

Publication list of Hsin Wang

Peer Reviewed Papers

1. **H. Wang**, W.D. Porter, R.B. Dinwiddie, "Development of a Thermal Transport Database for Air Plasma Sprayed ZrO₂-Y₂O₃ Thermal Barrier Coatings", *Journal of Thermal Spray Technology*: Volume 19, Issue 5 p879. February 2010
2. X. Shi, J.Y. Cho, J.R. Salvador, J.H. Yang and **H. Wang**, "Thermoelectric Properties of polycrystalline In₄Se₃ and In₄Te₃", *Appl. Phys. Lett.*, Vol 96, No. 16, paper No. 162108, April 2010
3. X. Shi, J.Y. Cho, S.Q. Bai, J.H. Yang, **H. Wang**, M.F. Chi, J.R. Salvador, W.Q. Zhang, L.D. Chen, W. Wong-Ng, "On the Design of High Efficiency Thermoelectric Clathrates through a Systematic Cross-substitute of Framework Elements", *Advanced Functional Materials*, Vol. 20, No.5 pp 755-763, march, 2010
4. K.E. Pappacena, M.T. Johnson, **H. Wang**, W.D. Porter, K.T. Faber, "Thermal Properties of Wood-derived Copper-silicon Carbide Composites Fabricated via Electrodeposition", *Composites Science and Technology*, Vol 70, No. 3, pp478-484 March, 2010
5. J.R. Salvador, J.H. Yang, **H. Wang** and X. Shi "Double-filled Skutterudites of the type Ybx_{1-x}CayCo₄Sb₁₂: Synthesis and Properties", *J. of Appl. Phys.*, Vol 107, No. 4, article No. 043705, February. 2010
6. Chris Petorak, Jan Ilavsky, **Hsin Wang**, W.D. Porter, Rodney Trice, "Microstructural Evolution of 7 wt.% Y₂O₃-ZrO₂ Thermal Barrier Coatings due to Stress Relaxation at Elevated Temperatures and the Concomitant changes in Thermal Conductivity", *Surface & Coatings Technology* 205, pp 57-65 June 2010
7. Kent Van Every, Matthew Krane, Rodney W. Trice, W. Porter, **H. Wang**, Matthew Besser, Dan Sordelet, Jan Ilavsky, and Jonathan Almer, "In-Flight Alloying of Nanocrystalline Ytria-Stabilized Zirconia Using Suspension Spray to Produce Ultra-Low Thermal Conductivity Thermal Barriers", *International Journal of Applied Ceramic Technology*, submitted Jan. 2010
8. Qing Jie, Juan Zhou, Ivo K. Dimitrov, Chang-Peng Li, Ctirad Uher, **Hsin Wang**, Wallace D. Porter and Qiang Li, "Thermoelectric Properties of Non-equilibrium Synthesized Ce_{0.9}Fe₃CoSb₁₂ Filled Skutterudites", Proc. MRS 2010 Spring Meeting, No. 761337, March 2010
9. Sidney Lin and Jiri Selig, Hua-Tay Lin and Hsin Wang, "Self-propagating High-temperature Synthesis of Calcium Cobaltate Thermoelectric Powders", PROC. ICACC2010, January, 2010
10. A. A. Wereszczak, M. E. Ragan, K. T. Strong, Jr., P. J. Ritt, **H. Wang**, J. R. Salvador and J. Yang, "Strength of N- and P-Type Skutterudites", PROC. ICACC2010, No. 685426, January, 2010
11. X. Shi, Jihui Yang, **H. Wang**, M. Chi, J. R. Salvador, Jiong Yang, S. Bai, W. Zhang, L. Chen, J. R. D. Copley, J. B. Leão and J. J. Rush, "Realization of High Thermoelectric Efficiency in Caged Compounds Using Multiple Incoherent Rattlers", accepted Phys Rev. Lett 2010
12. **Hsin Wang** and Hossein Maleki, "Thermal transport properties measurements of jelly-rolls in Li-ion cells", submit to Journal of Power Sources September 2010
13. Wei Cai, **Hsin Wang**, Edgar Lara-Curzio and Hossein Maleki, "Internal Short Circuit Testing of Prismatic Li-ion Cells: An Improved Pinch Test with Multiple Parameter Controls", submit to Journal of Power Sources, September 2010
14. Erica L. Corral, **Hsin Wang**, Javier Garay, Zuhair Munir, and Enrique V. Barrera, "Thermal and Electrical Management of Silicon Nitride Using Single-Walled Carbon Nanotubes and Spark Plasma Sintering", submitted to *J. European Ceramics Society*, May 2010
15. J. R. Salvador, J. Yang, X. Shi, **H. Wang**, and A. A. Wereszczak, "Transport and Mechanical Property Evaluation of (AgSbTe₂)_{1-x}(GeTe)_x (x=0.80, 0.82, 0.85, 0.87 and 0.90)," *Journal of Solid State Chemistry*, 182:2088-2095 (2009).
