

## CURRICULUM VITAE

### GEORGE P. "BUD" PETERSON

Birth date: September 1, 1952

Birthplace: Palo Alto, CA

Marital Status: Married, four children

3600 Caddo Parkway

Boulder, CO 80303

Citizenship: USA

### PROFESSIONAL INTERESTS:

Phase Change Heat Transfer, Thermal Control of Electronic Components and Spacecraft Systems, Conduction and Thermal Contact Resistance

### EDUCATION:

Ph.D. Mechanical Engineering, Texas A&M University, College Station, TX, 1985.

M.S. Engineering, Kansas State University, Manhattan, KS, 1980.

B.S. Mathematics, Kansas State University, Manhattan, KS, 1977.

B.S. Mechanical Engineering, Kansas State University, Manhattan, KS, 1975.

### EXPERIENCE:

*University of Colorado, Boulder, Colorado*

Chancellor, July 15, 2006 - present.

*Rensselaer Polytechnic Institute, Troy, New York*

Provost and Officer of the Institute, July 1, 2000 – June 30, 2006.

*National Science Foundation (NSF), Washington, D.C.*

Program Director, Thermal Transport and Thermal Processing Program, August 1, 1993 - September 31, 1994.

*Texas A&M University, College Station, Texas*

Associate Vice-Chancellor, Texas A&M University System, July 1996 – June 2000.

Executive Associate Dean of Engineering, July 1996 - June 2000.

Head, Department of Mechanical Engineering, Texas A&M University, July 1993 - June 1996.

Tenneco Professor of Mechanical Engineering, September 1991 - June 2000.

Halliburton Professor of Engineering, September 1990 - August 1991.

Division Head, Thermal and Fluid Sciences Division, September 1989 - August 1991.

Professor of Mechanical Engineering, September 1990 - June 2000.

Associate Professor of Mechanical Engineering, September 1988 - August 1990.

Assistant Professor of Mechanical Engineering, June 1985 - August 1988.

Coordinator, Mechanical Engineering Technology, August 1983 - May 1985.

Assistant Professor of Engineering Technology, August 1981 - May 1985.

*NASA-Johnson Space Center, Houston, Texas*

Research Scientist, May 1981 - August 1981; Research Scientist, May 1982 - August 1982.

*Kansas Technical Institute, Salina, Kansas*

Associate Professor and Department Head, General Engineering Technology Department, June 1979 - May 1981.

*Shawnee Mission South High School, Overland Park, Kansas*

Mathematics Teacher, August 1978 - May 1979.

*Wabaunsee County High School, Alma, Kansas*

Mathematics, Physics, and Chemistry Teacher, August 1977 - May 1978.

*Black & Veatch Consulting Engineers, Kansas City, Missouri*

Associate Engineer, May 1975 - August 1975.

### PROFESSIONAL REGISTRATION:

Registered Engineer in Training (EIT) – State of Kansas, 4241, 1975.  
Registered Professional Engineer – State of Texas, 64403, 1988.

**NATIONAL RESEARCH COMMITTEES, BOARDS AND COUNCILS – (Last five years only)**

- Chair, NASA Reduced Gravity Flight Experiment Review Committee, NASA Glenn Research Center, Cleveland OH, November 1997 - 2003.
- Member, ASME National Task Force on the Impact of Government Budget Changes and Restructuring on Engineering, Washington D.C., 1995-2000.
- Member, ASME National Task Force on Technology Policy, Washington, D.C., April 1, 1996 - March 31, 1996-2001.
- Chair, NASA Micro Gravity Flight Experiment Evaluation and Review Committee, NASA Glenn Research Center, Cleveland OH, November 1999 - 2004.
- Member, NASA Discipline Working Group, Fluid Physics and Transport Phenomena, NASA Headquarters, Washington DC, October 1999 - 2002.
- Member, Congressional Task Force on 21<sup>st</sup> Century Technology and Economic Growth, U.S. House of Representatives, Washington, D.C., December 1999 - 2003.
- Chair, Board of Trustees, Hartford Graduate Center, Inc., July 1, 2000 – present.
- Member, Board of Directors, American Institute of Aeronautics and Astronautics (AIAA), AIAA Headquarters, Reston, VA, June 2001 - 2004.
- Member, American Association of Colleges & Universities Greater Expectations Consortium, June 2001 - present.
- Member, The National Academies – Space Studies Board, Committee on Microgravity Research, Washington, D.C., October 2001 – present.
- Member, Kansas State University Advisory Council, Manhattan, Kansas, September 2002 – present.
- Middle States Commission on Higher Education, Periodic Review Report, External Reviewer & Evaluation Team, 2003 - present.
- Accreditation Team Chair, New England Association of Schools and Colleges (NESSC), 2005 - present.
- Member, Executive Advisory Council of the National Center for women in Information Technology (NCWIT), October 2006 – present.

**BOOKS:**

1. Peterson, G. P., *An Introduction to Heat Pipes: Modeling, Testing and Applications*, John Wiley & Sons, New York, NY, September 1994, 356 pp.
2. Sobhan, C. B. and Peterson, G. P., *Microscale and Nanoscale Heat Transfer*, CRC Press Inc., New York, NY, in progress, approx. 1000 pp.

**BOOK CHAPTERS:**

1. Marto, P. J. and Peterson, G. P., Chapter 4, "Application of Heat Pipes to Electronics Cooling," in *Advances in Thermal Modeling of Electronic Components and Systems*, A. Bar-Cohen and A. D. Kraus (eds.), Hemisphere Publishing Corporation, New York, NY, pp. 283-336, 1988.
2. Peterson, G. P. and Ortega, A., "Thermal Control of Electronic Equipment and Devices," *Advances in Heat Transfer*, Vol. 20, J. P. Hartnett and T. F. Irvine (eds.), Pergamon Press, New York, NY, pp. 181-314, 1990.
3. Peterson, G. P., "Operation and Applications of Microscopic Scale Heat Pipes," *Encyclopedia of Science and Technology*, Invited Chapter, Vol. 20, McGraw-Hill Publ. Co., New York, NY, pp. 197-200, 1993.
4. Peterson, G. P., Swanson, L. W. and Gerner, F. M., "Micro Heat Pipes," in *Microscale Energy Transport*, C. L. Tien, A. Majumdar and F. M. Gerner (eds.) Taylor-Francis Publishing Co., Washington D.C., 1997, pp. 295-338.
5. Peterson, G. P., "Heat Transfer Fundamentals," *Mechanical Engineers' Handbook*, 2nd Edition, Meyer Kutz (ed.) John-Wiley & Sons, Inc., New York, NY, 1998, pp. 1367-1430.
6. Peterson, G. P., "Chapter 12 - Heat Pipes" *McGraw-Hill Handbook of Heat Transfer 3rd edition*, W. M. Rohsenow, J. P. Hartnett and Y. I. Cho, (eds.), McGraw-Hill Publishing Co., Washington D.C., 1998, pp. 12.1-12.20.

7. Ochterbeck, J. M. and Peterson, G. P., "Chapter 7 - Modeling of Heat Transfer in Heat Pipes," *Modeling of Engineering Heat Transfer Phenomena*, Computational Mechanics Publications, B. Sunden and M. Faghri, (eds.), United Kingdom Press, pp. 175-212, 1999.
8. Peterson, G. P. and C. B. Sobhan, "Chapter 11, Applications of Microscale Phase Change Heat Transfer: Micro Heat Pipes and Micro Heat Spreaders," *Handbook of Microelectromechanical Systems*, Mohamed Gad-el-Hak (ed.), Taylor and Francis Publ. Co., Boca Raton, FL, 2005, pp. 11:1-11:37.
9. Peterson, G. P., "Chapter 5: Heat Transfer Fundamentals," *Mechanical Engineers' Handbook*, 3rd Edition, Meyer Kutz (ed.) John-Wiley & Sons, Inc., New York, NY, 2005, pp. 144-211.
10. Li, H. C. and Peterson, G. P., "Heat and Mass Transfer in Fluids with Nanoparticle Suspensions," *Advances in Heat Transfer*, Vol. 39, J. P. Hartnett and T. F. Irvine (eds.), Pergamon Press, New York, NY, 2006 pp. 257-370.

