of Predicted and Measured Results," *Int. J. Heat Mass Transfer 32*, 69-80, 1989.

106. Zumbrunnen, D.A., Viskanta, R. and F.P. Incropera, "The Effect of Surface Motion on Heat Transfer by Forced Convection Film Boiling," *ASME Transactions, J. Heat Transfer 111*, 760-766, 1989.

107. Bennon, W.D. and F.P. Incropera, "An Experimental Investigation of Binary Solidification in a Vertical Channel with Thermal and Solutal Mixed Convection," *ASME Transactions, J. Heat Transfer 111*, 706-712, 1989.

108. Christenson, M.S. and F.P. Incropera, "Experiments on Solidification of an Aqueous Sodium Carbonate Solution in a Horizontal Cylindrical Cavity," *ASME Transactions, J. Heat Transfer 111*, 998-1005, 1989.

109. Zumbrunnen, D.A., Incropera, F.P. and R. Viskanta, "Convective Heat Transfer Distribution on a Plate Cooled by a Planar Water Jet," *ASME Transactions, J. Heat Transfer 111*, 889-896, 1989.

110. Incropera, F.P., Engel, A.H.H. and W.D. Bennon, "Numerical Analysis of Binary Solid-Liquid Phase Change with Buoyancy and Surface Tension Driven Convection," *Numerical Heat Transfer, 16*, Part A, 407-427, 1989.

111. Engel, A.H.H. and F.P. Incropera, "Solidification of a Binary Mixture in a Square Cavity with a Free Surface," *Wärme und Stoffübertragung 24*, 279-288, 1989.

112. Mahaney, H.V., Ramadhyani, S. and F.P. Incropera, "Numerical Simulation of Three-Dimensional Mixed Convection Heat Transfer from an Array of Discrete Heat Sources in a Horizontal Rectangular Duct," *Numerical Heat Transfer 16*, Part A, 267-286, 1989.

113. Zumbrunnen, D.A., Incropera, F.P. and R. Viskanta, "A Method and Apparatus for Measuring Heat Transfer Distributions on Moving and Stationary Plates Cooled by a Planar Jet," *Experimental Thermal and Fluid Science 3*, 202-213, 1990.

114. Neilson, D.G., Incropera, F.P. and W.D. Bennon, "Numerical Simulation of Solidification in a Horizontal Cylindrical Annulus Charged with an Aqueous Salt Solution," *Int. J. Heat Mass Transfer 33*, 367-380, 1990.

115. Maughan, J.R. and F.P. Incropera, "Regions of Heat Transfer Enhancement for Laminar Mixed Convection in a Parallel Plate Channel," *Int. J. Heat Mass Transfer 33*, 555-570, 1990.

116. Mahaney, H.V., Incropera, F.P. and S. Ramadhyani, "Comparison of Predicted and Measured Mixed Convection Heat Transfer from an Array of Discrete Heat Sources in a Horizontal Rectangular Channel," *Int. J. Heat Mass Transfer 33*, 1233-1245, 1990.

117. Maughan, J.R. and F.P Incropera, "Mixed Convection Heat Transfer with Longitudinal Fins in a Horizontal Parallel Plate Channel - I. Numerical Results," *ASME Transactions, J. Heat Transfer 112*, 612-618, 1990.

118. Maughan, J.R. and F.P. Incropera, "Mixed Convection Heat Transfer with Longitudinal Fins in a Horizontal Parallel Plate Channel - II. Experimental Results," *ASME Transactions, J. Heat Transfer 112*, 619-624, 1990.

119. Maughan, J.R. and F.P. Incropera, "Fully Developed Mixed Convection in a Horizontal Channel Heated Uniformly from Above and Below," *Numerical Heat Transfer 17*, 417-430, 1990.

120. Campbell, J.S. and F.P. Incropera, "Mixed Convection Solidification in a Vertical Parallel Plate Channel," *Proc. Ninth International Heat Transfer Conference*, G. Hetsroni, Ed., Hemisphere Publishing Corp., Vol. 4, 311-316, 1990.

121. Womac, D.J., Aharoni, G., Ramadhyani, S. and F.P. Incropera, "Single Phase Liquid Jet Impingement Cooling of Small Heat Sources," *Proc. Ninth International Heat Transfer Conference*, G. Hetsroni, Ed., Hemisphere Publishing Corp., Vol. 4, 149-154, 1990.

122. Wolf, D.H., Viskanta, R. and F.P. Incropera, "Local Convective Heat Transfer from a Heated Surface to a Planar Jet of Water with a Nonuniform Velocity Profile," *ASME Transactions, J. Heat Transfer 112*, 899-905, 1990.

123. Mahaney, H.V., Incropera, F.P. and S. Ramadhyani, "Measurement of Mixed Convection Heat Transfer from an Array of Discrete Sources in a Horizontal Rectangular Channel with and without Surface Augmentation," *Experimental Heat Transfer 3*, 215-237, 1990.

124. Incropera, F.P. and J.S. Campbell, "Effect of Orientation on Solidification for Mixed Convection Flow in a Rectangular Channel," *Experimental Heat Transfer 3*, 377-396, 1990.

125. Vader, D.T., Incropera, F.P. and R. Viskanta, "A Method for Measuring Steady, Local Heat Transfer to an Impinging Liquid Jet," *Experimental Thermal and Fluid Science 4*, 1-11, 1991.

126. Vader, D.T., Incropera, F.P. and R. Viskanta, "Local Convective Heat Transfer from a Heated Surface to an Impinging Planar Jet of Water," *Int. J. Heat Mass Transfer 34*, 611-624, 1991.

127. Maughan, J.R. and F.P. Incropera, "Use of Vortex Generators and Ribs for Heat Transfer Enhancement at the Top Surface of a Uniformly Heated Horizontal Channel with Mixed Convection Flow," *ASME Transactions, J. Heat Transfer 113*, 504-507, 1991.

128. Mahaney, H.V., Ramadhyani, S. and F.P. Incropera, "Numerical Simulation of Three-Dimensional Mixed Convection Heat Transfer from a Finned Array of Discrete Heat Sources," *Numerical Heat Transfer 19*, 125-150, 1991.

129. Neilson, D.G. and F.P. Incropera, "Unidirectional Solidification of a Binary Alloy and the Effects of Induced Fluid Motion," *Int. J. Heat Mass Transfer 34*, 1717-1733, 1991.

130. Besserman, D.L., Incropera, F.P. and S. Ramadhyani, "Experimental Study of Heat Transfer from a Discrete Source to a Circular Liquid Jet with Annular Collection of the Spent Fluid," *Experimental Heat Transfer 4*, 41-58, 1991.

131. Prescott, P.J., Incropera, F.P. and W.D. Bennon, "Modeling of Dendritic Solidification Systems: Reassessment of the Continuum Momentum Equation," *Int. J. Heat Mass Transfer 34*, 2351-2360, 1991.

132. Prescott, P.J. and F.P. Incropera, "Numerical Simulation of a Solidifying Pb-Sn Alloy: The Effects of Cooling Rate on Thermosolutal Convection and Macrosegregation," *Metallurgical Transactions 22B*, 529-540, 1991.

133. Besserman, D.L., Ramadhyani, S. and F.P. Incropera, "Numerical Simulation of Laminar Flow and Heat Transfer for Liquid Jet Impingement Cooling of a Circular Heat Source with Annular Collection of the Spent Fluid," *Numerical Heat Transfer 20*, 263-278, 1991.

134. Schafer, D.M., Incropera, F.P. and S. Ramadhyani, "Planar Liquid Jet Impingement Cooling of Multiple Discrete Heat Sources," *ASME Transactions, J. Electronic Packaging 113*, 359-366, 1991.

135. Neilson, D.G. and F.P. Incropera, "Numerical Study of the Effects of Transport Phenomena on Macrosegregation during Unidirectional Solidification of a Binary Substance," *Wärme und Stoffübertragung 27*, 1-10, 1992.

136. Besserman, D.L., Incropera, F.P. and S. Ramadhyani, "Heat Transfer from a Square Source to an Impinging Liquid Jet Confined by an Annular Wall," *ASME Transactions, J. Heat Transfer 114*, 284-287, 1992.

137. Zumbrunnen, D.A., Incropera, F.P. and R. Viskanta, "A Laminar Boundary Layer Model of Heat Transfer due to a Nonuniform Planar Jet Impinging on a Moving Plate," *Wärme und Stoffübertragung 27*, 311-319, 1992.

138. Vader, D.T., Incropera, F.P. and R. Viskanta, "Convective Nucleate Boiling on a Heated Surface Cooled by an Impinging Planar Jet of Water," *ASME Transactions, J. Heat Transfer 114*, 152-160, 1992.

139. Heindel, T.J., Incropera, F.P. and S. Ramadhyani, "Liquid Immersion Cooling of a Longitudinal Array of Discrete Heat Sources in Protruding Substrates: I. Single-Phase Convection," *ASME Transactions, J. Electronic Packaging 114*, 55-62, 1992.

140. Heindel, T.J., Ramadhyani, S. and F.P. Incropera, "Liquid Immersion Cooling of a Longitudinal Array of Discrete Heat Sources in Protruding Substrates: II. Forced Convection Boiling," *ASME Transactions, J. Electronic Packaging 114*, 63-70, 1992.

141. Schafer, D.M., Ramadhyani, S. and F.P. Incropera, "Numerical Simulation of Laminar Convection Heat Transfer from an In-Line Array of Discrete Sources to a Confined Rectangular Jet," *Numerical Heat Transfer 22*, 121-142, 1992.

142. Filipovic, J., Viskanta, R., Incropera, F.P. and T.A. Veslocki, "Thermal Behavior of a Moving Steel Strip Cooled by an Array of Planar Water Jets," *Steel Research 63*, 438-446, 1992.

143. Filipovic, J., Viskanta, R. and F.P. Incropera, "Analysis of Momentum and Heat Transfer for Turbulent Fluid Flow over a Moving Isothermal Surface," *J. Materials Processing and Manufacturing Science 1*, 157-168, 1992.

144. Filipovic, J., Viskanta, R. and F.P. Incropera, "A Parametric Study of the Accelerated Cooling of Steel Strip," *Steel Research 63*, 496-499, 1992.

145. Womac, D.J., Ramadhyani, S. and F.P. Incropera, "Correlating Equations for Impingement Cooling of Small Heat Sources with Single Circular Liquid Jets," *ASME Transactions, J. Heat Transfer 115*, 106-115, 1993.

146. Neilson, D.G. and F.P. Incropera, "Three-Dimensional Considerations of Unidirectional Solidification in a Binary Liquid," *Numerical Heat Transfer Part A 23*, 1-20, 1993.