16. Salvador JR, Yang J, Shi X, **Wang, H.**, Wereszczak, A. A., Kong, H. and Uher, C. "Transport and mechanical properties of Yb-filled skutterudites", *PHILOSOPHICAL MAGAZINE* Volume: 89 Issue: 19 Pages: 1517-1534 (2009)
17. Landwehr SE, Hilmas GE, Fahrenholtz WG, Talmy, Inna G. and **Wang, H.**, "Thermal properties and thermal shock resistance of liquid phase sintered ZrC-Mo cermet", *MATERIALS*

- CHEMISTRY AND PHYSICS* Volume: 115 Issue: 2-3 Pages: 690-695 June (2009)
18. Shi X, Salvador JR, Yang J and **Wang H**, “Thermoelectric Properties of n-Type Multiple-Filled Skutterudites”, 27th International Conference on Thermoelectrics, AUG 03-07, 2008 Univ Oregon, Corvallis, OR, *JOURNAL OF ELECTRONIC MATERIALS* Volume: 38 Issue: 7 Pages: 930-933 Published: July (2009)
 19. Cui YJ, Salvador JR, Yang JH, **Wang H**, Amow G and Kleinke H, “Thermoelectric Properties of Heavily Doped n-Type SrTiO₃ Bulk Materials”, 27th International Conference on Thermoelectrics, AUG 03-07, 2008 Univ Oregon, Corvallis, OR, *JOURNAL OF ELECTRONIC MATERIALS* Volume: 38 Issue: 7 Pages: 1002-1007 July (2009)
 20. Nolas GS, Lin X, Martin J, Beeekman M and **Wang H**, “Open-Structured Materials: Skutterudites and Clathrates”, 27th International Conference on Thermoelectrics, AUG 03-07, 2008 Univ Oregon, Corvallis, OR, *JOURNAL OF ELECTRONIC MATERIALS* Volume: 38 Issue: 7 Pages: 1052-1055 July (2009)
 21. Chen Z, Speakman S, Howe J, **Wang H**, Porter WD and Trice R, “Investigation of reactions between vanadium oxide and plasma-sprayed yttria-stabilized zirconia coatings”, *JOURNAL OF THE EUROPEAN CERAMIC SOCIETY* Volume: 29 Issue: 8 Pages: 1403-1411 May (2009)
 22. Kerr LL, Pan YL, Dinwiddie RB, **Wang H** and Peterson RC, “Thermal Conductivity of Coated Paper”, *INTERNATIONAL JOURNAL OF THERMOPHYSICS* Volume: 30 Issue: 2 Pages: 572-579 April (2009)
 23. Tan Y, Longtin JP, Sampath S, and **Wang H**, “Effect of the Starting Microstructure on the Thermal Properties of As-Sprayed and Thermally Exposed Plasma-Sprayed YSZ Coatings”, *JOURNAL OF THE AMERICAN CERAMIC SOCIETY* Volume: 92 Issue: 3 Pages: 710-716 March (2009)
 24. Chi WG, Sampath S, **Wang H**, “Microstructure-thermal conductivity relationships for plasma-sprayed yttria-stabilized zirconia coatings”, *JOURNAL OF THE AMERICAN CERAMIC SOCIETY* Volume: 91 Issue: 8 Pages: 2636-2645 AUG 2008
 25. **H. Wang**, W.D. Porter, Jihui Yang JR Salvador and G. Meisner, “High Temperature Thermoelectric Properties of Misch-metal-filled Skutterudites”, submitted to *Journal of Applied Physics*, September 2008
 26. Salvador JR, Shi X, Yang J, **Wang H**, “Synthesis and transport properties of M₃Ni₃Sb₄ (M=Zr and Hf): An intermetallic semiconductor”, *Physical Review B*, Volume: 77 Issue: 23 Article Number: 235217, JUN 2008
 27. Martin J, **Wang H**, Nolas GS, “Optimization of the thermoelectric properties of Ba₈Ga₁₆Ge₃₀”, *Applied Physics Letters* Volume: 92 Issue: 22 Article Number: 222110, JUNE 2008
 28. Andrew A. Buchheit, William G. Fahrenholtz, Greg E. Hilmas, Doug M. Deason, **H. Wang**, “Processing and thermal properties of an Mo₅₃Si₃C₅₁ ceramic”, *Intermetallics*, Vol. 16 No. 7, pp-854-859, July 2008