#### REFEREED JOURNAL PUBLICATIONS:

1. Konz, S. A., Peterson, G. P. and Joshi, A., "Reducing Inspection Errors," *Quality Progress*, Vol. 14, No. 7, 1981, pp. 24-27.
2. Peterson, G. P., "Priming Considerations of Heat Pipes in Zero-g," *Heat Transfer and Fluid Mechanics Institute*, Vol. 28, 1982, pp. 201-211.
3. Peterson, G. P., "Capillary Priming Characteristics of a High Capacity Dual Passage Heat Pipe," *Chemical Engineering Communications*, Vol. 27, No. 1, 1984, pp. 119-126, (also as ASME Paper No. ASME 82-HT-14, June 1982).
4. Peterson, G. P., "Pre-machining of Bearing Carriers," *Robotics and Factories of the Future*, S. N. Dwivedi (ed.), Springer-Verlag, 1984, pp. 163-174.
5. Peterson, G. P., Marshal, P. F., "Analytical and Experimental Determination of Heat Pipe Priming in Micro-g," *Research and Developments in Heat Pipe Technology*, Vol. 5, K. Oshima (ed.), JaTech Publishing Co., 1984, pp. 434-439.
6. Peterson, G. P., "Applied Research: A Cooperative Venture," *Computer Aided Processes in Instruction and Research*, edited by G. C. Beakley, Academic Press, 1985, pp. 353-366.
7. Peterson, G. P., "Two-Phase Fluid Flow in Reduced Gravity Environments," *Heat Transfer and Fluid Mechanics Institute*, Vol. 29, 1985, pp. 45-59.
8. Kundu, N. and Peterson, G. P., "Transmission of Solid Particulates Using a Two-Phase Medium," *ASME Journal of Energy Resources Technology*, Vol. 109, No. 1, 1986, pp. 35-39, (also in *Proc. 7th ASME/ETCE Pipeline Engineering Symposium*, pp. 131-137, February 1986).
9. Peterson, G. P., "Thermal Control Systems for Spacecraft Instrumentation," *AIAA J. Spacecraft and Rockets*, Vol. 24, No. 1, 1986, pp. 7-14.
10. Peterson, G. P. and Compagna, G. L., "A Review of Cryogenic Heat Pipes in Spacecraft Applications," *AIAA J. Spacecraft and Rockets*, Vol. 24, No. 2, 1986, pp. 99-101, (also as AIAA Paper No. 86-1254, June 1986).
11. Grubbs, A. B. and Peterson, G. P., "Establishing an Applied Research Program," *Journal of Engineering Technology*, Vol. 3, No. 2, 1986, pp. 28-33, (also as ASME Paper No. 85-WAM-56, November 1985).
12. Peterson, G. P., "Determination of the Cross-Sectional Temperature Distribution and Boiling Limitation of a Heat Pipe," *AIAA J. Thermophysics and Heat Transfer*, Vol. 1, No. 2, 1987, pp. 189-192, (also as AIAA Paper No. 86-0066, January 1986).
13. Peterson, G. P. and Annamalai, K., "A Differential Approach to Heat Pipe Priming in Microgravity," *Chemical Engineering Communications*, Vol. 52, No. 1-3, 1987, pp. 151-161, (also in ASME FED-Vol. 42, ASME New York N.Y., pp. 25-31, December 1986).
14. Peterson, G. P., Fletcher, L. S., and Peddicord, K. L., "Thermal Conductivity in Sphere-Pac Reactor Fuels," *Journal of Nuclear Science and Technology*, Vol. 24, No. 9, 1987, pp. 1-7, (also in *Proc. 2nd ASME/JSME Thermal Engineering Joint Conf.*, pp. 439-444, March 1987).
15. Peterson, G. P. and Fletcher, L. S., "Effective Thermal Conductivity of Sintered Heat Pipe Wicks," *AIAA J. Thermophysics and Heat Transfer*, Vol. 1, No. 4, 1987, pp. 343-347, (also as AIAA Paper No. 86-1362, June 1986).
16. Peterson, G. P., "Analysis of a Heat Pipe Thermal Switch," *Research and Developments in Heat Pipe Technology*, Vol. 6, Hemisphere Publishing, New York, N.Y., 1987, pp. 177-183.
17. Peterson, G. P. and Fletcher, L. S., "Thermal Contact Conductance of Packed Beds in Contact with Flat Surfaces," *ASME J. Heat Transfer*, Vol. 110, No. 1, February 1988, pp. 38-41.
18. Peterson, G. P., Niznik B. and Chan, L. M., "Development of an Automatic Screwdriver for Use with

- Industrial Robots," *IEEE J. Robotics and Automation*, Vol. 4, No. 4., August 1988, pp. 411-413.
19. Peterson, G. P. and Fletcher, L. S., "Evaluation of the Thermal Contact Conductance Between Mold Compound and Heat Spreader Materials," *ASME J. Heat Transfer*, Vol. 110, No. 4, November 1988, pp. 996-999, (also in ASME HTD-Vol. 69, ASME New York N.Y., pp. 99-106, August 1987).
  20. Peterson, G. P. and Fletcher, L. S., "Thermal Contact Resistance of Silicon Chip Bonding Materials," in *Cooling Technology for Electronic Equipment*, W. Aung (ed.), Hemisphere Publishing Corporation, New York, N.Y., pp. 523-534, 1988.
  21. Peterson, G. P., "Analytical Development and Computer Modeling of a Bellows Type Heat Pipe for Cooling of Electronic Components," *Heat Transfer Engineering*, Vol. 9, No. 3, 1988, pp. 101-109.
  22. Havis, C. R., Peterson, G. P. and Fletcher, L. S., "Thermal Conductivity of Aligned Fiber Composite Materials," *AIAA J. Thermophysics and Heat Transfer*, Vol. 3, No. 4, 1989, pp. 416-422, (also as AIAA Paper No. 88-2658, June 1988).
  23. Peterson, G. P. and Fletcher, L. S., "On the Thermal Conductivity of Dispersed Ceramics," *ASME J. Heat Transfer*, Vol. 111, No. 4, 1989, pp. 824-829, (also in ASME WAM-Vol. 2, ASME New York N.Y., pp. 77-84, December 1988).
  24. Duncan, A. B., Peterson, G. P. and Fletcher, L. S., "Effective Thermal Conductivity Within Packed Beds of Spherical Particles," *ASME J. Heat Transfer*, Vol. 111, No. 4, 1989, pp. 830-836.
  25. Childres, W. and Peterson, G. P., "Quantification of Thermal Contact Conductance in Electronic Packages," *IEEE J. Components, Hybrids and Manufacturing Technologies*, Vol. 12, No. 4, 1989, pp. 717-723, (also in *Proc. 5th IEEE Thermal and Temperature Measurement Symposium*, pp. 30-36, February 1989).
  26. Madhusudana, C. V., Fletcher, L. S. and Peterson, G. P., "Thermal Contact Conductance of Cylindrical Joints - A Critical Review," *AIAA J. Thermophysics and Heat Transfer*, Vol. 4, No. 2, April 1990, pp. 204-211, (also as AIAA Paper No. 89-0432, January 1989).
  27. Fletcher, L. S., Peterson, G. P., Cunningham, G. and Pandey, R. K., "Spectral Properties of Selected Superconducting Materials," *AIAA J. Thermophysics and Heat Transfer*, Vol. 4, No. 3, July 1990, pp. 412-414, (also as AIAA Paper No. 89-1674, June 1989).
  28. Babin, B. R. and Peterson, G. P., "Experimental Investigation of a Flexible Bellows Heat Pipe for Cooling Discrete Heat Sources," *ASME J. Heat Transfer*, Vol. 112, No. 3, August 1990, pp. 602-607, (also as ASME Paper No. 89-HT-18, August 1989).
  29. Peterson, G. P. and Fletcher, L. S., "Measurement of the Thermal Contact Conductance and Thermal Conductivity of Anodized Aluminum Coatings," *ASME J. Heat Transfer*, Vol. 112, No. 3, August 1990, pp. 579-586, (also in ASME HTD-Vol. 123, ASME New York N.Y., pp. 117-124, December 1989).
  30. Babin, B. R., Peterson, G. P. and Wu, D., "Steady-state Modeling and Testing of a Micro Heat Pipe," *ASME J. Heat Transfer*, Vol. 112, No. 3, August 1990, pp. 595-601, (also as ASME Paper No. 89-HT-17, August 1989).
  31. Madhusudana, C. V., Peterson, G. P. and Fletcher, L. S., "The Effect of Non-uniform Pressure on the Heat Transfer in Bolted and Riveted Joints," *ASME J. Energy Resources Technology*, Vol. 112, No. 3, September 1990, pp. 174-182, (also in ASME HTD-Vol. 1, ASME New York N.Y., pp. 57-67, Dec. 1988).
  32. Fletcher, L. S., Peterson, G. P., Madhusudana, C. V., and Groll, E., "Constriction Resistance Through Bolted and Riveted Joints," *ASME J. Heat Transfer*, Vol. 112, No. 4, November 1990, pp. 857-863, (also in ASME HTD-Vol. 123, ASME New York N.Y., pp. 107-117, December 1989).
  33. Kang, T. K., Peterson, G. P. and Fletcher, L. S., "Effect of Metallic Coatings on the Thermal Contact Conductance of Turned Surfaces," *ASME J. Heat Transfer*, Vol. 112, No. 4, November 1990, pp. 864-871, (also as ASME Paper No. 89-HT-23, August 1989).
  34. Stevenson, P. F., Peterson, G. P. and Fletcher, L. S., "Thermal Rectification in Similar and Dissimilar Materials," *ASME J. Heat Transfer*, Vol. 113, No. 1, February 1991, pp. 30-36, (also in ASME HTD-Vol. 123, ASME New York N.Y., pp. 125-132, December 1989).
  35. Fletcher, L. S., Peterson, G. P. and Shaup, R., "Thermal Conductivity of Selected Superconducting Materials," *ASME J. Heat Transfer*, Vol. 113, No. 1, February 1991, pp. 274-276, (also in ASME HTD-Vol. 123, ASME New York N.Y., pp. 83-89, December 1989).
  36. Wu, D. and Peterson, G. P., "Investigation of the Transient Characteristics of a Micro Heat Pipe," *AIAA J. Thermophysics and Heat Transfer*, Vol. 5, No. 2, April, 1991, pp. 129-134, (also as AIAA Paper No. 90-0060, January 1990).
  37. Peterson, G. P., Starks, G. and Fletcher, "Thermal Conductance of Two Space Station Cold Plate Attachment Techniques," *AIAA J. Thermophysics and Heat Transfer*, Vol. 5, No. 2, April, 1991, pp. 246-247, (also as AIAA Paper No. 89-1703, June 1989).