147. Neilson, D.G. and F.P. Incropera, "Effect of Rotation on Fluid Motion and Channel Formation during Unidirectional Solidification of a Binary Alloy," *Int. J. Heat Mass Transfer 36*, 489-505, 1993.

148. Prescott, P.J. and F.P. Incropera, "Magnetically Damped Convection During Solidification of a Binary Metal Alloy," *ASME Transactions, J. Heat Transfer 115*, 302-310, 1993.

149. Polentini, M.S., Ramadhyani, S. and F.P. Incropera, "Single-Phase Thermosyphon Cooling of an Array of Discrete Heat Sources in a Rectangular Cavity," *Int. J. Heat Mass Transfer 36*, 3983-3996, 1993.

150. Incropera, F.P., "Solidification of Binary Liquids: Physical Phenomena and Consequences," *Journal of Energy, Heat and Mass Transfer 15*, 191-204, 1993.

151. Filipovic, J., Viskanta, R. and F.P. Incropera, "Similarity Solution for Laminar Film Boiling over a Moving Isothermal Surface," *Int. J. Heat Mass Transfer 36*, 2957-2963, 1993.

152. Magirl, C.S. and F.P. Incropera, "Flow and Morphological Conditions Associated with Unidirectional Solidification of Aqueous Ammonium Chloride," *ASME Transactions, J. Heat Transfer 115*, 1036-1043, 1993.

153. Neilson, D.G. and F.P. Incropera, "Experimental Study of Unidirectional Solidification of Aqueous Ammonium Chloride in a Cylindrical Mold with and without Rotation," *Experimental Heat Transfer 6*, 131-155, 1993.

154. Slayzak, S.J., Viskanta, R. and F.P. Incropera, "Effects of Interaction between Adjacent Free Surface Planar Jets on Local Heat Transfer from the Impingement Surface," *Int. J. Heat Mass Transfer 37*, 269-282, 1994.

155. Slayzak, S.J., Viskanta, R. and F.P. Incropera, "Effects of Interactions between Arrays of Circular, Free Surface Jets on Local Heat Transfer from the Impingement Surface," *ASME Transactions, J. Heat Transfer 116*, 88-95, 1994.

156. Womac, D.J., Incropera, F.P. and S. Ramadhyani, "Correlating Equations for Impingement Cooling of Small Heat Sources with Multiple Circular Liquid Jets," *ASME Transactions, J. Heat Transfer 116*, 482-486, 1994.

157. Incropera, F.P., "Cooling of Chips and Multi-Chip Modules," *Journal of Energy, Heat and Mass Transfer 16*, 119-131, 1994.

158. Prescott, P.J. and F.P. Incropera, "Convective Transport Phenomena and Macrosegregation During Solidification of a Binary Metal Alloy - I. Numerical Predictions," *ASME Transactions, J. Heat Transfer 116*, 735-741, 1994.

159. Prescott, P.J., Incropera, F.P. and D.R. Gaskell, "Convective Transport and Macrosegregation During Solidification of a Binary Metal Alloy - II. Experiments and Comparisons with Numerical Predictions," *ASME Transactions, J. Heat Transfer 116*, 742-749, 1994.

160. Magirl, C.S. and F.P. Incropera, "Multidirectional Solidification of an Aqueous Ammonium Chloride Solution," *Proc. Tenth International Heat Transfer Conference*, G.F. Hewitt, Ed., Taylor and Francis Publishers, Vol. 4, 79-84, 1994.

161. Filipovic, J., Viskanta, R. and F.P. Incropera, "An Analysis of Subcooled Turbulent Film Boiling on a Moving Isothermal Surface," *Int. J. Heat Mass Transfer 37*, 2661-2674, 1994.

162. Heindel, T.J., Ramadhyani, S. and F.P. Incropera, "An Assessment of Turbulence Models for Natural Convection in a Cavity," *Numerical Heat Transfer Part B 26*, 147-172, 1994.

163. Filipovic, J., Viskanta, R. and F.P. Incropera, "Cooling of a Moving Steel Strip by an Array of Round Jets," *Steel Research 65*, 541-547, 1994.

164. Wolf, D.H., Viskanta, R. and F.P. Incropera, "Turbulence Dissipation in a Free-Surface Jet of Water and Its Effect on Local Impingement Heat Transfer from a Heated Surface: Part 1 - Flow Structure," *ASME Transactions, J. Heat Transfer 117*, 85-94, 1995.

165. Wolf, D.H., Viskanta, R. and F.P. Incropera, "Turbulence Dissipation in a Free-Surface Jet of Water and Its Effect on Local Impingement Heat Transfer from a Heated Surface: Part 2 - Local Heat Transfer," *ASME Transactions, J. Heat Transfer 117*, 95-103, 1995.

166. Ni, J. and F.P. Incropera, "Extension of the Continuum Model for Transport Phenomena Occurring during Metal Alloy Solidification: Part 1 - The Conservation Equations," *Int. J. Heat Mass Transfer 38*, 1271-1284, 1995.

167. Ni, J. and F.P. Incropera, "Extension of the Continuum Model for Transport Phenomena Occurring during Metal Alloy Solidification: Part 2 - Microscopic Considerations," *Int. J. Heat Mass Transfer 38*, 1285-1296, 1995.

168. Wolf, D.H., Incropera, F.P. and R. Viskanta, "Measurement of the Turbulent Flow Field in a Free-Surface Jet of Water," *Experiments in Fluids 18*, 397-408, 1995.

169. Prescott, P.J. and F.P. Incropera, "The Effect of Turbulence on Solidification of a Binary Metal Alloy with Electromagnetic Stirring," *ASME Transactions, J. Heat Transfer 117*, 716-724, 1995.

170. Krane, M.J.M. and F.P. Incropera, "Analysis of the Effect of Shrinkage on Macrosegregation in Alloy Solidification," *Metallurgical Transactions 26A*, 2329-2339, 1995.

171. Slayzak, S.J., Viskanta, R. and F.P. Incropera, "Effect of Dissimilar Impingement Velocities on Local Heat Transfer for Adjacent Rows of Circular Free-Surface Jets," *ASME Transactions, J. Heat Transfer 117*, 1061-1064, 1995.

172. Heindel, T.J., Ramadhyani, S. and F.P. Incropera, "Laminar Natural Convection in a Discretely Heated Cavity: I. Assessment of Three-Dimensional Effects," *ASME Transactions, J. Heat Transfer 117*, 902-909, 1995.

173. Heindel, T.J., Incropera, F.P. and S. Ramadhyani, "Laminar Natural Convection in a Discretely Heated Cavity: II. Comparisons of Experimental and Theoretical Results," *ASME Transactions, J. Heat Transfer 117*, 910-917, 1995.

174. Filipovic, J., Incropera, F.P. and R. Viskanta, "Quenching Phenomena Associated with a Water Wall Jet: 1. Transient Hydrodynamic and Thermal Conditions," *Experimental Heat Transfer 8*, 97-117, 1995.

175. Filipovic, J., Incropera, F.P. and R. Viskanta, "Quenching Phenomena Associated with a Water Wall Jet: 2. Comparison of Experimental and Theoretical Results for the Film Boiling Region," *Experimental Heat Transfer 8*, 119-130, 1995.

176. Heindel, T.J., Ramadhyani, S. and F.P. Incropera, "Conjugate Natural Convection from an Array of Discrete Heat Sources: Part 1 - Two- and Three-Dimensional Model Validation," *Int. J. Heat and Fluid Flow 16*, 501-510, 1995.

177. Filipovic, J., Viskanta, R. and F.P. Incropera, "Subcooled Forced Boiling Heat Transfer – Physical Methods and Measurement Methods," *Journal of Thermal Science 4*, 245-267, 1995.

178. Heindel, T.J., Ramadhyani, S. and F.P. Incropera, "Conjugate Natural Convection from an Array of Discrete Heat Sources: Part 2 - A Numerical Parametric Study," *Int. J. Heat and Fluid Flow 16*, 511-518, 1995.

179. Filipovic, J., Incropera, F.P. and R. Viskanta, "Rewetting Temperatures and Velocity in a Quenching Experiment," *Experimental Heat Transfer 8*, 257-270, 1995.

180. Wolf, D.H., Incropera, F.P. and R. Viskanta, "Local Jet Impingement Boiling Heat Transfer," *Int. J. Heat Mass Transfer 39*, 1395-1406, 1996.

181. Heindel, T.J., Incropera, F.P. and S. Ramadhyani, "Enhancement of Natural Convection Heat Transfer from an Array of Discrete Heat Sources," *Int. J. Heat Mass Transfer 39*, 479-490, 1996.

182. Heindel, T.J., Ramadhyani, S. and F.P. Incropera, "Conjugate Natural Convection from an Array of Protruding Heat Sources," *Numerical Heat Transfer Part A 29*, 1-18, 1996.

183. Incropera, F.P. and R.W. Fox, "Revising a Mechanical Engineering Curriculum: The Implementation Process," *ASEE Journal of Engineering Education 3*, 233-238, 1996.

184. Krane, M.J.M. and F.P. Incropera, "A Scaling Analysis of the Unidirectional Solidification of a Binary Alloy," *Int. J. Heat Mass Transfer 39*, 3567-3579, 1996.

185. Prescott, P.J., Incropera, F.P. and D.R. Gaskell, "The Influence of Electromagnetic Stirring on the Solidification of a Binary Melt Alloy," *Experimental Heat Transfer 9*, 105-131, 1996.

186. Krane, M.J.M., Incropera, F.P. and D.R. Gaskell, "Solidification of Ternary Metal Alloys. Part I: Model Development," *Int. J. Heat Mass Transfer 40*, 3827-3835, 1997.

187. Krane, M.J.M. and F.P. Incropera, "Solidification of Ternary Metal Alloys. Part II: Prediction of Convective Phenomena and Solidification Behavior in Pb-Sb-Sn Alloys," *Int. J. Heat Mass Transfer 40*, 3837-3847, 1997.

188. Novak, J.W., Shin, Y.C. and F.P. Incropera, "Assessment of Plasma Enhanced Machining for Improved Machinability of Inconel 718," *ASME Transactions, J. Manufacturing Science and Engineering 119*, 125-129, 1997.

189. Pfefferkorn, F.E., Rozzi, J.C., Incropera, F.P. and Y.C. Shin, "Surface Temperature Measurement in Laser Assisted Machining Processes," *Experimental Heat Transfer 10*, 291-313, 1997.

190. Krane, M.J.M. and F.P. Incropera, "Experimental Validation of Continuum Mixture Model for Binary Alloy Solidification," *ASME Transactions, J. Heat Transfer 119*, 783-791, 1997.