 29. Shi X, Kong H, Li CP, et al and **H. Wang** “Low thermal conductivity and high thermoelectric figure of merit in n-type BaxYbyCo(4)Sb(12) double-filled skutterudites”, *Applied Physics Letters* Volume: 92 Issue: 18 Article Number: 182101, MAY, 2008
 30. Andrew A. Buchheit, Greg E. Hilmas, William G. Fahrenholtz, Douglas M. Deason, H.Wang, “Mechanical and thermal properties of AlN-CBN-CSiC ceramics”, *Materials Science and Engineering A*, Vol. 494 pp239-C246, 2008
 31. Zimmermann JW, Hilmas GE, Fahrenholtz WG, et al., **H. Wang**, “Thermophysical properties of ZrB₂ and ZrB₂-SiC ceramics”, *Journal of The American Ceramic Society* Volume: 91 Issue: 5 Pages: 1405-1411 MAY 2008
 32. J. Martin And G. S. Nolas, **H. Wang**, J. Yang, “Thermoelectric Properties of Silicon-Germanium Type I Clathrates”, *Journal of Applied Physics* Vol 102, No. 10 103719, Nov. 2007
 33. J. Yang and G. P. Meisner, C. J. Rawn, **H. Wang**, and B. C. Chakoumakos, J. Martin and G. S. Nolas, B. L. Pedersen and J. K. Stalick, “Low temperature transport and structural properties of misch-metal-filled skutterudites”, *Journal of Applied Physics*, Vol 102 No. 8 083702, Oct. 2007
 34. Chi W, Sampath S, **Wang H**, “Comparison of the thermal transport property measurements of thermally sprayed coatings by the laser and xenon flash techniques”, *Journal of Thermal Spray Technology* Volume: 16 Issue: 3 Pages: 444-448, SEP 2007

35. K. E. Pappacena, **H. Wang**, W. D. Porter and K. T. Faber, "Thermal Conductivity of Porous Silicon Carbide Derived from Wood Precursors", *J. Am. Ceram. Soc.*, 90 [9] 2855–2862 (2007)
36. W. Chi, S. Sampath, **H. Wang**, "Ambient and High Temperature Thermal Conductivity of Thermal Sprayed Coatings", *J. Thermal Spray Technology* 15 (4): 773-778 DEC (2006)
37. M Gustavsson, **H Wang**, R. Trejo, E Lara-Curzio, R B Dinwiddie, S E Gustafsson, "On the Use of the Transient Hot Strip Method for Measuring the Thermal Conductivity of Highly Conducting Thin Bars", *International Journal of Thermophysics* 27 (6): 1816-1825 NOV 2006
38. Batur Ercan, Keith J. Bowman and Rodney W. Trice, **H. Wang** and W.D. Porter, "Effect of Initial Powder Morphology on Thermal and Mechanical Properties of Stand-Alone Plasma-Sprayed 7 wt% Y2O3-ZrO2 Coatings", *Materials Science and Engineering A-Structural Materials Properties Microstructure and Processing* 435: 212-220 NOV (2006)
39. I. N. Ivanov, A. A. Puzetky, G. Eres, Z. Pan, **H. Wang** and D. B. Geohegan, "Thermal Diffusivity Measurements of Continuous Vertically Aligned Carbon Nanotube Arrays (VANTAs) and Their Composite", *Applied Physics Letters* 89 (22): Art. No. 223110 NOV (2006)
40. John L. Johnson, Seong Lee, Joon-Woong Noh, Young-Sam Kwon, Seong Jin Park, Reza Yassar, Randall M. German, **Hsin Wang** and R. B. Dinwiddie, "Microstructure of Tungsten Copper and Model to Predict Thermal Conductivity," *Proceedings of the 2007 International Conference on Powder Metallurgy & Particulate Materials (PowderMet 2007)*, Ed. by John Engquist and Thomas F. Murphy, Part 9, pp. 99-110, 2007.