38. Veith, D., Peterson, G. P. and Fletcher, L. S., "Macroscopic Constriction Resistance in Microelectronic Packages," *ASME J. Heat Transfer*, Vol. 113, No. 2, May 1991, pp. 494-496, (also in ASME HTD-Vol. 129, ASME New York N.Y., pp. 119-125, June 1990).
39. Saeed, B. and Peterson, G. P., "A Review of Rewetting of Hot Surfaces," *Heat Transfer and Fluid Mechanics Institute*, Vol. 32, June 1991, pp. 203-237.
40. Peterson, G. P. and Fletcher, L. S., "Heat Transfer Enhancement Techniques for Space Station Cold Plates," *AIAA J. of Thermophysics and Heat Transfer*, Vol. 5, No. 3, July 1991, pp. 423-428, (also as AIAA Paper No. 90-0541, January 1990).
41. Peterson, G. P. and Bage, B., "Entrainment Limitations in Thermosyphons and Heat Pipes," *ASME J. Energy Resources Technology*, Vol. 113, No. 3, September 1991, pp. 147-154, (also in ASME HTD-Vol. 117, ASME New York N.Y., pp. 1-9, December 1989).
42. Wu, D., Peterson, G. P. and Chang, W. S., "Transient Experimental Investigation of Micro Heat Pipes," *AIAA J. of Thermophysics and Heat Transfer*, Vol. 5, No. 4, October 1991, pp. 539-545, (also as AIAA Paper No. 90-1791, June 1990, Received 1990 AIAA "Best Paper in Thermophysics Award").
43. Peterson, G. P., Fletcher, L. S. and Blackler, D., "Thermal Performance of Thermal Pad Contact Heat Exchangers," *AIAA J. of Thermophysics and Heat Transfer*, Vol. 6, No. 1, February 1992, pp. 69-76, (also as AIAA Paper No. 91-0364, January 1991).
44. Peng, X. F., Peterson, G. P. and Wang, B. X., "Capillary Induced Rewetting in a Flat Porous Cover Layer," *Int. J. of Heat and Mass Transfer*, Vol. 35, No. 2, February 1992, pp. 319-328.
45. Ochterbeck, J. M., Peterson, G. P. and Fletcher, L. S., "Thermal Contact Conductance of Metallic Coated BiCaSrCuO Superconductor/Copper Interfaces at Cryogenic Temperatures," *ASME J. Heat Transfer*, Vol. 114, No. 1, February 1992, pp. 21-29, (also in ASME Paper HTD-Vol.1, ASME New York N.Y., pp. 275-284, March 1991).
46. Peng, X. F. and Peterson, G. P., "Acceleration Induced Depriming of External Artery Heat Pipes," *AIAA J. of Thermophysics and Heat Transfer*, Vol. 6, No. 3, July, 1992, pp. 546-549.
47. Peterson, G. P., "An Overview of Micro Heat Pipe Research," Invited Review Article, *Applied Mechanics Review*, Vol. 45, No. 5, May 1992, pp. 175-189.
48. Peterson G. P. and Pavelka, J., "Common Condenser, Multi-Bellows Heat Pipe," *IBM J. of Research and Development*, Disclosure F18-89-0447, Vol. 34, No. 10, March 1992, pp. 343-344.
49. Peng, X. F. and Peterson, G. P., "Analytical Investigation of the Rewetting of Grooved Surfaces," *AIAA J. of Thermophysics and Heat Transfer*, Vol. 6., No. 3, July 1992, pp. 563-565, (also as AIAA Paper No. 91-4004, July 1991).
50. Peng, X. F. Peterson, G. P. and Wang, B. X., "On the Wetting Mechanism of Liquid Flow on Hot Surfaces," *Int. J. Heat & Mass Transfer*, Vol. 35, No. 6, June 1992, pp. 1615-1624.
51. Peterson, G. P., Peng, X. F. and B. X. Wang, "The Effect of Plate Temperature on the Onset of Rewetting," *Int. J. Heat & Mass Transfer*, Vol. 35, No. 6, June 1992, pp. 1605-1614.
52. Peng, X. F. and Peterson, G. P., "Analysis of Rewetting for Surface Tension Induced Flow," *ASME J. of Heat Transfer*, Vol. 114, No. 3, August 1992, pp. 703-708.
53. Peng, X. F., Wang, B. X. and Peterson, G. P., "Transition and Film Boiling Heat Transfer Characteristics for Forced Flow of Subcooled Liquid Flowing Through a Horizontal Flat Duct," *Int. J. Heat and Mass Transfer*, Vol. 35, No. 11, November 1992, pp. 3077-3084.
54. Peterson, G. P. and Lu, X. J., X. F. Peng and Wang, B. X., "Analytical and Experimental Investigation of the Rewetting of Circular Channels with Internal V-Grooves," *Int. J. Heat and Mass Transfer*, Vol. 35, No. 11, November 1992, pp. 3085-3094.
55. Mallik, A. K., Peterson, G. P. and Weichold, M. H., "On the Use of Micro Heat Pipes as an Integral Part of Semiconductor Devices," *ASME J. of Electronic Packaging*, Vol. 114, No. 4, 1992, pp. 436-442, (also in *3rd ASME-JSME Thermal Engineering Joint Conf. Proc.*, Vol. 2, pp. 394-401, March 1991).
56. Ochterbeck, J. M. and Peterson, G. P., "Freeze/Thaw Characteristics of a Copper-Water Heat Pipe: Effects of Non-Condensable Gas Charge," *AIAA J. of Thermophysics and Heat Transfer*, Vol. 7, No. 1, 1993, pp. 127-132.
57. Peng, X. F., Peterson, G. P. and Lu, X. J., "Analysis of Capillary Induced Rewetting in Circular Channels with Internal Grooves," *AIAA J. of Thermophysics and Heat Transfer*, Vol. 7, No. 2, 1993, pp. 334-339.
58. Babin, B. R., Peterson, G. P. and Seyed-Yagoobi, J., "Experimental Investigation of an Ion-Drag Pump Assisted Capillary Loop," *AIAA J. of Thermophysics and Heat Transfer*, Vol. 7, No. 2, 1993, pp. 340-345, (also as AIAA Paper No. 91-1401, June 1991).
59. Peterson, G. P. and Chowdhury, A. H., "A Review of Advanced Radiator Technologies for