191. Montgomery, W.C. and F.P. Incropera, "Fragmentation of Dendritic Crystals during Solidification of Aqueous Ammonium Chloride," *Experimental Heat Transfer 11*, 59-86, 1998.

192. Rozzi, J.C., Pfefferkorn, F.E., Incropera, F.P. and Y.C. Shin, "Transient Thermal Response of a Rotating Cylindrical Silicon Nitride Workpiece Subjected to a Translating Laser Heat Source: I – Comparison of Surface Temperature Measurements with Theoretical Results," *ASME Transactions, J. Heat Transfer 120*, 899-906, 1998.

193. Rozzi, J.C., Incropera, F.P. and Y.C. Shin, "Transient Thermal Response of a Rotating Cylindrical Silicon Nitride Workpiece Subjected to a Translating Laser Heat Source: II – Parametric Effects and Assessment of a Simplified Model," *ASME Transactions, J. Heat Transfer 120*, 907-915, 1998.

194. Krane, M.J.M., Incropera, F.P. and D.R. Gaskell, "Solidification of a Ternary Metal Alloy: A Comparison of Experimental Measurements and Model Predictions in a Pb-Sb-Sn System," *Metallurgical Transactions A 29A*, 843-853, 1998.

195. Lei, S., Shin, Y.C., and F.P. Incropera, "Thermo-Mechanical Model of Orthogonal Machining by Finite Element Analysis," *International Journal of Machine Tools and Manufacture 39*, 731-750, 1999.

196. Lei, S., Shin, Y.C. and F.P. Incropera, "Material Constitutive Modeling under High Strain Rates and Temperatures through Orthogonal Machining Tests," *ASME Transactions, J. Manufacturing Science and Engineering, 121*, 577-585, 1999.

197. Vreeman, C.J. and F.P. Incropera, "Numerical Discretization of Species Equation Source Terms in Binary Mixture Models of Solidification and their Impact on Macrosegregation in Semi-Continuous, Direct Chill Casting Systems," *Numerical Heat Transfer, Part B 36*, 1-14, 1999.

198. Vreeman, C.J., Krane, M.J.M. and F.P. Incropera, "The Effect of Free-Floating Dendrites and Convection on Macrosegregation in Direct Chill Cast Aluminum Alloys. Part 1: Model Development," *Int. J. Heat Mass Transfer, 43*, 677-686, 2000.

199. Vreeman, C.J. and F.P. Incropera, "The Effect of Free-Floating Dendrites and Convection on Macrosegregation in Direct Chill Cast Aluminum Alloys. Part 2: Predictions for Al-Cu and Al-Mg Alloys," *Int. J. Heat Mass Transfer, 43*, 687-704, 2000.

200. Rozzi, J.C., Pfefferkorn, F.E., Incropera, F.P. and Y.C. Shin, "Transient, Three-Dimensional Model for the Laser Assisted Machining of Silicon Nitride: I-Comparison of Predictions with Measured Surface Temperature Histories," *Int. J. Heat Mass Transfer, 43*, 1409-1424, 2000.

201. Rozzi, J.C., Incropera, F.P. and Y.C. Shin, "Transient, Three-Dimensional Model for the Laser Assisted Machining of Silicon Nitride: II-Assessment of Parametric Effects," *Int. J. Heat Mass Transfer, 43*,1425-1437, 2000.

202. Lei, S., Shin, Y. and F.P. Incropera, "Deformation Mechanisms and Constitutive Modeling for Silicon Nitride undergoing Laser-Assisted Machining," *Int. J. Machine Tools and Manufacture*, 40, 2213-2233, 2000.

203. Rozzi, J.C., Pfefferkorn, F.E., Incropera, F. P. and Y.C. Shin, "Experimental Evaluation of the Laser Assisted Machining of Silicon Nitride Ceramics," *ASME Transactions, J. Manufacturing Science and Engineering*, 122, 666-670, 2000.

204. Hall, D.E., Incropera, F.P. and R. Viskanta, "Jet Impingement Boiling from a Circular Free-Surface Jet during Quenching: I – Single-Phase Jet," *ASME Transactions, J. Heat Transfer 123*, 901-910, 2001.

205. Hall, D.E., Incropera, F.P. and R. Viskanta, "Jet Impingement Boiling from a Circular Free-Surface Jet during Quenching: II - Two-Phase Jet," *ASME Transactions, J. Heat Transfer 123*, 911-917, 2001.

206. Lei, S., Shin, Y.C. and F.P. Incropera, "Experimental Investigation of Thermo-Mechanical Characteristics in Laser-Assisted Machining of Silicon Nitride Ceramics," *ASME Transactions, J. Manufacturing Science and Engineering, 123*, 639-646, 2001.

207. Rebro, P.A., Shin, Y.C. and F.P. Incropera, "Laser-Assisted Machining of Reaction Sintered Mullite Ceramics," *ASME Transactions, J. Manufacturing Science and Engineering, 124*, 875-885, 2002.

208. Pfefferkorn, F.E., Incropera, F.P. and Y.C. Shin, "Surface Temperature Measurement of Semi-Transparent Ceramics by Long-Wavelength Pyrometry," *ASME Transactions, J. Heat Transfer, 125*, 48-56, 2003.

209. Pfefferkorn, F.E., Shin, Y.C., Tian, Y. and F.P. Incropera, “Laser-Assisted Machining of Magnesia-Partially-Stabilized Zirconia,” *ASME Transactions, J. Manufacturing Science and Engineering, 126*, 42-51, 2004.

210. Rebro, P.A., Shin, Y.C. and F.P. Incropera, “Design of Operating Conditions for Crack-free Laser-Assisted Machining of Mullite,” *Int. J. Machine Tools and Manufacture, 44*, 677-694, 2004.

211. Pfefferkorn, F.E., Incropera, F.P. and Y.C. Shin, “Heat Transfer Model of Semi-Transparent Ceramics Undergoing Laser-Assisted Machining,” *Int. J. Heat Mass Transfer, 48*, 1999-2012, 2005.

Refereed Conference Proceedings

1. Incropera, F.P., Bower, W.W. and R.L. Kingsbury, "Numerical Studies of Internal, Equilibrium Plasma Flows," ASME 69-WA/HT-55, ASME Winter Annual Meeting, Los Angeles, Nov. 16-20, 1969.

2. Freeman, M.A. and F.P. Incropera, "Operational Characteristics of a Prototype Arc Plasma Scalpel," 23rd Annual Conference on Engineering in Biology and Medicine, Paper 25.9, Washington, D.C., Nov.15-19, 1970.

3. Scott, R.K. and F.P. Incropera, "Calculation of Flow Conditions for the Arc Plasma Scalpel," 23rd Annual Conference on Engineering in Biology and Medicine, Paper 25.14, Washington, D.C., Nov.15-19, 1970.

4. Clark, K.J. and F.P. Incropera, "Electron-Ion Recombination - A Critical Review of Theories and Experimental Results for an Argon Plasma," *Proc. of the ASME Fifth Symposium on Thermophysical Properties*, pp.331-341, Boston, Sept. 30 - Oct. 2, 1970.

5. Clark, K.J. and F.P. Incropera, "Thermochemical Nonequilibrium in an Argon Constricted Arc Plasma," American Institute of Aeronautics and Astronautics 4th Fluid and Plasma Dynamics Conference, Paper No. 71-593, Palo Alto, California, June 21-23, 1971.

6. Incropera, F.P., Freeman, M.A. and R.K. Scott, "The Arc Plasma Scalpel: Development, Diagnostics, and Flow Modeling," American Institute of Aeronautics and Astronautics 4th Fluid and Plasma Dynamics Conference, Paper No. 71-609, Palo Alto, California, June 21-23, 1971.

7. Link, W.J., Glover, J.L., Edwards, J.L., Henderson, M.R., Yaw, P.B. and F.P. Incropera, "Wound Healing of Mouse Skin Incised with a Plasma Scalpel," Annual Meeting of the Association of Academic Surgeons, New Orleans, Nov. 1972.

8. Link, W.J., Incropera, F.P. and J.L. Glover, "The Thermal Response of Tissue Subjected to Plasma Scalpel Heating," ASME 23-WA/Bio-32, ASME Winter Annual Meeting, Detroit, Nov.11-15, 1973.

9. Link, W.J., Incropera, F.P. and J.L. Glover, "A Plasma Scalpel: Comparison of Tissue Damage and Wound Healing with Electrosurgical and Steel Scalpels," Annual Meeting of Western Section, American Surgical Association, Colorado Springs, Colorado, Nov.20-23, 1975.

10. Smith, C.R., Incropera, F.P., Weirich, W.E. and G.W. Mauck, "Thermal Response During Deep Hypothermia Using Thoracic Flush Rewarming," *Advances in Bioengineering*, American Society of Mechanical Engineers, pp.32-35, 1975.

11. Link, W.J., Glover, J.L. and F.P. Incropera, "Experimental Investigation of a Plasma Scalpel," 15th Annual Meeting of the San Diego Biomedical Symposium, San Diego, Calif., Feb.4-6, 1976.

12. Freemyers, M.C. and F.P. Incropera, "A Simulation of Waste Heat Utilization for Greenhouse Climate Control," Proceedings of the Waste Heat Management and Utilization Conference, pp. VIII A57 to VIII A96, Miami Beach, Florida, May 9-11, 1977.

13. Incropera, F.P. and J.J. Rog, "Thermal Control of a Shallow Pond with Waste Heat from a Closed Cycle Cooling System," Proceedings of the Waste Heat Management and Utilization Conference, pp. VIII A97 to VIII A129, Miami Beach, Florida, May 9-11, 1977.

14. Daniel, K.J., Laurendeau, N.M. and F.P. Incropera, "Prediction of Radiation Absorption and Scattering in Turbid Water Bodies," ASME 77-HT-47, National Heat Transfer Conference, Salt Lake City, Utah, August 15-17, 1977.

15. Daniel, K.J., Laurendeau, N.M. and F.P. Incropera, "Optical Property Measurements for Suspensions of Unicellular Algae," ASME 78-HT-14, AIAA-ASME Thermophysics and Heat Transfer Conference, Palo Alto, May 24-26, 1978.

16. Fetters, G.D., Viskanta, R. and F.P. Incropera, "Experimental Study of Heat Transfer through Coal-Ash Deposits," ASME 82-WA/HT-30, ASME Winter Annual Meeting, Phoenix, Nov. 14-19, 1982.

17. Brosmer, M.A. and F.P. Incropera, "Augmentation of Heat Transfer from a Cylinder to a Liquid in Crossflow due to Gas Impingement," ASME 83-HT-41, National Heat Transfer Conference, Seattle, July 24-27, 1983.