41. I. C. Bang, J. Buongiorno L. W. Hu, **Hsin Wang**, "Nanoparticle deposition hinders the growth of the hot spot in boiling critical heat flux experiments with nanofluids", submitted to *Applied Physics Letter* 2007
42. I. C. Bang, J. Buongiorno L. W. Hu, **Hsin Wang**, "Measurement of Key Pool Boiling Parameters in Nanofluids for Nuclear Applications", 15th International Conference on Nuclear Engineering Nagoya, Japan, ICONE15, 10030, April 22-26, 2007
43. W. Chi, S. Sampath, **H. Wang**, "Ambient and High Temperature Thermal Conductivity of Thermal Sprayed Coatings", *J. Thermal Spray Technology* 15 (4): 773-778 DEC (2006)
44. M Gustavsson, **H Wang**, R. Trejo, E Lara-Curzio, R B Dinwiddie, S E Gustafsson, "On the Use of the Transient Hot Strip Method for Measuring the Thermal Conductivity of Highly Conducting Thin Bars", *International Journal of Thermophysics* 27 (6): 1816-1825 NOV 2006
45. Batur Ercan, Keith J. Bowman and Rodney W. Trice, **H. Wang** and W.D. Porter, "Effect of Initial Powder Morphology on Thermal and Mechanical Properties of Stand-Alone Plasma-Sprayed 7 wt% Y2O3-ZrO2 Coatings", *Materials Science and Engineering A-Structural Materials Properties Microstructure and Processing* 435: 212-220 NOV (2006)
46. Y. Tan, A. Sharma, J. P. Longtin, S. Sampath, **H. Wang**, "Image-Based Modeling For Assessing Thermal Conductivity Of Thermal Spray Coatings At Ambient And High Temperature", *IMECE2006-15972* (2006)
47. J. Yang and G. P. Meisner, C. J. Rawn, **H. Wang**, and B. C. Chakoumakos, J. Martin and G. S. Nolas, B. L. Pedersen and J. K. Stalick, "Low temperature transport and structural properties of misch-metal-filled skutterudites", submitted to *Physical Review B* (2006)
48. **H. Wang**, T. England, "IR Imaging on heater performance of outside rearview mirrors of automobiles", *SPIE Thermosense XXVIII*, Vol. 6205 pp6205L1-7 (2006)
49. Miller SF, Li R, **Wang H** "Experimental and numerical analysis of the friction drilling process" *JOURNAL OF MANUFACTURING SCIENCE AND ENGINEERING-TRANSACTIONS OF THE ASME* 128 (3): 802-810 AUG 2006
50. Rahaman MN, Gross JR, Dutton RE, **H. Wang**, et al. "Phase stability, sintering, and thermal conductivity of plasma-sprayed ZrO2-Gd2O3 compositions for potential thermal barrier coating applications", *ACTA MATERIALIA* 54 (6): 1615-1621 APR 2006
51. Tian H, Liaw PK, Fielden DE, **H. Wang** et. al. "Effects of frequency on fatigue behavior of type 316 low-carbon, nitrogen-added stainless steel in air and mercury for the spallation neutron source", *Metallurgical And Materials Transactions A-Physical Metallurgy And Materials Science* 37a (1): 163-173 Jan 2006"
52. Chen Z, Trice R, **Wang H**, Porter W, Howe J, Besser M, Sordelet D, "Co-doping of air plasma-sprayed yttria- and ceria-stabilized zirconia for thermal barrier applications" *J. AMERICAN CERAMIC SOCIETY* 88 (6): 1584-1590 JUN 2005
53. Khanna SK, Long X, Porter WD, **Wang H**, Liu CK, Radovic M, Lara-Curzio E, "Residual stresses in spot welded new generation aluminum alloys - Part A - thermophysical and

- thermomechanical properties of 6111 and 5754 aluminum alloys”, SCIENCE AND TECHNOLOGY OF WELDING AND JOINING 10 (1): 82-87 2005
54. **H. Wang**, “Spectral Analysis and Imaging of Colored Glasses”, GPLUS Report ORNL TM 2005/91