- Spacecraft Thermal Control," *Int. J. of Heat and Technology*, Vol. 11, No. 1, 1993, pp. 73-97.
60. Peterson, G. P. and Wu, D., "A Review of Rotating and Revolving Heat Pipes," *Int. J. of Heat and Technology*, Vol. 11, No. 2, 1993, pp. 191-228.
  61. Peterson, G. P. and Peng, X. F., "Experimental Investigation of Capillary Induced Rewetting for a Flat Porous Wicking Structure," *ASME J. Energy Resources Technology*, Vol. 115, No. 1, 1993, pp. 62-70, (also in ASME HTD-Vol. 106, ASME New York N.Y., pp. 341-348, December 1991).
  62. Peterson, G. P., Duncan, A. B. and Weichold, M. H., "Experimental Investigation of Micro Heat Pipes Fabricated in Silicon Wafers," *ASME J. Heat Transfer*, Vol. 115, No. 3, 1993, pp. 751-756.
  63. Kim, B. H., Peterson, G. P. and Kihm, K. D., "Analytical and Experimental Investigation of Entrainment in Capillary Pumped Wicking Structures," *ASME J. Energy Resources Technology*, Vol. 115, No. 4, 1993, pp.278-286.
  64. Swanson, L. and Peterson, G. P., "The Evaporating Extended Meniscus in a V-Shaped Channel," *AIAA J. of Thermophysics and Heat Transfer*, Vol. 8, No. 1, 1994, pp. 172-181, (also in ASME Paper HTD-Vol. 200, ASME New York N.Y., pp. 9-22, August 1992).
  65. Kihm, K. D., Kim, B. H. and Peterson, G. P., "Entrained Sprays from Meshed-Interfaces Occurring in a Heat Pipe," *AIAA J. Thermophysics and Heat Transfer*, Vol. 8, No. 1, 1994, pp. 184-187.
  66. Lee, Y. M., Haji-Sheik, A., Fletcher, L. S. and Peterson, G. P., "Effective Thermal Conductivity in Multi-dimensional Bodies," *ASME J. Heat Transfer*, Vol. 116, No. 1, 1994, pp. 17-27, (also in ASME Vol. HTD-106, ASME New York, N.Y., pp. 1-9, August 9-12, 1992).
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  68. Ha, J. M. and Peterson, G. P., "Analytical Prediction of the Axial Dryout of an Evaporating Liquid Film in Triangular Micro Channels," *ASME J. Heat Transfer*, Vol. 116, No. 2, 1994, pp. 498-503, (also in ASME Vol. HTD Vol. 253, ASME New York N.Y., pp. 53-62, August 8-11, 1993).
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54. Peterson, G. P., "An Overview of Heat Pipe Applications," ITRI Workshop on Heat Pipe Theory and Applications, Hinschu, Taiwan, ROC, December 9-12, 1992.
55. Peterson, G. P., "Heat Pipes: Fundamentals of Operation," ITRI Workshop on Heat Pipe Theory and Applications, Hinschu, Taiwan, ROC, December 9-12, 1992.
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  101. Wang, Y. and Peterson, G. P., "Experimental Investigation of Wire Bonded Micro Heat Pipe Arrays," paper no. AIAA-2001-3092, 35<sup>th</sup> AIAA Thermophysics Conference, Anaheim, CA June 11-14, 2001.
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  110. Sobhan, C. B. and Peterson, G. P., "Modeling of the Flow and Heat Transfer in Micro Heat Pipes," 2nd International Conference on Microchannels and Minichannels, Rochester, NY, June 15-17, 2004.
  111. Ma, H. B., Lofgreen, K. P. and Peterson, G. P., "An Experimental Investigation of a High Flux Heat Pipe Heat Sink, Proc. ASME Heat Transfer Division, IMECE2004-59764, Washington, D.C., November 13-19, 2004.
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  113. Wang, B. X., Li, H., Peng, X. F. and Peterson, G. P., "Numerical Simulation for Microconvection around Brownian Motion Moving Nano-Particles," 3<sup>rd</sup> Int'l Symposium on Two-Phase Flow Modeling and Experimentation, Pisa, Italy, September 22-24, 2004.
  114. Li, C and Peterson, G. P., "Experimental Study of Thickness Effects in Evaporation-Boiling on Thin Sintered Copper Mesh Surfaces," Proc. ASME Heat Transfer Division, NHTC2005-72431, San Francisco, CA, July 17-22, 2005.

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116. Li, C., Peterson and G. P. "Experimental Study of the Effects of Volumetric Porosity and Critical Meniscus Radius on Evaporation/Boiling from This Capillary Wicks," *Proc. of the 2005 International Mechanical Engineering Congress*, paper no. IMECE 2005-80152, Orlando, FL, November 5-11, 2005.
117. Li, H. and Peterson, G. P., "Dual Role of Nanoparticles in the Thermal Conductivity Enhancement of Nanoparticle Suspensions," *Proc. of the 2005 International Mechanical Engineering Congress*, paper no. IMECE 2005-80451, Orlando, FL, November 5-11, 2005.
118. Carbajal, G., Peterson, G. P. and Sobhan, C. B., "A Quasi 3D Analysis of the thermal Performance of a Heat Pipe Thermal Spreader," 9<sup>th</sup> AIAA/ASME Joint Thermophysics and Heat Transfer Conf., paper no. AIAA 2006-3106, San Francisco, CA, June 4-8, 2006.
119. Li, H. and Peterson, G. P., "Transport Phenomena of Nanoparticle Suspension Pulse-Heated under Various Heating Conditions," 9<sup>th</sup> AIAA/ASME Joint Thermophysics and Heat Transfer Conf., paper no. AIAA 2006-3120, San Francisco, CA, June 4-8, 2006.
120. Li, C. H., Williams, W., Hu, L. W., and Peterson, G. P., "Transient and Steady-state Experimental Comparison of Effective Thermal Conductivity of Al<sub>2</sub>O<sub>3</sub>/Water," Energy Nanotechnology International Conference, Boston, MA, June 26-28, 2006.
122. Sobhan, C., Arimboor, K. Abraham, T. and Peterson, G. P., "Microchannel Optimizatrion for Heat Dissipation from a Solid Substrate - ECOS Efficiency, Cost, Optimization, Simulation and Environ, Impact of Energy Systems, Crete, Greece, July 12-14., 2006.
123. Chen, Y. and Peterson, G. P., "Influence of Hydraulic Diameter on Flow Condensation in Silicon Microchannels," 13th International Heat Transfer Conference, Sydney Australia, August 13-18, 2006.
124. Li, C. and Peterson, G. P., "Comprehensive Comparisons between Evaporation and Pool Boiling" *Proc. of the 2006 International Mechanical Engineering Congress*, paper no. IMECE 2006-15905, Chicago, Ill, November 5-10, 2006.

#### EDITED VOLUMES

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2. Peterson, G. P. and Lau, S. C., (eds.), *Proceedings of the 3rd ASME/ETCE Industrial Pollution Control Symposium*, American Society of Mechanical Engineers, Dallas, Texas, February 17-21, 1985.
3. Imber, M., Peterson, G. P. and Yovanovich, M. M., (eds.), *Fundamentals of Conduction and Recent Developments in Contact Resistance*, ASME HTD-Vol. 69, ASME, New York, N.Y., 1987.
4. Peterson, G. P., (ed.), *Proceedings of the 1990 Intersociety Conference on Thermal Phenomena in Electronic Systems*, Institute of Electrical and Electronic Engineers, Library of Congress No. 89-81075, Las Vegas, NV, May 23-25, 1990.
5. Peterson, G. P. and Simons, R., (Guest eds.), *IEEE Trans. J. Components, Hybrids, and Manufacturing Technology*, Vol. 13, No. 4, December 1990.
6. Peterson, G. P. and Yovanovich, M. M. (ed.), *Fundamental Problems in Conduction Heat Transfer*, ASME HTD-Vol. 207, ASME, New York, N.Y., 1992.
7. Bayatizglou, Y. and Peterson, G. P., (ed.), *Fundamental Issues in Micro Scale Heat Transfer*, ASME HTD-Vol. 215, ASME, New York, N.Y., 1992.
8. Cho, D., Peterson, G. P., Pisano A. P. and Friedrich, (ed.), *Symposium on Micromechanical Systems*, ASME WAM-Vol. 40, ASME, New York, N.Y., 1992.
9. Peterson, G. P. et al., "Applications of Information Technologies to Engineering and Science Education, *IEEE Transactions on Education* - Special Issue, June 1996.
10. Majumdar, A., Peterson, G. P. and Poulikakos, D., "Special Issue on Micro Scale Heat Transfer," Guest Editor, *ASME Journal of Heat Transfer*, Vol. 124, April 2002.