18. Bergman, T.L., Munoz, D.R., Incropera, F.P. and R. Viskanta, "Correlation for Entrainment of Salt-Stratified Fluid by a Thermally Driven Mixed Layer," ASME 83-WA/HT-76, Winter Annual Meeting, Boston, Nov.14-18, 1983.

19. Incropera, F.P., "Undergraduate Education in Heat Transfer-A Point of View," ASME 84-WA/HT-29, Winter Annual Meeting, New Orleans, Dec.10-14, 1984. Also published in *Heat Transfer Engineering 6*, 19-25, 1985.

20. Vader, D.T., Viskanta, R. and F.P. Incropera, "Design and Testing of a High Temperature Emissometer for Porous and Particulate Dielectrics," Paper AIAA-85-0989, Twentieth Annual AIAA Thermophysics Conference, Williamsburg, VA, June 19-21, 1985.

21. Incropera, F.P., Prescott, P.J. and D.D. Voelkel, "Comparison of Metallic Radiation and Ceramic Convection Recuperators for Furnace Heat Recovery," ASME 85-HT-76, National Heat Transfer Conference, Denver, CO, August 6-9, 1985.

22. Moffatt, D.F., Ramadhyani, S. and F.P. Incropera, "Conjugate Heat Transfer from Wall Embedded Sources in Turbulent Channel Flow," Fourth AIAA/ASME Thermophysics/Heat Transfer Conference, Boston, In *Heat Transfer in Electronic Equipment-1986*, ASME HTD-Vol.57, A. Bar-Cohen, Ed., pp.177-182, June 2-4, 1986.

23. Knox, A.L. and F.P. Incropera, "Mixed Convection Flow and Heat Transfer in the Entry Region of a Horizontal Rectangular Duct," ASME 86-HT-18, Fourth AIAA/ASME Thermophysics/Heat Transfer Conference, Boston, June 2-4, 1986.

24. Kelecy, F.J., Ramadhyani, S. and F.P. Incropera, "Effect of Shrouded Pin Fins on Forced Convection Cooling of Discrete Heat Sources by Direct Liquid Immersion," Proceedings of the 2nd ASME-JSME Thermal Engineering Joint Conference, Honolulu, Hawaii, P.J. Marto and I. Tanasawa, Eds., Vol.3, pp.387-394, March 22-27, 1987.

25. Grimley, T.G., Mudawwar, I.A., and F.P. Incropera, "Enhancement of Boiling Heat Transfer in Falling Films," Proceedings of the 2nd ASME-JSME Thermal Engineering Joint Conference, Honolulu, Hawaii, P.J. Marto and I. Tanasawa, Eds., Vol.3, pp.411-418, March 22-27, 1987.

26. Ramadhyani, S. and F.P. Incropera," Forced Convection Cooling of Discrete Heat Sources with and without Surface Enhancement," Proceedings of the International Symposium on Cooling Technology for Electronic Equipment, Honolulu, Hawaii, W. Aung and P. Cheng, Eds., pp.249-264, March 17-20, 1987. Also published in *Cooling Technology for Electronic Equipment*, W. Aung, Ed., Hemisphere Publishing Corporation, New York, pp.317-332, 1988.

27. Mudawwar, I.A., Incropera, T.A. and F.P. Incropera, "Microelectronic Cooling by Fluorocarbon Liquid Films," Proceedings of the International Symposium on Cooling Technology for Electronic Equipment, Honolulu, Hawaii, W. Aung and P. Cheng, Eds., pp. 340-357, March 17-20, 1987. Also published in *Cooling Technology for Electronic Equipment*, W. Aung, Ed., Hemisphere Publishing Corporation, New York, pp. 416-434, 1988.

28. Bennon, W.D. and F.P. Incropera, "Developing Laminar Mixed Convection with Solidification in a Vertical Channel," ASME 87-HT-3, National Heat Transfer Conference, Pittsburgh, PA, August 9-12, 1987.

29. Zumbrunnen, D.A., Viskanta, R. and F.P. Incropera, "Analysis of Forced Convection Film Boiling on Moving Metallic Strips and Plates Cooled During Manufacture," ASME 87-WA/HT-5, Winter Annual Meeting, Boston, MA, December 13-17, 1987.

30. Craig, T.R., Incropera, F.P. and S. Ramadhyani, "Heat Transfer and Pressure Drop for High Density Staggered Pin Fin Arrays with Liquid Coolants," Proceedings of the International Symposium on Heat Transfer in Electronic and Microelectronic Equipment, Dubrovnik, Yugoslavia, August 29-September 2, 1988. Also published *in Heat Transfer in Electronic Equipment*, A.E. Bergles, Ed., Hemisphere Publishing Corporation, New York, pp. 479-494, 1990.

31. Mahaney, H.V., Ramadhyani, S. and F.P. Incropera, "Mixed Convection Heat Transfer from an Array of Discrete Sources in a Horizontal Channel," In Cryogenic Cooling of *Optical and Electronic Equipment*, ASME HTD-131, pp. 13-19, T.W. Simon and S. Oktay, Eds., Fifth AIAA/ASME Thermophysics/Heat Transfer Conference, Seattle, June, 1990.

32. Incropera, F.P., Bennon, W.D., Christenson, M.S., Neilson, D.G. and P.J. Prescott, "Solidification of Binary Liquids: Physical Phenomena and Consequences," Proceedings of the International Symposium on Manufacturing and Material Processing, Dubrovnik, Yugoslavia, August 27-31, 1990.

33. Filipovic, J., Viskanta, R., Incropera, F.P. and T.A. Veslocki, "Thermal Behavior of a Moving Steel Strip Cooled by an Array of Planar Water Jets," *In Heat Transfer in Metals and Containerless Processing and Manufacturing*, ASME HTD-Vol. 162, pp. 13-23, T.L. Bergman, D.A. Zumbrunnen, Y. Bayazitoglu and A.G. Lavine, Eds., Twenty-Eighth National Heat Transfer Conference, Minneapolis, July 28-31, 1991.

34. Filipovic, J., Viskanta, R. and F.P. Incropera, "Analysis of Subcooled Turbulent Film Boiling on a Moving Isothermal Surface," Proceedings of First International Conference on Transport Phenomena in Processing, Honolulu, Hawaii, March 22-26, 1992.

35. Sullivan, P.F., Ramadhyani, S. and F.P. Incropera, "Use of Extended Surfaces to Enhance Impingement Cooling with Single Circular Jets," EEP-Vol. 1-1, pp. 207-215, W.T. Chen and H. Abe, Eds. Proceedings of First ASME/JSME Conference on Electronic Packaging, San Jose, California, April 9-12, 1992.

36. Prescott, P.J. and F.P. Incropera, "Magnetically Damped Convection during Solidification of a Binary Metal Alloy: Numerical Simulations," *In Transport Phenomena in Materials Processing and Manufacturing*, ASME HTD-Vol. 196, pp. 51-58, M. Charmchi, S.M. Walsh, K.M. Moallemi, M. Chen, F.P. Incropera, T. Bergman, Y. Joshi, and R.L. Mahajan, Eds., Twenty-Ninth National Heat Transfer Conference, San Diego, August 6-9, 1992.

37. Prescott, P.J. and F.P. Incropera, "The Effects of Undercooling and Recalescence on Transport Phenomena during Solidification of Binary Metal Alloys," *In Transport Phenomena in Materials Processing and Manufacturing*, ASME HTD-Vol. 196, pp. 31-39, M. Charmchi, S.M. Walsh, K.M. Moallemi, M. Chen, F.P. Incropera, T. Bergman, Y. Joshi and R.L. Mahajan, Eds., Twenty-Ninth National Heat Transfer Conference, San Diego, August 6-9, 1992.

38. Magirl, C. and F.P. Incropera, "Flow and Morphological Conditions Associated with Unidirectional Solidification of Aqueous Ammonium Chloride," In *Topics in Heat Transfer*, ASME HTD-Vol. 206-1, pp. 1-10, M. Keyhani, P.G. Simpkins, R.H. Pletcher, R.S. Amano, and B.F. Armaly, Eds., Twenty-Ninth National Heat Transfer Conference, San Diego, August 6-9, 1992.

39. Sullivan, P.F., Incropera, F.P. and S. Ramadhyani, "Use of Smooth and Roughened Spreader Plates to Enhance Impingement Cooling of Small Heat Sources with Single Circular Jets," In *Topics in Heat Transfer*, ASME HTD-Vol. 206-2, pp. 103-110, M. Toner, M.I. Flik, B.W. Webb, D.T. Vader, R.V. Arimilli, H.J. Saver, J. Georgiadis, and V. Prasad, Eds., Twenty-Ninth National Heat Transfer Conference, San Diego, August 6-9, 1992.

40. Heindel, T.J., Ramadhyani, S., Incropera, F.P. and A. Campo, "Surface Enhancement of a Heat Source Exposed to a Circular Liquid Jet with Annular Collection of the Spent Fluid," In *Topics in Heat Transfer*, ASME HTD-Vol. 206-2, pp. 111-118, M. Toner, M.I. Flik, B.W. Webb, D.T. Vader, R.V. Arimilli, H.J. Saver, J. Georgiadis, and V. Prasad, Eds., Twenty-Ninth National Heat Transfer Conference, San Diego, August 6-9, 1992.

41. Polentini, M.S., Ramadhyani, S. and F.P. Incropera, "Two-Phase Thermosyphon Cooling of an Array of Discrete Heat Sources in a Rectangular Cavity," In *Advances in Electronic Packaging*, ASME EEP-Vol. 4-2, pp. 899-908, P.A. Engel, Ed., Proceedings of ASME International Electronics Packaging Conference, Binghamton, NY, September 29-October 2, 1993.

42. Teuscher, K.L., Ramadhyani, S. and F.P. Incropera, "Jet Impingement Cooling of an Array of Discrete Heat Sources with Extended Surfaces," *In Enhanced Cooling Techniques for Electronic Applications*, ASME HTD-Vol. 263, pp. 1-10, S.V. Garimella, M. Greiner, M.M. Yovanovich and V.W. Antonetti, Eds., ASME Winter Annual Meeting, New Orleans, November 28-December 3, 1993.

43. Filipovic, J., Viskanta, R. and F.P. Incropera, "Cooling of a Moving Steel Strip by an Array of Round Jets," Thirty-Fifth Mechanical Working and Steel Processing Conference of the American Institute of Mining, Metallurgical and Petroleum Engineers, Pittsburgh, October 24-27, 1993. Conference Proceedings Published by Iron and Steel Society of American Institute of Materials Engineering, Vol. XXXI, pp. 317-327, 1994.