 55. H. Wang, W.D. Porter and J. Sharp, “Thermal Conductivity Measurements of Bulk Thermoelectric Materials” ITC’05 Proceedings, 2005
 56. **H. Wang**, M. Gustavsson, R. B. Dinwiddie and S. E. Gustafsson, “Temperature Distribution during Hot Disk Thermal Conductivity Measurement Studied by Infrared Imaging”, ITCC28, (2005)
 57. Nayak S, **Wang H**, Dahotre NB, “Thermography during laser surface melting of cast aluminum alloy” MATERIALS SCIENCE AND TECHNOLOGY 20 (12): 1609-1614 2004
 58. Nayak S, **Wang H**, Kenik EA, et al., “Observation of exothermic reaction during laser-assisted iron oxide coating on aluminum alloy”, MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING 390 (1-2): 404-413 JAN 15 2005
 59. An LN, Xu WX, Rajagopalan S, Wang CM, **Wang H**, Fan Y, Zhang LG, Jiang DP, Kapat J, Chow L, Guo BH, Liang J, Vaidyanathan R, “Carbon-nanotube-reinforced polymer-derived ceramic composites” ADVANCED MATERIALS 16 (22): 2036+ NOV 18 2004
 60. Zhan GD, Kuntz JD, **Wang H**, et al., “Anisotropic thermal properties of single-wall-carbon-nanotube-reinforced nanoceramics”, PHILOSOPHICAL MAGAZINE LETTERS 84 (7): 419-423 JUL 2004
 61. **H. Wang**, D.R. Wade, Jr. and J. Kam, “IR imaging of blood circulation of patients with vascular disease”, Thermosense XXVI, SPIE Proceedings Vol. 5405, pp 115-123 (2004)
 62. **H. Wang**, Z. Feng and P. Sklad, “Inspection and evaluation of laser welds for transit buses”, Thermosense XXVI, SPIE Proceedings Vol. 5405, pp 382-389 (2004)
 63. G. D. Zhan, J. D. Kuntz, **H. Wang** and A. K. Mukherjee, “Novel Thermal Properties Of Single-Walled Carbon Nanotube Reinforced Nanoceramics” ITCC27 Ed. Wang and Porter, Destech Publishing Co. pp103-112 (2004)
 64. **H. Wang** and R. B. Dinwiddie, “Development Of A Labview™ Based Portable Thermal Diffusivity System” ITCC27 Ed. Wang and Porter, Destech Publishing Co. pp484-292 (2004)
 65. C.-C. Tsai, B. E. Nelson and **H. Wang**, “Thermal Diffusivity Measurements Of Monolithic Copper-Epoxy Composite Specimens By The Flash Method” Ed. Wang and Porter, Destech Publishing Co., pp413-423 (2004)
 66. Su YJ, Trice RW, Faber KT, **Wang H**, Porter WD, “Thermal conductivity, phase stability, and oxidation resistance of Y3Al5O12 (YAG)/Y2O3-ZrO2 (YSZ) thermal-barrier coatings”, OXIDATION OF METALS 61 (3-4): 253-271 APR 2004
 67. Raghavan S, **Wang H**, Dinwiddie RB, Porter WD, Vassen R, Stover D, Mayo MJ, “Ta2O5/Nb2O5 and Y2O3 co-doped zirconias for thermal barrier coatings”, JOURNAL OF THE AMERICAN CERAMIC SOCIETY 87 (3): 431-437 MAR 2004
 68. Kadolkar P, **Wang H**, Watkins TR, Dahotre NB, “Thermographic characterisation of a laser surface engineered ceramic coating on metal”, INTERNATIONAL JOURNAL OF ADVANCED MANUFACTURING TECHNOLOGY 23 (5-6): 350-357 MAR 2004
 69. Jiang L, **Wang H**, Liaw PK, Brooks CR, Chen L, Klarstrom DL, “Temperature evolution and life prediction in fatigue of superalloys”, METALLURGICAL AND MATERIALS TRANSACTIONS A-PHYSICAL METALLURGY AND MATERIALS SCIENCE 35A (3): 839-848 MAR 2004

70. Jiang L, **Wang H**, Liaw PK, Brooks CR, Klarstrom DL, "Temperature evolution during low-cycle fatigue of ULTIMET (R) alloy: experiment and modeling", *MECHANICS OF MATERIALS* 36 (1-2): 73-84 JAN-FEB 2004