#### GRADUATE STUDENT SUPERVISION



**Ph.D. Students and Thesis - Texas A&M University**

1. Jay M. Ochterbeck - Ph.D., August 1993, "Restart of a Heat Pipe from the Frozen State: Incorporating Thermal History Effects"
2. Allen B. Duncan - Ph.D., August 1993, "Experimental and Analytical Evaluation of Etched Micro Heat Pipes"
3. Arnab K. Mallik - Ph.D, August 1993, "Vapor Deposited Micro Heat Pipe Modeling, Testing, and Development"
4. Bonghun Kim, Ph.D. - May 1994, "Analytical and Experimental Investigation of Entrainment in Operating Heat Pipes"
5. Hongbin Ma - Ph.D., August 1995, "The Theoretical Analysis and Experimental Investigation of Pressure Drop and Maximum Heat Transport in Triangular Grooves - A study of Idealized Micro Heat Pipes"
6. Ja-Mann Ha, Ph.D. - December 1995, "Capillary Performance and Heat Transfer of the Evaporating Liquid Thin Film in a Triangular Microgroove"
7. Chang S. Chang - Ph.D., December 1996, "Frictional Pressure Drop and Heat Transfer Characteristics in Microchannels"
8. James T. Dickey - Ph.D., December 1996, "Investigation of Liquid-Vapor Flow and heat Transfer in Porous Media"
9. Xiao-Jun Lu, Ph.D. - December 1997 "Analysis of the Freeze/Thaw Characteristics of External Artery Heat Pipes"
10. Donald P. Shatto - Ph.D., December 1998 "Vertical In-tube Flow Boiling of Mixtures"
11. Yaxiong Wang - Ph.D., May 2001 "Flexible Micro Scale Heat Pipe Radiators"

**Ph.D. Students and Thesis – Rensselaer Polytechnic Institute**

12. Chen Li - Ph.D. August 2006, "Evaporation and Nucleate Boiling on Thin Micro Porous Coated Surfaces"
13. Gerardo J. Cabajal - Ph.D. December 2006, "Analytical Modeling and Experimental Investigation of Passive Jet Blast Deflectors"
14. Calvin Hong Li - Ph.D. in progress, "Numerical Simulation of Microconvection around Nano-Particles with Brownian Motion in Liquids"

**M.S. Students and Thesis - Texas A&M University**

1. Preetam Patnaik - M.S., August 1987, "Parametric Modeling of a Bellows Heat Pipe for Electronic Component Cooling"
2. Clark R. Havis, M.S. - December 1987, "Effects of Fiber Direction on Heat Conduction in Unidirectionally Aligned Fiber Composites"
3. Tik K. Kang - M.S., December 1989, "Effect of Metallic Coatings on the Thermal Contact Conductance of Turned Surfaces"
4. Abu H. Chowdhury - M.S., December 1989, "Reduced Pressure and Temperature Reclamation of Water Using the GE Integrated Water-Waste Management System for Potential Space Flight Applications"
5. Allen B. Duncan - M.S., December 1990, "Effective Thermal Conductivity of Packed Beds of Spheres"
6. Jay M. Ochterbeck - M.S., August 1990, "Thermal Contact Conductance of Metallic Coated Superconductor/Copper Interfaces at Cryogenic Temperatures"
7. Bruce R. Babin - M.S., August 1991, "Ion Drag Pump Assisted Heat Pipes"
8. Marvin D. Szeto - M.S., May 1992, "Experimental Investigation of a Micro Heat Pipes in Zero-g"
9. James T. Dickey - M.S., December 1993, "Modeling and Testing of a Capillary Pressure Driven Heat Transfer Loop"
10. Alicia H. Howard - M.S., December 1993, "Evaluation of a Heat Pipe Finned Heat Rejection System"
11. Xiaoquin Liu - M.S., December 1996, "Numerical modeling of the Vapor Flow in Micro Heat Pipes"
12. Donald P. Shatto - M.S., May 1996, "An Experimental Investigation of the Effects of Velocity and Subcooling on Convective Film Boiling in a Circular Tube"
13. Tony K. Morris - M.S., August 1997, "Vapor Pressure Measurements for Dichlorosilane"
14. Brian Lundy - M. S., December 1998, "A Visualization Comparison of Convective Flow Boiling Heat

- Transfer Augmentation Devices"
15. K. Renzi - M.S., December 1998, "Designing, Testing and Analyzing Coupled Flux Transformer Heat Pipes"
  16. David Westheimer - M. S., May, 2000, "Two-Phase Heat-Transfer and Fluid Dynamics of an Annular Heat Exchanger in Micro Gravity Conditions"
  17. J. Chesser - M.S., May 2000, "An Investigation of a Heat Pipe Heat Sink for Microprocessor Cooling"
  18. Rodolfo Barron-Jimenez - M. S., May 2001, "Condensation Heat Transfer in Microchannels"
  19. Debbie McDaniels - M. S., May 2001, "Experimental Investigation of Polymer-based Micro Heat Pipes for a Flexible Spacecraft Thermal Radiator"

#### **M.S. Students and Thesis – Rensselaer Polytechnic Institute**

20. Josh Hilderbrand – M.S. December 2004, " Design of a Flat Bendable Heat pipe for the Treatment of Neo-Cortical Epilepsy"
21. Benjamin Lin – M.S. in progress, "Thermal treatments for Neo-Cortical Epilepsy"

#### **Senior Honors Theses Directed - Texas A&M University**

1. Peter F. Stevenson - Senior Honors Thesis, "Thermal Rectification in Dissimilar Metal Contacts," May 1988.
2. Gregory Starks - Senior Honors Thesis, "Comparative Evaluation of Two Attachment Techniques for Space Station Cold Plates," May 1989.
3. Nancy K. Tsai - Senior Honors Thesis, "An Investigation of Entrainment limits in Heat Pipes," May 1990.
4. Kelly Albrecht - Senior Honors Thesis, "A Study of the Refrigeration Characteristics of a Vortex Heat Exchanger," May 1991.
5. Tony K. Morris - Senior Honors Thesis, "Pool Boiling in Reduced Gravity Environments," August 1995.
6. Jason A. Besly - Senior Honors Thesis, "Visualization and Analysis of the Onset of Flooding and Entrainment in a Closed Two-Phase Thermosyphon," May 1996.
7. Frank Prytle, III - Senior Honors Thesis, "Convective Heat Transfer from Fibrous Media for the Thermal Control of Electronic Components, May 1997
8. Brian Corbett, - Senior Honors Thesis, "Silicon Fabricated Micro Thermal Structures, May 2000

#### **PROFESSIONAL SERVICE:**

##### **Current Editorial Activities**

- Editorial Advisory Board, *Advances in Transport Phenomena*, Elsevier Science Ltd., January 2006 – present.
- Associate Editor, *AIAA Journal of Thermophysics and Heat Transfer*, American Institute of Aeronautics and Astronautics, January 1996 - present.
- Editor, *Journal of Microscale Thermophysical Engineering*, Taylor and Francis Publ. Co., May 1996 - present.
- Editorial Advisory Board, *Int'l. J. of Thermal Science*, March 2001 - present.

##### **Past Editorial Activities**

- Editorial Board, *Int'l. J. of Heat and Fluid Flow*, Elsevier Science Ltd., August 1, 1994 – February 2006.
- Editor for North America, *Experimental Thermal and Fluid Science*, Elsevier Science Ltd., May 1, 1993 - April 30, 2003.
- Associate Editor, *ASME Journal of Heat Transfer*, American Society of Mechanical Engineering, January 2000 - December 31, 2003.
- Editorial Advisory Board, *JSME Int'l. J. of Fluids and Thermal Engineering*, Japan Society of Mechanical Engineering, January 1998 – December 2001.
- Editorial Board, *Int'l. J. of Heat and Fluid Flow*, August 1, 1994 - July 31, 2000.
- Associate Editor, *ASME Journal of Energy Resources Technology*, American Society of Mechanical Engineering, January 1986 - December 1992.
- Editor, *Heat Transfer Division Newsletter*, American Society of Mechanical Engineering, June 1990 -

May 1993.

- Editor, *Heat Transfer - Recent Contents*, American Society of Mechanical Engineering, June 1992 - May 1997.