44. Prescott, P.J. and F.P. Incropera, "The Effect of Turbulence in the Melt during Solidification of a Binary Metal Alloy with Electromagnetic Stirring," *In Transport Phenomena in Materials Processing and Manufacturing*, ASME HTD-Vol. 280, pp. 59-70,

M.K. Alam et al., Eds., Sixth AIAA/ASME Thermophysics/Heat Transfer Conference, Colorado Springs, June 20-22, 1994.

45. Heindel, T.J., Ramadhyani, S. and F.P. Incropera, "Conjugate Natural Convection from an Array of Discrete Heat Sources," In *Heat Transfer with Combined Modes*, ASME HTD-Vol. 299, pp. 51-62, D.E. Beasley and K.D. Cole, Eds., ASME Winter Annual Meeting, Chicago, November 13-18, 1994.

46. Krane, M.J.M. and F.P. Incropera, "Analysis of the Effect of Shrinkage on Macrosegregation in Alloy Solidification," In *Transport Phenomena in Solidification*, ASME HTD-Vol. 284, AMD-Vol. 182, pp. 13-28, C. Beckermann, H.P. Wang, L.A. Bertram, M.S. Sohal, and S.I. Guceri, Eds., ASME Winter Annual Meeting, Chicago, November 13-18, 1994.

47. Novak, J.W., Shin, Y.C. and F.P. Incropera, "Assessment of Plasma Enhanced Machining for Improved Machinability of Inconel 718," In *Manufacturing Science and Engineering*, ASME PED-Vol. 68-1, pp. 443-452, W.E. Alzheimer, Ed., ASME Winter Annual Meeting, Chicago, November 13-18, 1994.

48. Magirl, C.S. and F.P. Incropera, "Effect of Mold Oscillation on Convection and Macrosegregation for Unidirectional Solidification from Below," Proceedings of Fourth ASME/JSME Thermal Engineering Joint Conference, Hawaii, March 19-24, Vol. 4, pp. 33-39, 1995.

49. Rozzi, J.C., Krane, M.J.M., Incropera, F.P. and Y.C. Shin, "Three-Dimensional, Unsteady Numerical Predictions of Thermal Fields within a Rotating Cylindrical Workpiece Subjected to Localized Heating by a Translating Laser Source," *In Transport Phenomena in Materials Processing*, ASME HTD-Vol. 317-2, pp. 399-411, ASME International Mechanical Engineering Congress and Exhibition, San Francisco, November 12-17, 1995.

50. Hall, D.E., Incropera, F.P. and R. Viskanta, “Jet Impingement Boiling from Circular Free-Surface Jets during Quenching Experiments,” In *Fundamentals of Convection Transfer*, ASME HTD-Vol. 333-2, pp. 131-141, ASME International Mechanical Engineering Conference and Exposition, Atlanta, GA, November 17-23, 1996.

51. Hall, D.E., Incropera, F.P. and R. Viskanta, “Control of Jet Impingement Boiling Heat Transfer by Means of Gas Bubble Injection,” In *Manufacturing and Materials Processing*, AMSE HTD-Vol. 347, pp. 95-102, Thirty-Second National Heat Transfer Conference, Baltimore, MD, August 10-12, 1997.

52. Hall, D.E., DeWitt, D.P. and F.P. Incropera, “A New Model-Building, Problem-Solving Computer Environment for Learning and Practicing Heat Transfer,” In *Innovations in Heat Transfer Education and Student Heat Transfer Designs*, ASME HTD-Vol. 344, pp. 35-42, Thirty-Second National Heat Transfer Conference, Baltimore, MD, August 10-12, 1997.

53. Rozzi, J.C., Incropera, F.P. and Y.C. Shin, “Transient, Three-Dimensional Heat Transfer Model for the Laser Assisted Machining of Ceramic Materials,” In *Laser Based Materials*

processing, ASME HTD-Vol. 351, pp.75-85, ASME International Mechanical Engineering Congress and Exposition, Dallas, TX, November 16-21, 1997.

54. Lei, S., Shin, Y.C. and F.P. Incropera, "Material Constitutive Modeling under High Strain Rates and Temperatures through Orthogonal Machining Tests," In *Unconventional machining Methods*, ASME MED-Vol. 6-2, pp. 91-98, ASME International Mechanical Engineering Congress and Exposition, Dallas, TX, November 16-21, 1997.

55. Rozzi, J.C., Pfefferkorn, F.E., Incropera, F.P. and Y.C. Shin, "Experimental Evaluation of the Laser Assisted Machining of Silicon Nitride Ceramics," In *Manufacturing Science and Engineering*, ASME MED-Vol. 8, pp. 229-239, ASME International Mechanical Engineering Congress and Exposition, Anaheim, CA, November 15-20, 1998.

56. Incropera, F.P., Rozzi, J.C., Pfefferkorn, F.E., Lei, S. and Y.C. Shin, "Laser-Assisted Machining of Difficult-to-Machine Materials," Paper AJTE-6529, Proceedings of the 5th ASME/JSME Thermal Engineering Joint Conference, San Diego, CA, March 15-19, 1999.

57. Pfefferkorn, F.E., Incropera, F.P. and Y.C. Shin, "Transient, Three-Dimensional Heat Transfer Model for Partially Stabilized Zirconia Undergoing Laser-Assisted Machining," In *Proceedings of the ASME, Heat Transfer Division*, ASME HTD-Vol.364-3, pp.197-209, ASME International Mechanical Engineering Congress and Exposition, Nashville, TN, November 14-19, 1999.

58. Lei, S., Shin, Y.C. and F.P. Incropera, "Experimental Investigation of Thermo-Mechanical Characteristics in Laser-Assisted Machining of Silicon Nitride Ceramics," In *Manufacturing Science and Engineering*, ASME MED-Vol.10, pp.761-788, ASME International Mechanical Engineering Congress and Exposition, Nashville, TN, November 14-19, 1999.

59. Rebro, P.A., Y.C. Shin and F.P. Incropera, "Laser-Assisted Machining of Reaction Sintered Mullite Ceramics," Paper IMECE2001-MED-23341, ASME International Mechanical Engineering Congress and Exposition, New York, NY, November 11-16, 2001.

60. Rebro, P.A., F.E. Pfefferkorn, Y.C. Shin, and F.P. Incropera, "Comparative Assessment of Laser-Assisted Machining for Various Ceramics,30th North American Manufacturing Research Conference, W. Lafayette, IN, May 21-24, 2002.

61. Pfefferkorn, F.E., F.P. Incropera and Y.C. Shin, "Surface Temperature Measurement of Semi-transparent Ceramics," Paper IMECE2002-HT-39543, ASME International Mechanical Engineering Congress and Exposition, New Orleans, LA, November 17-22, 2002.

Books

Incropera, F.P., *Introduction to Molecular Structure and Thermodynamics*, John Wiley and Sons, New York, 1974.

Incropera, F.P. and D.P. DeWitt, *Fundamentals of Heat Transfer*, John Wiley and Sons, New York, 1981 (Chinese translation published in 1985).

Incropera, F.P. and D.P. DeWitt, *Fundamentals of Heat and Mass Transfer*, Second Edition, John Wiley and Sons, New York, 1985.

Incropera, F.P. and D.P. DeWitt, *Introduction to Heat Transfer*, John Wiley and Sons, New York, 1985 (Korean translation published in 1989).

Incropera, F.P. and D.P. DeWitt, *Fundamentals of Heat and Mass Transfer*, Third Edition, John Wiley and Sons, New York, 1990 (Portuguese translation published in 1992).

Incropera, F.P. and D.P. DeWitt, *Introduction to Heat Transfer*, Second Edition, John Wiley and Sons, New York, 1990.

Incropera, F.P. and D.P. DeWitt, *Fundamentals of Heat and Mass Transfer*, Fourth Edition, John Wiley and Sons, New York, 1996 (Portuguese translation published in 1998, Spanish translation published in 1999 by Prentice Hall).

Incropera, F.P. and D.P. DeWitt, *Introduction to Heat Transfer*, Third Edition, John Wiley and Sons, New York, 1996 (Korean translation published in 1998).

Incropera, F.P., *Liquid Cooling of Electronic Devices by Single-Phase Convection*, John Wiley and Sons, New York, 1999.

Incropera, F.P. and D.P. DeWitt, *Fundamentals of Heat and Mass Transfer*, Fifth Edition, John Wiley and Sons, New York, 2001 (Portuguese translation published in 2003; Chinese translation published in 2008).

Incropera, F.P. and D.P. DeWitt, *Introduction to Heat Transfer*, Fourth Edition, John Wiley and Sons, New York, 2001.

Tien, C.-L., Prasad, V. and F.P. Incropera, Editors, *Annual Review on Heat Transfer*, Begell House, Inc., Volume 12, 2002.

Incropera, F.P., DeWitt, D.P., Bergman, T.L. and A.S. Lavine, *Fundamentals of Heat and Mass Transfer*, Sixth Edition, John Wiley and Sons, New York, 2007.

Incropera, F.P., DeWitt, D.P., Bergman, T.L. and A.S. Lavine, *Introduction to Heat Transfer*, Fifth Edition, John Wiley and Sons, New York, 2007.

Bergman, T.L., Lavine, A.S., Incropera, F.P. and D.P. DeWitt, *Fundamentals of Heat and Mass Transfer*, Seventh Edition, John Wiley and Sons, New York, 2011.

Bergman, T.L., Lavine, A.S., Incropera, F.P. and D.P. DeWitt, *Introduction to Heat Transfer*, Sixth Edition, John Wiley and Sons, New York, 2011.

Monographs, Proceedings and Book Chapters

(Published without Review)

1. Incropera, F.P., "Thermodynamic Implications of Furnace Energy Conservation," *Proceedings Fifth Annual Aluminum Industry Energy Conservation Workshop*, pp. 73-90, 1980.

2. Incropera, F.P., "Mixed Convection in Horizontal Liquid Flows with and without Radiation," *Proceedings United States-Italy Joint Workshop on Heat Transfer and Combustion*, Vol.3, pp. 6.1-6.24, 1982.

3. Viskanta, R., Bergman, T.L. and F.P. Incropera, "Double-Diffusive Convection," *in Natural Convection: Fundamentals and Applications*, S. Kakac, W. Aung and R. Viskanta, Eds., pp. 1075-1099, Hemisphere Publishing Corp., New York, 1985.

4. Anderson, D.W., Viskanta, R. and F.P. Incropera, "Thermal Conductance of Coal-Ash Deposits," *Proceedings of Third Engineering Foundation Conference on Slagging and Fouling in Combustion Gases*, Copper Mountain, CO, July 29-August 3, 1984.

5. Incropera, F.P., "Buoyancy Effects in Double-Diffusive and Mixed Convection Flows," *Proc. Eighth International Heat Transfer Conference*, C.L. Tien, V.P. Carey and J.K. Ferrell, Eds., Hemisphere Publishing Corp., New York, Vol.1, pp.121-130, 1986.