71. Chen LJ, Liaw PK, **Wang H**, He YH, McDaniel RL, Jiang L, Yang B, Klarstrom DL, "Cyclic deformation behavior of HAYNES (R) HR-120 (R) superalloy under low-cycle fatigue loading", *MECHANICS OF MATERIALS* 36 (1-2): 85-98 JAN-FEB 2004
72. W. Xu, L. An, S. Rajagopalan and R. Vaidyanathan, C.M. Wang, **H. Wang**, J. Kapat and L. Chow et al, "Fully Dense Carbon Nanotube Reinforced Polymer-Derived Ceramic Composites", Submitted to *Applied Physics Letter* (2003)
73. **H. Wang**, "Thermal Conductivity Evaluation of Ceramic Coatings Using Flash Diffusivity and DSC Methods", Proceedings 30th NATAS Conference, September 23-25, Pittsburgh, PA (2002)
74. S.K. Khanna, X. Long, **H. Wang**, W.D. Porter, Christopher O. Stevens, Miladin Radovic and Edgar Lara-Curzio, "Numerical Simulation of Residual Stress Field in Spot Welded 5754 Aluminum Alloy Using Thermo-Electrical-Mechanical Finite Element Analysis",
75. N. Ordás, R. Cemboráin, S. Lindig, M. Balden, **H. Wang**, C. García-Rosales, "Effect of catalytic graphitisation on the thermo-mechanical properties of isotropic graphite doped with metallic carbides", 10th Workshop on Carbon Materials for Fusion Applications, Julich, Germany, Sept. (2003)
76. **H. Wang**, L. Chen, P.K. Liaw, L. Jiang, D.L. Klarstrom, "Infrared Imaging of Plastic Zone During Fatigue crack Growth of ULTIMET Superalloy", submit to *Nature Materials*, (2003)
77. **H. Wang**, "Thermal Conductivity Measurements of Kaolite", ORNL/TM-2003/49.
78. **H. Wang**, R. B. Dinwiddie, K.E. Wilkes and T. Huff, "G-Plus Report to Owens Corning Thermal Conductivity Measurements of Fiberglass", ORNL/TM-2003/98.
79. L. Jiang, **H. Wang**, P.K. Liaw, C.R. Brooks, L. Chen, D.L. Klarstrom, "Temperature Evolution and Life Prediction in Fatigue of Superalloys", *Metallurgical and Materials Transactions A*, Volume 34 A, 2003
80. M.M. Baig, M.Z. Khandkar, J.A. Khan, M.A. Khan, G. Simins and **H. Wang**, "A Study of Temperature Field in A GaN Heterastructure Field-Effect Transistor", *Microelectronics Journal*, 34 (3): 207-214 (2003)
81. Graham S, McDowell DL, Lara-Curzio E, Dinwiddie RB, **Wang H**, Porter W, "Nondestructive characterization of thermal shock and oxidation-induced damage by flash diffusivity", *Journal Of Composite Materials*, 37 (1): 73-87 2003
82. Yoganand SN, Jagannadham K, Karoui A, **Wang H**, "Integrated AlN/diamond heat spreaders for silicon device processing", *Journal Of Vacuum Science & Technology A* 20 (6): 1974-1982 NOV-DEC 2002
83. Barsoum MW, Salama I, El-Raghy T, Golczewski J, Porter WD, **Wang H**, Seifert HJ, Aldinger F "Thermal and electrical properties of Nb₂AlC, (Ti, Nb)₂AlC and Ti₂AlC", *Metallurgical And Materials Transactions A* 33 (9): 2775-2779 SEP 2002

84. Jiang L, **Wang H**, Liaw PK, Brooks CR, Klarstrom DL, "Effects of cyclic loading on temperature evolution of ULTIMET (R) superalloy: experiment and theoretical modeling", Transactions Of Nonferrous Metals Society Of China, 12 (4): 734-747 AUG 2002
85. K. Jagannadham and **H. Wang**, "Thermal Resistance of Interfaces in AlN-diamond Thin Film Composites", *J. Appl. Phys.* 91(3)1224-1235 Feb. (2002)
86. J.G. Hemerick, A.A. Wereszczak, M. Karukus, K.C. Liu, **H. Wang**, B.A. Pint, T.P. Kirkland, R.E. Moore, "Compressive Creep and Thermophysical Performance of Mullite Refractories", ORNL/TM-2002-84