**ASME - American Society of Mechanical Engineers, (Fellow)**

- Peer Reviewer, *ASME J. Heat Transfer*, *J. Of Fluids Engineering*, *J. Of Energy resources Technology*
- Region X Representative, Mechanical Engineering Technology Department Heads Committee, July 1984-June 1985.
- Petroleum Division, Industrial Pollution Control Operating Committee, Vice-Chairman, 1985; Chairman, January 1985-January 1987.
- Heat Transfer Division, K-8 Committee on Theory and Fundamental Research, Member, December 1986; Secretary, May 1984-April 1985.
- Brazos Valley Section of ASME, Chairman, May 1986-April 1987; Vice-Chairman; May 1985-April 1986; Secretary, May 1984-April 1985.
- Petroleum Division Executive Committee, Member, June 1986-July 1992; Treasurer, 1988, Secretary, 1989, 1st Vice-Chairman, 1990, Chairman, 1991, Past Chairman, 1992.
- Committee on the Technology Executives Conference (CTEC), June 1989-May 1992.
- Region X Commission on Technical Affairs, Chairman, June 1989-May 1992.
- Heat Transfer Division Executive Committee, Chair, July 1, 1997, Secretary, July 1, 1993-June 30, 1995, Member, July 1, 1995-June 31, 1996.
- Member, ASME Basic Engineering Group Operating Board, Washington D. C., 1998-2000.

**AIAA - American Institute of Aeronautics and Astronautics, (Fellow)**

- Peer Reviewer, *AIAA Journal*, *AIAA J. of Thermophysics and Heat Transfer*, *AIAA J. of Spacecraft and Rockets*.
- AIAA Representative to the National Heat Transfer Conference, 1990-1993.
- General Chair, AIAA Summer Conferences, Albuquerque, NM, June 15-18, 1998.
- AIAA Fellow Grade Selection Committee - Peer Group Review Committee, 1998-2002
- AIAA Pre-College Outreach Committee, 2000-2002
- AIAA Vice President for Education, 2001-2003

**ABET - Accreditation Board for Engineering and Technology**

- Technology Accreditation Commission, Ad hoc Visitor - Mechanical Engineering Technology, June 1985-June 1991, Nine Accreditation visits made.
- Engineering Accreditation Commission, Ad hoc Visitor - Mechanical Engineering, August 1991-Present, Six accreditation visits made.

**ICHMT - International Centre for Heat and Mass Transfer**

- Member, International Scientific Council, July 2002 – June 2008.

**AIHTC - Assembly for International Heat Transfer Conferences**

- Secretary, US Scientific Committee, 1987-1990.
- Session Chair, "Energy, Urban Processes," 9th International Heat Transfer Conference, Jerusalem, Israel, August 22, 1990.
- Member, US Scientific Committee, 2000-2002.

**RESEARCH AND RELATED ACTIVITIES:**

**Funded Research Projects**

- "Computer Modeling and Simulation of Dual Passage Heat Pipes," NASA-JSC, Houston, Texas, G. P. Peterson (PI), May 15, 1982-January 15, 1983, \$6,000.
- "Bearing Carrier Preconditioning," Lufkin Industries, Lufkin, Texas, G. P. Peterson (Co-PI) and K. K. Gowdy (Co-PI), July 18, 1983 - February 28, 1984, \$7,437.
- "Joint Studies Program, IBM/TAMU," IBM-Austin, Texas, G. P. Peterson (PI), January 1, 1984-December 31, 1986, \$150,000.
- "Analytical and Experimental Determination of Boiling, Dryout and Wicking Limitations of Heat

- Pipes," NASA-Johnson Space Center (JSC), Houston, Texas, G. P. Peterson (PI), September 1, 1984-December 31, 1984, \$10,800.
- "Analytical Development and Computer Modeling of a Bellows Type Heat Pipe for the Cooling of Electronic Components," IBM-E. Fishkill, New York, G. P. Peterson (PI), October 1, 1984-August 31, 1985, \$14,310.
  - "Assembly of Laminated Magnets for a Superferric Supercollider," Houston Area Research Center, G. P. Peterson (PI) and T. Sastri (Co-PI), The Woodlands, Texas, September 1, 1984-August 31, 1984, \$12,844.
  - "Low Temperature Design Using Cryogenic Heat Pipes," Eastman Kodak Company, Rochester, New York, G. P. Peterson (PI), October 14, 1985-January 31, 1986, \$7,500.
  - "Contact Conductance Between Spherical Particles in Packed Beds," University Minigrant, G. P. Peterson (PI), December 16, 1985-January 1, 1987, \$400.
  - "Liquid-Vapor Flow Regimes in Microgravity Environments," Texas A&M Engineering Excellence Program, G. P. Peterson (PI), January 16, 1986-December 31, 1986, \$16,707.
  - "Computer Modeling of a Modified Artery-Cryogenic Heat Pipe," Eastman Kodak Company, Rochester, New York, G. P. Peterson (PI), February 1, 1986-January 1, 1988, \$26,574.
  - "Testing and Evaluation of a Bellows Type Heat Pipe for the Cooling of Electronic Components," IBM-E. Fishkill, New York, G. P. Peterson (PI), March 1, 1986-February 28, 1988, \$77,695.
  - "Conceptual Design for a Food Production, Wastewater Processing and Gas Regeneration Module," NASA-JSC, Houston, Texas, G. P. Peterson (Co-PI), C. Patterson (Co-PI) and P. Sharpe (Co-PI), May 19, 1986-May 1, 1987, \$80,669.
  - "Thermal Test Bed System Analysis," Rockwell International-Space Systems Division, Houston, Texas, G. P. Peterson (PI), May 30, 1986-January 31, 1987, \$4,400.
  - "Effective Thermal Conductivity of Laminated and Composite Materials for Electric Discharge Machining," AGIE Corporation, Locarno, Switzerland, G. P. Peterson (Co-PI) and L. S. Fletcher (Co-PI), June 1, 1986-May 31, 1987, \$24,784.
  - "Thermal Test Bed System Analysis-Phase II," Rockwell International-Space Systems Division, Houston, Texas G. P. Peterson (PI), July 1, 1987-June 30, 1988, \$3,425.
  - "Modification and Refurbishment of the General Electric Integrated Waste and Water Management System," NASA-JSC, Houston, Texas, G. P. Peterson (Co-PI) and W. M. Moses (Co-PI), July 1, 1987-December 31, 1987, \$50,000.
  - "Conceptual Design for a Food Production, Wastewater Processing and Gas Regeneration Module-Phase II," NASA-JSC, Houston, Texas, O. W. Nicks (PI) and G. P. Peterson (Co-PI) and W. M. Moses (Co-PI), September 1, 1987-March 31, 1988, \$98,000.
  - "International Enhancement Grant - Enhancing the Exchange of Faculty and Students Between Texas A&M University and the Ruhr University of Bochum," Texas Office of International Coordination, G. P. Peterson (PI), January 1, 1988-May 31, 1988, \$600.
  - "Improving the Thermal Contact Conductance through the Use of Metallic Coatings," NASA-JSC, Houston, Texas, G. P. Peterson (PI) and L.S. Fletcher (Co-PI), Feb. 1, 1988-Jan.31, 1989, \$44,726.
  - "Thermal Contact Conductance and Conductivity of Anodized Coatings," IBM Corporation, Austin, Texas, G. P. Peterson (Co-PI) and L. S. Fletcher (Co-PI), April 1, 1988-January 1, 1989, \$10,000.
  - "Steady-state and Transient Analysis of Miniature Heat Pipes," Wright Patterson AFB, Dayton, Ohio, G. P. Peterson (PI), May 1, 1988-February 24, 1990, \$120,000.
  - "Investigations of the Boiling and Entrainment Limits in Heat Pipes Through Flow Visualization," NASA ODAA, Washington D.C., G. P. Peterson (PI), June 1, 1988-August 31, 1989, \$59,100.
  - "Improving the Performance and Reliability of Microelectronic Devices Through Enhanced Thermal Control," Texas Advanced Technology Program, Austin, Texas, L. S. Fletcher (Co-PI) and G. P. Peterson (Co-PI), June 1, 1988-August 31, 1990, \$218,500.
  - "Development of an Integrated Micro Heat Pipe for Thermal Control of Microelectronic Devices," NASA ODAA, Washington D.C., G. P. Peterson (PI), June 1, 1989-August 31, 1990, \$50,000.
  - "Thermal Contact Conductance of Finned Interfaces," Foster-Miller Inc., Waltham, MA, G. P. Peterson (Co-PI) and L. S. Fletcher (Co-PI), May 1- June 30, 1989, \$1,500.
  - "New Power Generation Subsystems for Satellites," Naval Research Labs, Washington, D.C., A. J. Appleby (PI) and G. P. Peterson (Co-PI), July 1, 1989 - December 31, 1989, \$20,092.
  - "Determination of the Thermal Contact Conductance and Adhesion Characteristics of Coldplate Thermal Test Pads," Rockwell International, Canoga Park, CA, G. P. Peterson (PI) and L. S. Fletcher (Co-PI), July 1, 1989 - May 31, 1990, \$98,000.