6. Incropera, F.P., Editor, *Research Needs in Electronic Cooling*, Proceedings of a Workshop Sponsored by the National Science Foundation and Purdue University, December, 1986.

7. Hannemann, R., Incropera, F.P. and R. Simons, "Single Phase Liquid Cooling," in *Research Needs in Electronic Cooling*, Proceedings of a Workshop Sponsored by the National Science Foundation and Purdue University, F.P. Incropera, Ed., pp.6-25, December, 1986.

8. Incropera, F.P., "Research Needs in Electronic Cooling, "*Proceedings of the International Symposium on Cooling Technology for Electronic Equipment*, pp.749-761, W. Aung and P. Cheng, Eds., Honolulu, March 17-21, 1987. Also published in *Cooling Technology for*

Electronic Equipment, W. Aung, Ed., Hemisphere Publishing Corporation, New York, pp.809-822, 1988.

9. Mudawwar, I.A., Incropera, T.A. and F.P. Incropera, "Critical Heat Flux (CHF) in Falling Liquid Films," in *Particulate Phenomena and Multiphase Transport*, T.N. Veziroglu, Ed., Hemisphere Publishing Corporation, New York, Vol.2, pp. 345-360, 1988.

10. DeWitt, D.P. and F.P. Incropera, "Physics of Thermal Radiation," Chapter 1, *Theory and Practice of Radiation Thermometry*, D.P. DeWitt and G.D. Nutter, Eds., Wiley Interscience, New York, 1988.

11. Incropera, F.P., "Heat Transfer in the United States: Industry/University Interfaces," Invited Paper, *Journal of Heat Transfer Society of Japan*, Vol. 27, No. 104, pp.68-86, 1988.

12. Incropera, F.P., "Liquid Immersion Cooling of Electronic components,*" Proceedings of the 20th Symposium of the International Center for Heat and Mass Transfer on Heat Transfer in Electronic and Microelectronic Equipment*, Dubrovnik, Yugoslavia, August 29-September 2, 1988. Also published in *Heat Transfer in Electronic and Microelectronic Equipment*, A.E. Bergles, Ed., Hemisphere Publishing Corporation, New York, pp. 407-444, 1990. Also selected for publication as a keynote paper in the inaugural issue of *Termotehnika* (Journal of the Yugoslavian Society of Heat Transfer Engineers), Vol. 1-2, pp. 5-40, 1990.

13. Incropera, F.P., Neilson, D.G. and P.J. Prescott, "Effect of Convection on Solidification in a Binary Mixture," *Proc. Seventh Symposium on Energy Engineering Sciences*, Argonne National Laboratory, Report CONF-8906112, pp. 145-153, 1989.

14. Wood, B.D. and F.P. Incropera, "Engineering Thermodynamics and Heat Transfer," Chapter 10, *Eshbach's Handbook of Engineering Fundamentals*, Fourth Edition, B. Tapley, Editor, John Wiley and Sons, New York, 1990.

15. Incropera, F.P. and R. Viskanta, "Effects of Convection on the Solidification of Binary Mixtures," *Proceedings of Seminar on Advanced Heat Transfer in Manufacturing and Processing of New Materials*, Tomakomai-Hokkaido, Japan, October 28-31, pp. SL5.1-SL5.18, 1990. Also published in *Heat and Mass Transfer in Materials Processing*, I. Tanasawa and N. Lior, Eds., Hemisphere Publishing Corporation, New York, pp. 295-312, 1992.

16. Viskanta, R. and F.P. Incropera, "Quenching with Liquid Jet Impingement," *Proceedings of Seminar on Advanced Heat Transfer in Manufacturing and Processing of New Materials*, Tomakomai-Hokkaido, Japan, October 28-31, pp. SP.1-SP.22, 1990. Also published *in Heat and Mass Transfer in Materials Processing*, I. Tanasawa and N. Lior, Eds., Hemisphere Publishing Corporation, New York, pp. 455-476, 1992.

17. Incropera, F.P., "Liquid Cooling of Multi-Chip Modules," Proceedings Ninth National Heat Transfer Conference of Unione di Termofluidodinamica, Pisa, Italy, June 13-14, pp. 3-22, 1991.

18. Incropera, F.P. and D.G. Neilson, "Flow and Macrosegregation Phenomena for Directional Solidification of Binary Mixtures," *Proc. Tenth Symposium on Energy Engineering Sciences*, Argonne National Laboratory, Report CONF-9205147, pp. 9-16, 1992.

19. Wolf, D.H., Incropera, F.P. and R. Viskanta, "Jet Impingement Boiling," *in Advances in Heat Transfer*, Volume 23, J.P. Hartnett T. Irvine, Jr., and Y.I. Cho, Eds., Academic Press, New York, pp. 1-132, 1993.

20. Incropera, F.P., Anderson, D.C., Henderson, M., Huebner, K.H., Kinzel, G.L. and V.P. Lorenz, "Modern Design Tools," Proceedings of American Society of Mechanical Engineers Education Conference on *Innovations in Engineering Design Education*, Orlando, Florida, March 24-26, pp. 169-172, 1993.

21. Prescott, P.J. and F.P. Incropera, "Binary Solid-Liquid Phase Change with Fluid Flow," In *Advances in Transport Phenomena*, Volume IX, A.S. Mujumdar and R.A. Mashelkar, Eds., Elsevier Science Publishers, Amsterdam, pp. 57-101, 1993.

22. Incropera, F.P. and S. Ramadhyani, "Single-Phase, Liquid Jet Impingement Cooling of High Performance Chips," *Proceedings of NATO Advanced Study Institute on Cooling of Electronic Systems*, Izmir, Turkey, June 21-July 2, pp. 277-327, 1993. Also published in *Cooling of Electronic Systems*, S. Kakac, H. Yüncü and K. Hijikata, Eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 457-506, 1994.

23. Incropera, F.P. and S. Ramadhyani, "Application of Channel Flows to Single-Phase Liquid Cooling of Chips and Multi-Chip Modules," *Proceedings of NATO Advanced Study Institute on Cooling of Electronic Systems*, Izmir, Turkey, June 21-July 2, pp. 460-491, 1993. Also published in *Cooling of Electronic Systems*, S. Kakac, H. Yüncü and K. Hijikata, Eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 507-537, 1994.

24. Incropera, F.P. and P.J. Prescott, "Effect of Steady and Time-Harmonic Magnetic Fields on Macrosegregation in Alloy Solidification," *Proc. Thirteenth Symposium on Energy Engineering Sciences*, Argonne National Laboratory, Report CONF-9505200, pp. 58-66, 1995.

25. Incropera, F.P. and P.J. Prescott, "Active Control of Macrosegregation," *Proc. C.-L. Tien Symposium on Thermal Science and Engineering*, Univ. California, Berkeley, pp. 351-358, 1995.

26. Prescott, P.J. and F.P. Incropera, "Convection Heat and Mass Transfer in Alloy Solidification," in *Advances in Heat Transfer*, Volume 28, J.P. Hartnett, T. Irvine, Jr., Y.I. Cho, and G.A. Greene, Eds., Academic Press, New York, pp. 231-338, 1996.

27. Heindel, T.J., Incropera, F.P. and S. Ramadhyani, "Heat Transfer Enhancement from Arrays of Discrete Heat Sources," *Proceedings A.E. Bergles Symposium on Process,*

Enhanced, and Multiphase Heat Transfer, R.M. Manglik and A.D. Kraus, Eds., Begel House, Inc., New York, pp. 207-216, 1996.

28. Leshock, C.E., Shin, Y.C. and F.P. Incropera, "Modeling of Workpiece Temperature with Plasma Heating," *Proceedings of the Second S.M. Wu Symposium on Manufacturing Science*, Vol. 2, pp. 178-186, Ann Arbor, MI, 1996.

29. Incropera, F.P., "Heat Transfer," Reference Notes and Instructional Video for Fundamentals of Engineering Exam, ASME Professional Development Program, New York, 1996.

30. Incropera, F.P., "Experimental Methods for Characterizing Transport Phenomena Occurring during Solidification of Multiconstituent Materials," *Proceedings of the Fourth World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics*, M. Giot, F. Mayinger and G.P. Celata, Eds., Vol. 4, pp. 1855-1867, 1997.

31. Incropera, F.P., Bennon, W.D., Christenson, M.S., Neilson, D.G. and P.J. Prescott, "Solidification of Binary Fluids: Physical Phenomena and Consequences," *Proceedings International Symposium on Manufacturing and Materials Processing*, Begell House, Inc., New York, W. Aung, Ed., Vol. 1, pp. 161-178, 1997.

32. Shin, Y.C., Lei, S., Pfefferkorn, F.E., Rebro, P., Rozzi, J.C. and F.P Incropera, "Laser-Assisted Machining: Its Potential and Future," *Machining Technology*, Vol. 11, No.3, pp. 1-6, 2000.

Appendix B

ADMINISTRATION AND SERVICE

MAJOR

Purdue University

Chairman, Heat and Mass Transfer Area of Mechanical Engineering (9/74 to 8/85). Responsible for providing leadership in the following areas: coordination and improvement of undergraduate and graduate level courses in heat and mass transfer; operation and improvement of undergraduate instructional laboratory in heat transfer; improvement and operation of the Heat Transfer Research Laboratory; recruitment of new faculty and graduate students for the Heat and Mass Transfer Area; and the offering of special short courses by the heat and mass transfer faculty. Responsibilities also included being an advocate of the Heat and Mass Transfer Area within and outside of the School of Mechanical Engineering.

Member, Mechanical Engineering Head's Advisory Committee (9/75 to 10/88). Responsible for advising the Head of the School on matters involving administrative and academic policy.

Assistant Dean for Research and Graduate Programs, Schools of Engineering (10/87 to 6/89). Responsible for oversight of the Institute for Interdisciplinary Engineering Studies (included six research centers with annual expenditures exceeding $5,000,000), coordination of multi-disciplinary research proposals, and administration of fellowship programs.

Head, School of Mechanical Engineering (6/89 to 6/98). Administrative responsibility for education, research and service functions involving approximately fifty-five faculty members, fifty-five staff and service personnel, nine hundred undergraduate students, and three hundred graduate students. Major functions include, but are not restricted to, recruitment of faculty, maintaining and enhancing interfaces with alumni and industry, exercising budgetary control over expenditures, which exceed $14,000,000 annually, and providing leadership with respect to major teaching and research thrusts of the School.