87. **H. Wang**, J. G. Hemerick, R.B. Dinwiddie and M.K. Ferber, "Thermal Conductivity of Savaged Fusion Cast Alumina Used in Glass Industry", *Thermal Conductivity* 26, (2002)
88. S. Raghavan, **H. Wang**, R. B. Dinwiddie, W. D. Porter, R. Vaßen, D. Stöver, and M. J. Mayo, "Ta₂O₅/Nb₂O₅ and Y₂O₃ Co-doped Zirconias for Thermal Barrier Coatings", *J. Am. Cer. Soc* 87 [3] 431-37 (2004)
89. **H. Wang** and R. B. Dinwiddie H. Maleki, J. Oglesbee and C. Thougsouk, "IR Imaging of Integrated Circuit Transistors during Operation", *SPIE THERMOSENSE XXIV*, Vol 4710 pp. 44-51 (2002)
90. **H. Wang**, M. Pyda, R. Androsch and B. Wonderlich, "Application of IR Imaging During Temperature-Modulated Differential Scanning Calorimetry (TMDSC) Measurements", *SPIE THERMOSENSE XXIV*, Vol. 4710 pp. 80-86 (2002)
91. L. Jiang, C. R. Brooks, P. K. Liaw, **H. Wang**, C. J. Rawn and D. L. Klarstrom, "High-frequency metal fatigue: the high-cycle fatigue behavior of ULTIMETR alloy", *Materials Science and Engineering A*. 162-175, Volume 314, Issues 1-2, (2001)
92. B. Mikijelj, J. O. Kiggans, T. N. Tieg, P. A. Menchhofer, **H. Wang**, and H. T. Lin, "High Thermal Conductivity Lossy Dielectrics Using A Multi-Layer Approach", AcerS FGM2000, (2001)
93. **H. Wang** and R.B. Dinwiddie, "Characterization of Thermal Barrier Coating Using Thermal Methods", *Advanced Engineering Materials*, Vol. 3 No. 7, pp465-468 (2001)
94. B. B. Spencer, **H. Wang** and K.K. Anderson, "Thermal Conductivity of IONSIV IE-911 Crystalline Silicotitanate and Savannah River Waste Simulant Solutions", ORNL/TM-2000/285
95. **H. Wang** and R.B. Dinwiddie, "Synchronizing the IR Camera to Capture High-Speed Thermal Transients", *SPIE Thermosense XXII*, Vol. 4360, pp. 30-36 (2001)
96. R.R. Seeley, D.E. McCabe, S. Iskander, W.A. Simpson, **H. Wang** and F.M. Haggag, "NDE Methods to Detect the Degradation of Fracture Toughness Properties of Nickle-Based Alloys", TMS Fall Meeting, St. Louis MO, Oct. (2000)
97. R.W. Trice, Y. J. Su, K.T. Faber, **H. Wang** and W.D. Porter, "Effect of Heat-Treatment on Phase Stability, Lamella and Grain Morphology, and Thermal Conductivity of Plasma-Sprayed YSZ", *Journal of Materials Science*, 37(11) pp. 2359-2365 June (2002)
98. David T. Marx, Tod Policandriotes, Jeremy Scott, R.B. Dinwiddie and **H. Wang**, "Measurement of Interfacial Temperatures during Testing of a Subscale Aircraft Brake", *J. Applied Physics D*, 34 (6): 976-984 MAR 21 (2001)

99. **H. Wang**, Y. He, L. Chen, L. Jiang, P.K. Liaw and D.L Klarstrom, "Application of Infrared Imaging during Low-Cycle Fatigue Tests of HR-120 Alloy", *Metallurgical and Materials Transaction A*, Vol. 33A, pp1287-1292 (2002)
100. J. Kim, P.K. Liaw, **H. Wang**, Y.T. Lee, "Damage Assessment of Ceramic Matrix Composites by Non-destructive Evaluation Techniques", *Fatigue and Fracture Behavior of High Temperature Materials*, Ed. P.K. Liaw, TMS, pp59-69 (2000)
101. H. Tian, P.K. Liaw, **H. Wang**, D. Fielden, L. Jiang, B. Yang, C.R. Brooks, J. P. Strizak, L. K. Mansur, J. R. DiStefano, K. Farrel, D.C. Lousteau, S.J. Pawel and G.T. Yahr, "The Effect of Frequency and Specimen Self-Heating on the Fatigue Life of 316 LN Stainless Steel", *Fatigue and Fracture Behavior of High Temperature Materials*, Ed. P.K. Liaw, TMS, pp??-?? (2000)