- "Numerical Investigation of Entrainment In Heat Pipes," Houston Area Research Center, The Woodlands, TX, G. P. Peterson (PI), August 17, 1989 - December 31, 1989, \$80,000.
- "Incorporation of Micro Heat Pipes into Semiconductor Devices," Texas Advanced Technology Program, Austin, Texas, G. P. Peterson (PI) and M. H. Weichold (Co-PI), Jan. 1, 1990-December 31, 1992, \$152,480.
- "Analytical Investigation of the Frozen Startup Characteristics of High Capacity Heat Pipes," NASA-Code C, Washington, D.C., G. P. Peterson (PI), January 1, 1990-December 31, 1990, \$160,000.
- "Determination of the Thermal Contact Conductance of Diamond Coated Thermal Test Pads," EER Systems, Seabrook, MA, G. P. Peterson (PI) and L. S. Fletcher (Co-PI), April 1 - July 30, 1990, \$24,000.
- "Investigation of Entrainment in Capillary Pumped Devices," National Science Foundation (NSF), Washington, D.C., G. P. Peterson (Co-PI) and K. D. Kihm (Co-PI), August 1, 1990 - July 31, 1993, \$149,597.
- "Development of a Generalized Model for High Capacity External Artery Heat Pipes," McDonnell-Douglas Corporation, Houston, TX, G. P. Peterson (PI), August 1, 1990 - October 1, 1990, \$12,540.
- "Micro Heat Pipe Construction Using Anisotropic Etchants," NASA ODAA, Washington D.C., G. P. Peterson (PI), November 1, 1990 - December 31, 1992, \$40,000.
- "Investigation of the Frozen Startup Characteristics of Two High Capacity Heat Pipes in Microgravity: A Shuttle Flight Experiment," NASA-Code C, Washington, D.C., G. P. Peterson (PI), January 1, 1991-December 31, 1992, \$200,000.
- "Measurement of the Thermal Conductivity and Contact Conductance of Thermosetting Encapsulated Mold Compounds," IBM Corporation, Endicott, NY, G. P. Peterson (PI) and L. S. Fletcher (Co-PI), January 1, 1991 - June 31, 1991, \$10,000.
- "An Investigation of Thermal Enhancement Techniques for Navy SEM Guide Ribs and Card Rails," DOD/DON Naval Weapons Support Center, Crane, IN, L. S. Fletcher (PI) and G. P. Peterson (Co-PI), December 26, 1990 - December 31, 1993, \$354,730.
- "Rewetting of Hot Grooved Surfaces," NASA-JSC, Houston, Texas, G. P. Peterson (PI), April 1, 1991-March 30, 1993, \$59,400.
- "Microgravity Testing and Evaluation of the Transient Operating Characteristics of Miniature Heat Pipes: A Shuttle Flight Experiment," NASA-Code C, Washington, D.C., G. P. Peterson (PI), June 1, 1991 - May 31, 1992, \$28,440.
- "Development of a Numerical Model to Predict the Frozen Startup Characteristics of External Artery Heat Pipes," NASA-Code C, Washington, D.C., G. P. Peterson (PI), January 1, 1992-December 31, 1992, \$40,000.
- "Data Acquisition for Investigation of the Frozen Startup Characteristics of Heat Pipes," NASA-Code C, Washington, D.C., G. P. Peterson (PI), June 1, 1992-May 31, 1995, \$33,500.
- "Performance Enhancement of Large Scale Thermosyphons," ABB Preheater Inc., Wellsville, N.Y., G. P. Peterson (PI), November 1, 1992-July 31, 1993, \$18,000.
- "Multi-component Flow Boiling," Heat Transfer Research Inc., College Station, TX, G. P. Peterson (PI), January 15, 1993-May 31, 1993, \$9,418.
- "Performance Evaluation of Micro Heat Pipes Operating at Cryogenic Temperatures," Wright Research and Development Center, Dayton, Ohio, G. P. Peterson (PI), January 1, 1993-December 31, 1993, \$45,000.
- "Convective Flow Boiling of Multi-component Mixtures," Center for Energy and Mineral Resources (CEMR), TAMU, College Station, TX, G. P. Peterson (PI), September 1, 1993-August 31, 1994, \$18,800.
- "Thermal Transport and Thermal Processing - Program Director," National Science Foundation, Washington, D.C., G. P. Peterson (PI), August 1, 1993 - July 31, 1994, \$144,120.
- "Data Acquisition System Design for the COMET Spacecraft," NASA-Code C, Washington, D.C., G. P. Peterson (PI), September 1, 1993-August 31, 1994, \$60,000.
- "Ultra Heat Spreading Substrates: Micro Heat Pipes Within Silicon Substrates," Texas Advanced Technology Program, Austin, Texas, G. P. Peterson (PI), January 1, 1994-December 31, 1996, \$217,725.
- "Convective Flow Boiling of Multi-component Mixtures," Texas Advanced Technology Program, Austin, Texas, G. P. Peterson (PI), January 1, 1996-December 31, 1998, \$139,092.
- "Fluid Flow and Heat Transfer in Fibrous Heat Sinks," Motorola, Power PC Division, Austin Texas,

- G. P. Peterson (PI), December 15, 1995, - December 31, 1996, \$35,000.
- "Solid Sorption Machines with Heat Pipe Heat Exchangers for Heat Transfer Enhancement and Thermal Control," US Civilian Research and Development Foundation, Arlington, VA, G. P. Peterson (PI), January 1, 1997 - December 31, 1997, \$40,460.
  - "Condensation Phenomena in Micro Grooves," National Science Foundation (NSF), Washington, D.C., G. P. Peterson (PI), January 15, 1997 - December 31, 2000, \$179,965.
  - "Analysis of Operation and Manufacture of a Low Cost Innovative Heat Pipes for a High Volume Desktop," Intel Corporation, Hillsboro, OR, G. P. Peterson (PI), September 1, 1996 - December 31, 1998, \$150,000.
  - "Flexible Micro Scale Heat Pipe Radiators for Spacecraft Applications," jointly funded by the Texas Space Grant Consortium and Lockheed, Martin, Vought Systems, Dallas, TX, G. P. Peterson (PI), September 1, 1998 - August 31, 2001, \$175,000.
  - "Low Cost thermal Management for Desktop Computers," Intel Corporation, Hillsboro, OR, G. P. Peterson (PI), September 1, 1999 - August 31, 2000, \$62,040.
  - "Thin Film Evaporation," Office of Naval Research, Washington, DC, G. P. Peterson (PI), October 1, 2000 – September 30, 2003, \$288,070.
  - "Heat Pipe Applications on High Volume Desktop," Intel Corporation, Hillsboro, OR, G. P. Peterson (PI), July 1, 2001 - December 31, 2002, \$24,635.
  - "Flexible Heat Pipe Radiators for Spacecraft Applications," Lockheed, Martin, Vought Systems, Dallas, TX, G. P. Peterson (PI), September 1, 1998 - August 31, 2001, \$50,000.
  - "Thermal Control Systems of the Gossamer Spacecraft" jointly funded by NASA – Goddard and Lockheed, Martin, Vought Systems, Dallas, TX, G. P. Peterson (PI), September 1, 2001 - August 31, 2002, \$250,000.
  - "New Strategies for Neo-Cortical Epilepsy," National Institute for the Humanities (NIH), Washington, D.C., G. P. Peterson (Co-PI) w/ Dr. Steve Rothman, Washington University, St Louis, MO, April 1, 2003 – March 31, 2008, Total Award \$1.6M, sub-contract to Rensselaer \$360,000.
  - "A Study of Passive Jet Blast Deflection Concepts," Office of Naval Research, Washington, DC, G. P. Peterson (Co-PI) w/Haydn Wadley, University of Virginia, June 1, 2003 – September 30, 2006, Total Award \$3.5M, sub-contract to Rensselaer \$309,970.
  - "Condensation Phenomena in Modified Micro/Nano-Scale Functional Surfaces," National Science Foundation (NSF), Washington, D.C., G. P. Peterson (PI), August 1, 2003 – July 31, 2006, \$294,344.
  - "Modeling and Simulation Tools for Evaluation of Passive jet Blast Deflection Concepts," Office of Naval Research, Washington, DC, G. P. Peterson (Co-PI) w/Haydn Wadley, University of Virginia, January 1, 2005 – June 30, 2005, Total Award \$253,323, sub-contract to Rensselaer \$46,980.
  - "An Experimental and Analytical Investigation of Condensing Radiators for Application to Reduced Gravity," National Aeronautics and Space Administration (NASA), Washington, D.C., G. P. Peterson (PI), January 1, 2005 – December 31, 2006, \$293,931.
  - "Biomimetic nanostructures to Promote Dropwise Condensation," National Science Foundation (NSF), Washington, D.C., R. Yang, S.M. George, G. P. Peterson and Z. Ren, (Co-PI), June 1, 2007 – July 31, 2008, \$140,927.