University of *Notre Dame*

Dean, College of Engineering (7/98 to present). Administrative responsibility for education, research and service functions of five academic departments involving approximately one-hundred faculty members, sixty staff and service personnel, eight hundred undergraduate students and three hundred graduate students. Major functions include, but are not restricted to, recruitment of department chairs and faculty, maintaining and enhancing interfaces with alumni and industry, exercising budgetary controls over expenditures, which exceed $30,000,000 annually, and providing leadership with respect to major teaching and research thrusts of the College.

OTHER

Purdue University

1. Mechanical Engineering Graduate Committee, 9/67 to 8/69.

2. Engineering-Chemistry Liaison Committee, 9/68 to 8/72, Chairman 9/69 to 8/72.

3. Purdue University-Indiana University Coordinating Committee for Biomedical Engineering, 9/69 to 8/72, Chairman 9/70 to 8/72.

4. Purdue University Search Committee for Showalter Distinguished Professor of Bioengineering, 1/73 to 6/73.

5. Mechanical Engineering Research Review Committee, 10/74 to 7/75.

6. Mechanical Engineering Head Search Committee, 10/74 to 10/75.

7. Purdue University Water Resources Research Council, 9/79 to 8/82.

8. Schools of Engineering Search Committee for Director of Center for Information and Numerical Data Analysis (CINDAS), 7/81 to 5/82.

9. Alumni Fund Raising Committee, School of Mechanical Engineering Centennial Celebration, Chairman, 8/81 to 4/82.

10. Mechanical Engineering Faculty Representative to the Engineering Area Promotions Committee, 9/81 to 8/84.

11. Mechanical Engineering Curriculum Committee, 9/71 to 8/73; 9/74 to 8/79; 9/81 to 8/85.

12. Mechanical Engineering Awards Committee, 9/82 to 8/83, 9/87 to 7/88.

13. Mechanical Engineering Manufacturing and Materials Processing Area Committee, 10/85 to 5/87, 9/90-6/98, Chairman 1/93-8/95.

14. Purdue University Task Force on Taxation of Graduate Student Fee Remission, 10/87-5/88.

15. Purdue University Task Force on Pacific Rim Initiative, 10/87-5/88.

16. Purdue University Grants and Contracts Information Committee, 10/87-6/88.

17. Schools of Engineering Heads and Deans Advisory Committee, 10/87-6/98t.

18. Purdue University Research Institute Committee, 3/88-7/89.

19. Coordinating Committee, Schools of Engineering Masters Program in Engineering with a Manufacturing Option, 1990-1993.

20. Purdue University Advisory Committee on Sexual Harrassment, 1991-1992.

21. Purdue University Steering Committee on Administrative Computing Services, 1995-1996.

22. Purdue University/Indiana University Biomedical Engineering Program, Member of Executive Committee, 1996-1998.

University of Notre Dame

1. Provost's Advisory Committee, 7/98-6/06.

2. Academic Council, 7/98-6/06.

3. Search Committee for University Chief Information Officer, 8/00-8/01.

4. Search Committee for Vice President of the Graduate School, 8/00-7/01.

5. President's Advisory Committee on Integration of Academic and Student Life, 4/00-8/02.

6. University Strategic Planning Committee on Finance and Fundraising, 10/01-5/02.

State and National

1. Engineering Education Committee of Technology and Society Division, American Society of Mechanical Engineers, 3/73 to 8/76.

2. Committee on Heat and Mass Transfer in Biotechnology (K-17) of the Heat Transfer Division, American Society of Mechanical Engineers, 7/74 to 8/78.

3. Indiana Lieutenant Governor's Science Advisory Committee: Subcommittee on Energy, Panel II, Energy Conservation, 11/75 to 12/77.

4. Committee on Heat Transfer in Energy Systems (K-6) of the Heat Transfer Division, American Society of Mechanical Engineers, 11/81 to 12/92.

5. Awards Committee of Mechanical Engineering Division of American Society of Engineering Education, 9/82 to 8/85.

6. Proposal Review Panel, Heat Transfer Program, National Science Foundation, March, 1983.

7. Indiana Corporation of Science and Technology, Technical Advisor to Edge Technologies, Incorporated, Indianapolis, Indiana, 6/84 to 6/86.

8. Italian Union of Thermofluiddynamics, 11/84 to 6/07.

9. George Westinghouse Award Committee of American Society of Engineering Education, 2/85 to 1/88.

10. Proposal Review Panel, Heat Transfer Program, National Science Foundation, March, 1985.

11. Committee on Heat Transfer in Materials Processing and Manufacturing (K-15) of the Heat Transfer Division, American Society of Mechanical Engineers, 11/85 to present.

12. National Science Foundation Workshop on Research Needs in Electronic Cooling, Boston, Massachusetts, June 4-6, 1986, Administrator and Principal Organizer.

13. Proposal Review Panel, Thermal Systems Program, National Science Foundation, 1987.

14. Pacific Institute for Thermal Engineering, International Symposium on Cooling Technology for Electronic Equipment, Honolulu, Hawaii, March 18-21, 1987, Member of Organizing Committee.

15. Peer Review Panel, Small Business Innovative Research Program, Department of Energy, May, 1987.

16. Academic Review Committee, Department of Mechanical Engineering, University of Texas at Austin, July, 1987.

17. Associate Technical Editor, Transactions of the American Society of Mechanical Engineers, Journal of Heat Transfer (7/87 to 6/93).

18. International Centre for Heat and Mass Transfer, International Symposium on Heat Transfer in Electronic and Microelectronic Equipment, Dubrovnik, Yugoslavia, August 29 - September 2, 1988. Member of Organizing Committee.

19. Ninth International Heat Transfer Conference, Jerusalem, Israel, August 19-24, 1990. Member of U.S. Scientific Committee, 1986-1990.

20. Proposal Review Panel, Thermal Systems Program, National Science Foundation, February, 1990.

21. Evaluation Panel, Research Associates Program, National Research Council, March, 1990.

22. Hudson Institute Task Force on American Agenda for Leadership in Manufacturing and Technology, Subcommittee on Technology, 5/90-4/92.

23. Committee on Honors and Awards (K-3) of the Heat Transfer Division, American Society of Mechanical Engineers, 6/90 to 5/93.

24. Visitor, National Acreditation Board for Engineering and Technology, American Society of Mechanical Engineers, 1990-present.

25. Tenth International Heat Transfer Conference, Brighton, England, August 23-27, 1994. Member of U.S. Scientific Committee, 1990-1994.

26. Board of Editors, Experimental Heat Transfer, Hemisphere Publishing Corporation (8/90 to present).

27. Department of Energy, Assessment of Research Needs in Basic Energy Sciences, Member of Committee on Transport Phenomena, 5/93-11/93.

28. Max Jacob Award Committee, American Society of Mechanical Engineers and American Institute of Chemical Engineers, 1993-1996.

29. Proposal Review Panel, Department of Energy Integrated Manufacturing Predoctoral Fellowship Program, February, 1995.

30. Academic External Review Committee (Chairperson), Department of Mechanical Engineering, University of Minnesota, April, 1995.

31. National Nominating Committee, American Society of Mechanical Engineers, 6/95 to 5/97.

32. Proposal Review Panel, Department of Energy Integrated Manufacturing Predoctoral Fellowship Program, February, 1996.

33. Editorial Advisory Board, Microscale Thermophysical Engineering, Taylor and Francis Publishers, 9/96 to present.

34. Editorial Advisory Board, Heat Transfer Research, Begell House, Inc., Publishers, 6/97 to present.

35. External Academic Review Committee, Department of Mechanical Engineering, University of Maryland at College Park, November, 1997.

36. External Academic Review Committee, Department of Mechanical and Environmental Engineering, University of California at Santa Barbara, February, 1998.

37. External Academic Review Committee, Department of Mechanical Engineering, Stanford University, May, 1998.

38. National Research Council Liaison Committee of the National Academy of Engineering, 7/98 to 6/01.

39. External Academic Review Committee, Department of Mechanical and Aerospace Engineering, University of California at Los Angeles, December, 1999.

40. Secretary and Vice-Chair Elect, Section 10 (Mechanical Engineering) of the National Academy of Engineering, 2001-02.

41. Vice-Chair and Chair Elect, Section 10 (Mechanical Engineering) of the National Academy of Engineering, 2002-03.

42. Chair, Section 10 (Mechanical Engineering) of the National Academy of Engineering, 2003-04.

43. External Academic Review Committee, Department of Mechanical Engineering, Stanford University, May, 2004.

44. External Academic Review Committee, Department of Mechanical Engineering, Technical University of Zurich_ETH, January, 2007.

Appendix C

WORKSHOPS AND CONFERENCES

Aluminum Industry Energy Conservation Workshop, Washington D.C., September 16-17, 1980 (Panelist, Invited Lecture).

Department of Energy Workshop on Salt-Gradient Solar Ponds, Washington, D.C., April 13-14, 1982 (Session Chairman, Invited Lecturer).

United States-Italy Joint Workshop on Heat Transfer and Combustion, Pisa, Italy, Sept. 12-16, 1982 (Invited Lecturer).

Engineering Foundation Conference on Double Diffusive Convection, Santa Barbara, California, March 13-18, 1983 (Panelist and Session Organizer)

Department of Energy Workshop on Solar Pond Technology, Argonne National Laboratory, Argonne, Illinois, April 13-14, 1984 (Invited Lecture).

International Business Machines Corporation, Heat Transfer Symposium, Poughkeepsie, New York, May 9-10, 1984 (Invited Lecturer).

American Society of Mechanical Engineers, Heat Transfer in Industrial Energy Systems, National Heat Transfer Conference, Niagara Falls, New York, August 5-8, 1984 (Session Organizer).

American Society of Mechanical Engineers, Education in Heat Transfer, Winter Annual Meeting, New Orleans, Louisiana, December 9-14, 1984 (Panelist, Invited Lecture).

American Society of Mechanical Engineers, Materials Processing Heat Transfer, Winter Annual Meeting, Miami Beach, Florida, November 17-22, 1985 (Session Organizer).

American Society of Mechanical Engineers, High Flux/High Temperature Heat Transfer, Fourth AIAA/ASME Thermophysics/ Heat Transfer Conference, Boston, Massachusetts, June 2-4, 1986 (Session Co-Chairman).

National Science Foundation/Purdue University Workshop on Research Needs in Electronic Cooling, Andover, Massachusetts, June 4-6, 1986 (Workshop Organizer and Co-Chairman of Session on Single-Phase, Liquid Immersion Cooling).

International Institute of Refrigeration Conference on Progress in the Design of Refrigeration Systems, Purdue University, August 5-8, 1986 (Vice Chairman of Session on Thermodynamic Problems in Solar Absorption).

International Symposium on Cooling Technology for Electronic Equipment, Honolulu, Hawaii, March 17-20, 1987 (Chairman of Panel on Future Research Needs).

American Society of Mechanical Engineers, Materials Processing Heat Transfer, Winter Annual Meeting, Boston, Massachusetts, December 13-18, 1987 (Session Organizer).

American Society of Mechanical Engineers, Research in Thermal Control of Microelectronics, Winter Annual Meeting, Boston, Massachusetts, December 13-18, 1987 (Panelist).

International Centre for Heat and Mass Transfer, International Symposium on Heat Transfer in Electronic and Microelectronic Equipment, Dubrovnik, Yugoslavia, August 29-September 2, 1988 (Chairman of Session on Liquid Immersion Cooling).

WE-Heraeus Foundation, Workshop on Design Methods and Technologies for Multi-Chip-Modules, Bad Honnef, Federal Republic of Germany, April 23-25, 1990 (Invited Lectures).

Japan Society for the Promotion of Science, Oji International Seminar on Heat Transfer in Manufacturing and Processing of New Materials, Tomakomai, Japan, October 28-31, 1990 (Invited Lecture, Chairman and Rapporteur of Session on Material Properties).

National Science Foundation, Workshop on Thermal Sciences: Emerging Technologies and Critical Phenomena, Chicago, Illinois, April 18-20, 1991 (Member of Working Group on High Performance Digital Data Processing).

American Society of Mechanical Engineers, Heat Transfer in Cryogenic Systems, Winter Annual Meeting, Atlanta, Georgia, December 1-6, 1991 (Session Organizer).

American Society of Mechanical Engineers, Heat Transfer in Electronic Materials Processing, National Heat Transfer Conference, San Diego, California, August 9-12, 1992 (Session Co-Chairman).

Department of Energy Tenth Symposium on Energy Engineering Sciences, Argonne National Laboratory, Argonne, IL, May 11-13, 1992 (Chairman of Session on Fluid Mechanics).

American Society of Mechanical Engineers, Integrating Design into the Curriculum, Winter Annual Meeting, Anaheim, California, November 8-13, 1992 (Panelist).

American Society of Mechanical Engineers 1993 Mechanical Engineering Design Education Conference, Orlando, Florida, March 24-26, 1993 (Member of Organizing Committee and Chairman of Session on Modern Design Tools).

North Atlantic Treaty Organization, Advanced Study Institute on Cooling of Electronic Systems, Izmir, Turkey, June 21-July 2, 1993 (Invited Lectures and Member of Panel on Research Needs).

John Wiley & Sons, Inc., Conference on Future Trends in Engineering Education, New York, New York, July 8-9, 1993 (Panelist).

American Society of Mechanical Engineers, Energy Utilization in High Temperature Materials Processing, National Heat Transfer Conference, Atlanta, Georgia, August 8-11, 1993 (Session Chairman).

American Society of Mechanical Engineers, Issues and Directions in Graduate Education, National Heat Transfer Conference, Atlanta, Georgia, August 8-11, 1993 (Panelist).

Department of Energy Scoping Workshop on Basic Research in Energy Engineering, Leesburg, Virginia, October 29-31, 1993 (Member of Panel on Fluid, Chemical and Transport Processes).

American Society of Mechanical Engineers, Unconventional Manufacturing and Materials Processing, Winter Annual Meeting, New Orleans, Louisiana, November 28-December 3, 1993 (Session Chairman).

American Society of Mechanical Engineers, Fundamentals of Subcooled Flow Boiling, National Heat Transfer Conference, Portland, Oregon, August 6-9, 1995 (Session Co-Chairman).

National Science Foundation/Department of Energy Workshop on Advances in Thermally-Based Materials Processing and Manufacturing, Leesburg, Virginia, May 24-26, 1995 (Presenter and Session Moderator).

National Science Foundation, Workshop on Future of Mechanical Engineering Undergraduate Education, Massachusetts Institute of Technology, October 7-8, 1996 (Member of Organizing Committee, Principal Lecturer, and Facilitator of Session on Role of Information Technologies in Engineering Education).

Fourth World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, Brussels, Belgium, June 2-6, 1997 (Session Chair).

National Science Foundation, Workshop on Integration of Research and Engineering Education, Washington, D.C., November 8-10, 1998 (Presenter and Panelist).

Engineering Deans Institute on Ethics in Technology and Social Responsibility, Maui, Hawaii, March 21-24, 1999 (Facilitator of Session on Sustainable Development).

Appendix D

THESIS SUPERVISION

1. Kingsbury, R.L., "An Analysis of Internal Flow Wall Parameters for an Argon Plasma," M.S., August, 1968.

2. Bower, W.W., "Correlations for Wall Parameters in the Asymptotic Region of a Laminar Constricted Arc," M.S., January, 1969.

3. Lukens, L.A., "An Experimental Facility for Friction and Heat Transfer Measurements in a High Temperature Plasma," M.S., January, 1969.

4. Giannaris, R.J., "Spectroscopic Evidence of Nonequilibrium Effects in a Constricted, Atmospheric Argon Plasma," M.S., January, 1970.

5. Freeman, M.A., "Design and Diagnostics of a Prototype Plasma Arc Scalpel," M.S., January, 1970.

6. Link, W.J., "Investigation of Wall Heat Flux for Subsonic and Supersonic Argon Plasma Flow in a Constricted-Arc Generator," M.S., January, 1971.

7. Lukens, L.A., "An Experimental Investigation of Electric Field Intensity and Wall Heat Transfer for the Heating Region of a Constricted Arc Plasma," Ph.D., June, 1971.

8. Bower, W.W., "A Model of Water- and Transpiration-Cooled Argon Constricted Arcs Accounting for Turbulent Transport," Ph.D., June, 1971.

9. Clark, K.J., "Thermochemical Nonequilibrium in an Argon Constricted Arc Plasma," Ph.D., June, 1971.

10. Murrer, E.J., "A Spectroscopic Study of Helium and Nitrogen Constricted Arcs," M.S., January, 1972.

11. Giannaris, R.J., "Calculations of Coupled Radiative and Collisional Effects in a Cylindrically Confined Argon Plasma," Ph.D., January, 1972.

12. Greene, C.S., "Parametric Calculations for the Asymptotic Region of Hydrogen, Helium, Argon, Krypton, and Xenon Laminar Constricted Arcs," M.S., August, 1972.

13. Scott, R.K., "Thermochemical Nonequilibrium in Atomic Hydrogen at Elevated Temperatures," Ph.D., December, 1972.

14. Henderson, M.R., "Gas Transport Resulting from Hepatic Plasma Scalpel Surgery," M.S., December, 1972.

15. Link, W.J., "Development and Evaluation of the Plasma Scalpel: A Tool for Bloodless Surgery," Ph.D., August, 1973.

16. Lee, J.B., "Spectral Distribution of Radiation from a Constricted Arc Plasma," Ph.D., August, 1973.

17. Mauck, G.W., "An Experimental and Theoretical Study of Deep Hypothermia During Canine Open-Heart Surgery," M.S., August, 1974 (with C. Smith).

18. Daniel, K.J., "Visible Radiation Transfer in an Algal Culture," Ph.D., December, 1976.

19. Collins, C.E., "The Effects of Temperature Control on Biological Wastewater Treatment Processes," M.S., December, 1976.

20. Freemyers, M.C., "Waste Heat Utilization for Greenhouse Climate Control," M.S., May, 1977.

21. Hasting, M.E., "Thermal Structure of Shallow Water Layers Heated from Below," M.S., December, 1977.

22. Privoznik, K.G., "Optical Property Measurements of Selected Aqueous Suspensions," M.S., December, 1977.

23. Houf, W.G., "An Assessment of Techniques for Predicting Solar Radiation Transfer in Shallow Water Layers," M.S., August, 1978.

24. Yaghoubi, M.A., "Theoretical and Experimental Study of Thermal and Hydrodynamic Conditions in a Shallow Water Layer Heated from Below by Submerged Horizontal Cylinders," Ph.D., December, 1978.

25. Wagner, T.R., "Measurement of Visible Radiation Transfer in Natural Waters and a Black Ink Suspension under Laboratory Conditions," M.S., May, 1979.

26. Bennon, W.D., "Experimental Study of Combined Free and Forced Convection Heat Transfer from Horizontal Cylinders Immersed in Shallow Water Layers with a Free, Air-Water Interface," M.S., December, 1979.

27. Stoddard, M.S., "Solar Radiation Transfer in Natural Waters under Field Conditions," M.S., December, 1980.

28. Lewis, W.T., "Interferometric Study of Buoyancy-Induced Mixing in Salt Stratified Fluid Layers," M.S., December, 1980.

29. Poplawsky, C.J., "Laboratory Simulation of the Solar Pond, Double-Diffusive, Thermohaline System," M.S., December, 1980.

30. Bergman, T.L., "The Behavior of a Salt-Stratified Double-Diffusive, Thermohaline Solution Heated from Below," M.S., December, 1981.

31. Wang, G.S., "Hydrodynamic and Thermal Effects in Moving Water Layers Uniformly Heated from Below," Ph.D., May, 1982 (with R. Viskanta).

32. Craig, T.D., "Radiation Transfer in Shallow Liquid Layers," M.S., May, 1982.

33. Brosmer, M.A., "Augmentation of Heat Transfer from a Cylinder to a Liquid in Crossflow due to Gas Jet Impingement," M.S., August, 1982.

34. Houf, W.G., "Effect of Radiation on Thermal and Hydrodynamic Conditions in Shallow, Slowly Moving Liquid Layers," Ph.D., August, 1982.

35. Matthews, L.K., "Experimental and Theoretical Analysis of the High Flux-High Temperature Field in a Dielectric Subjected to Intense Solar Radiation," Ph.D., December, 1982 (with R. Viskanta).

36. Fetters, G.D., "Experimental Study of Heat Transfer through Coal-Ash Deposits," M.S., December, 1982 (with R. Viskanta).

37. Voelkel, D.D., "Model of Thermal Radiation Recuperator for Furnace Waste Heat Recovery," M.S. May, 1983.

38. Munoz, D.R., "Conditions within the Interfacial Boundary Layers of a Double-Diffusive, Thermohaline System," M.S., August, 1983 (with R. Viskanta).

39. Osborne, D.G., "Combined Convection Heat Transfer for Water Flow between Horizontal Parallel Plates with Constant Heat Fluxes," M.S., August, 1983.

40. Zumbrunnen, D.A., "An Experimental and Theoretical Investigation of the Thermal Conductances of Coal Slag Deposits and Similar Materials," M.S., May, 1984 (with R. Viskanta).

41. Schutt, J.A., "A Numerical Investigation of Mixed convection Heat Transfer in Horizontal Rectangular Ducts," M.S., May, 1984.

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