#### **Equipment Grants:**

- "Thermal Conductivity Measurement Facility," DOE Equipment Grant, L. S. Fletcher (Co-PI) and G. P. Peterson (Co-PI), August 19, 1988, \$20,544.
- "High Vacuum Test Chamber," DOE Equipment Grant, G. P. Peterson (Co-PI) and L. S. Fletcher (Co-PI), December 12, 1988, \$19,620.
- "Vacuum Pumping System," DOE Equipment Grant, G. P. Peterson (Co-PI) and L. S. Fletcher (Co-PI), July 6, 1989, \$23,843.
- "Surface Measurement Facility," DOE Equipment Grant, L. S. Fletcher (Co-PI) and G. P. Peterson (Co-PI), August 19, 1989, \$50,300.

#### **TEES Summer Undergraduate Research Fellowships:**

- "External Memory Address and Palletizing Using a Unimate 2005P," Texas Engineering Experiment Station Undergraduate Research Fellowship, M. Anderson, student and G. P. Peterson, Faculty Sponsor, competitive and subject to peer review, May 1983, \$2,000.

- "Advanced Scanning Architecture," Texas Engineering Experiment Station Undergraduate Research Fellowship, A. C. Hunt, student and G. P. Peterson, Faculty Sponsor, competitive and subject to peer review, May 1984, \$2,000.
- "Testing and Evaluation of a Flexible Heat Pipe for the Cooling of Electronic Components," Texas Engineering Experiment Station Undergraduate Research Fellowship, B. R. Babin, student and G. P. Peterson, Faculty Sponsor, competitive and subject to peer review, May 1987, \$2,000.

## HONORS AND AWARDS:

### Teaching Awards

- Exxon Award for Excellence in Teaching and Research, December 18, 1987.
- J. G. H. Thompson Award for Excellence in Teaching, awarded by Pi Tau Sigma, May 2, 1988.
- College of Engineering Outstanding Teaching Award, Texas A&M University Association of Former Students, September 14, 1990.
- 1991-92 Teacher/Scholar Award, Texas A&M University Honors Program, May 5, 1992.
- 1993 Texas A&M University Faculty Distinguished Achievement Award for Teaching, Texas A&M University - Association of Former Students, May 6, 1993.

### National and International Awards

- ASME Ralph James Award for Outstanding Contribution to the Petroleum Division, February, 1986.
- ASEE/DOW Chemical Corporation-Outstanding Young Faculty Award, June, 1988.
- NASA Innovation Award, *Micro Heat Pipe Panels*, (NASA), October 3, 1990.
- AIAA Associate Fellow, 1991, Fellow 1998.
- ASME Gustus L. Larson Memorial Award, November, 1992.
- ASME Ralph James Award, January, 1993
- ASME Petroleum Division-Past Chairman's Award, February, 1993.
- ASME Fellow, 1993.
- ASME O. L. "Andy" Lewis Award, January, 1994.
- Certificate for Exemplary Service to the *ASME J. Heat Transfer*, July, 1994.
- NASA Innovation Award, *Micro Heat Pipe Panels and Method for Producing Same*, (NASA), March 29, 1995.
- National Science Foundation (NSF) *Management Excellence Award*, June, 1995.
- AIAA Thermophysics Award, June, 1996.
- ASME Heat Transfer Memorial Award, November, 2001.
- AIAA Sustained Service Award, June 24, 2003.
- Elected to the International Academy of Astronautics, October, 2004.
- AIAA Sustained Service Award, January, 2005
- Frank J. Malina Medal, International Astronautical Federation, August, 2005
- ASEE Benjamin Garver Lamme Award for Excellence in Engineering, June, 2006

### Presentation/Paper Awards

- Award for Outstanding Presentation in Poster Format, 8th International Heat Transfer Conference, August 17-22, 1986, San Francisco, CA, *Thermal Contact Conductance Between Spherical Particles and Flat Surfaces*, by G. P. Peterson and L. S. Fletcher.
- IEEE Outstanding Paper Award, 10th Symposium on Electronic Materials Processing and Characteristics, June 3-4, 1991, Richardson, TX, *Construction Processes for Vapor Deposited Micro Heat Pipes*, by A. K. Mallik, G. P. Peterson and M. H. Weichold.
- AIAA American Institute of Aeronautics and Astronautics, "1990 Best Paper in Thermophysics Award," June 24, 1991, *Experimental Investigation of the Transient Behavior of Micro Heat Pipes*, by D. Wu, G. P. Peterson and W. S. Chang.

### Fellowships

- NASA/ASEE Summer Faculty Research Fellowship, NASA-Johnson Space Center, Houston, TX, 1981.
- NASA/ASEE Summer Faculty Research Fellowship, NASA-Johnson Space Center, Houston, TX, 1982.

- Key Professor, Fluid Power Educational Foundation, Milwaukee, Wisconsin, 1982.
- TRW/SME Travel Fellowship, February 1983.

#### **Honor Societies**

- Tau Beta Pi, National Engineering Honor Society.
- Pi Tau Sigma, Mechanical Engineering Honor Society.
- Sigma XI, National Research Society.
- Phi Kappa Phi, National Scholastic Honor Society.

#### **Other Awards**

- Texas A&M University, Texas Engineering Experiment Station - Select Young Fellow, 1986-87.
- Texas A&M University, Texas Engineering Experiment Station - Research Fellow, 1988-89.
- Texas A&M University, Texas Engineering Experiment Station - Senior Research Fellow, 1989-90.
- Kansas State University, College of Engineering - Eminent Engineer, November 27, 1995.
- Kansas State University, College of Engineering Alumni Fellow, 1998.
- Kansas State University, College of Engineering Hall of Fame, November 7, 2003.
- Texas A&M University, Department of Mechanical Engineering Academy of Distinguished Graduates, October 21, 2004.

#### **PATENTS AND INVENTIONS:**

- Invention Disclosure Filed, "Gripping Device for Board-like Work Pieces," May 15, 1985.
- Invention Disclosure Filed, "Automatic Feed Mechanism for a Pneumatic Screwdriver," May 31, 1986.
- Invention Disclosure Filed, "A Flexible Heat Pipe Catheter," June 22, 1992.
- Invention Disclosure Filed, "A Method of Forming Variable Graded Porosity Heat Pipe Wick Structure," (Joint with Intel Corp.) September 22, 1997.
- Invention Disclosure Filed, "A Method of Forming Variable Graded Porosity Heat Pipe Wick Structure," (Joint with Intel Corp.) September 22, 1997.
- Patent Issued (U.S.), "Bellows Heat Pipe for the Thermal Control of Electronic Devices," (Joint with S. Oktay, IBM Corporation), U.S. Patent No. 4,951,740, issued August 28, 1990.
- Patent Issued (U.S.), "Heat Transfer Cylinder Dryer," (Joint with L. S. Fletcher), U.S. Patent No. 5,119,886, issued June 9, 1992.
- Patent Issued (U.S.), "Vapor Deposited Micro Heat Pipe," (Joint with M. H. Weichold, TAMU), U.S. Patent No. 5,179,043, issued January 12, 1993.
- Patent Issued (U.S.), "A Micro Heat Pipe Catheter for Local Tumor Hyperthermia," (Joint with L. S. Fletcher), U.S. Patent No. 5,190,539, issued March 2, 1993.
- Patent Issued (U.S.), "Temperature Control Mechanisms for a Micro Heat Pipe Catheter," (Joint with L. S. Fletcher), U.S. Patent No. 5,417,686, issued May 23, 1995.
- Patent Issued, "Micro Heat Pipe Panels and Method for Producing Same," U. S. Patent No. 5,527,588, (Joint with C. Camarda, NASA Langley), issued June 18, 1996.
- Patent Issued, "Treatment Method Using a Micro Heat Pipe Catheter," (Joint with L. S. Fletcher), U.S. Patent No. 5,591,162, issued January 7, 1997.
- Patent Issued, "Coupled, Flux Transformer Heat Pipes," (Joint with S. Oktay, IBM Corporation), U.S. Patent No. 5,647,429, issued July 15, 1997.
- Patent pending, "Passive jet blast deflectors for aircraft carrier flight decks and portable landing fields for STOVL aircraft and related method thereof," provisional applications 60/818,099 and 60/833,326, (Joint with Haydn Wadley, Anthony Evans, Douglass Queheillalt and Hossein H. Haj-Hariri).