102. B. Yang, P.K. Liaw, **H. Wang**, L. Jiang, J.Y. Huang, R.C. Kuo and J.G. Huang, "Thermographic Detection of Fatigue Damage of Reactor Pressure Vessel (RPV) Steels", *Fatigue and Fracture Behavior of High Temperature Materials*, Ed. P.K. Liaw, TMS, pp??-?? (2000)
103. H. Maleki, J.R. Selman, R.B. Dinwiddie and **H. Wang**, "High Thermal Conductivity Negative Electrode Material for Lithium-Ion Batteries," *J. of Power Sources*, Vol. 94, pp. 26-35 (2001)
104. B. Yang, P.K. Liaw, **H. Wang**, L. Jiang, J.Y. Huang, R.C. Kuo and J.G. Huang, "Thermographic Investigation of Fatigue Behavior of Reactor Pressure Vessel (RPV) Steels", *Materials Science and Engineering A*. 131-139, Volume 314, Issues 1-2, (2001)
105. H. Tian, J. T. Broom, P. K. Liaw, **H. Wang**, D. Fielden, L. Jiang, B. Yang, C.R. Brooks, J. P. Strizak, L. K. Mansur, J. R. DiStefano, K. Farrel, D.C. Lousteau, S.J. Pawel and G.T. Yahr, "Influence of Mercury Environment on Fatigue Behavior of Spallation Neutron Sources (SNS) Target Vessel Materials", *Materials Science and Engineering A*. 140-149, Volume 314, Issues 1-2, (2001)
106. Y. Jennifer Su, **H. Wang**, W.D. Porter, A. R. de Arellano Lopez and K. T. Faber, "Thermal Conductivity and Phase Evolution of Plasma-Sprayed Multilayer Coatings", *Journal of Materials Science* 36(14), pp3511-3518, July (2001)
107. M. W. Barsoum, T. El-Raghy, W. D. Porter, **H. Wang**, C. R. Hubbard, J. Ho and H. Hamdeh, "Thermal Properties of Nb₂SnC", *J APPL PHYS* 88: (11) 6313-6316 DEC 1 (2000)
108. J. Kim, P.K. Liaw, **H. Wang** and You-Tae Lee, "Thermal and Mechanical Characterization of Ceramic Matrix Composites by Non-destructive (NDE) Techniques", *Advances in Ceramic Matrix Composites VI*, Edited by J. P. Singh, N. P. Bansal, and E. Ustundag, *Ceramic Transactions*, Vol. 124, pp. 241-252 (2001)
109. **H. Wang**, L. Jiang, R.B. Dinwiddie, P.K. Liaw, C.R. Brooks and D.R. Klarstrom, "Application of High-Speed IR Imaging During Mechanical Fatigue Tests", *SPIE Thermosense XXII*, Vol. 4020 pp 186-193 (2000)
110. R.L. Hecht, R.B. Dinwiddie and **H. Wang**, "The effect of graphite flake morphology on the thermal diffusivity of gray cast irons used for automotive brake discs", *Journal of Materials Science*, 34: (19) 4775-4781 (1999)
111. R. Androsch, M. Pyda and **H. Wang**, and B. Wunderlich "Temperature Modulated Differential Scanning Calorimetry Using High-Resolution Infrared Thermography", *J. Thermal Analysis and Calarimetry* Vol. 61, pp. 661-679 (2000)
112. M.W. Barsoum, C.J. Rawn, T. El-Raghy, A. Procopio, W.D. Porter, **H. Wang** and C.R. Hubbard, "Thermal Properties of Ti₄AlN₃", *J. Appl. Phys.* Vol. 87, No.12, pp.1-8 (2000)

- 113.S. Raghavan, **H. Wang**, W.D. Porter, R.B. Dinwiddie and M. Mayo, "Thermal Properties of Zirconia Co-doped with Trivalent and Pentavalent Oxides", *Acta Mater*, 49, pp. 169-179 (2001)
- 114.L. Jiang, **H. Wang**, P.K. Liaw, C.R. Brooks and D.L. Klarstrom, "Characterization of Temperature Evolution during High-Cycle Fatigue of ULTIMET[®] Superalloy: Experimental and Modeling", *Metallurgical and Materials Transaction A*, Vol. 32A, No.1, pp. 2279-2296 (2001)
- 115.T. Molibog, R.B. Dinwiddie, W. D. Porter, **H. Wang** and H. Littleton, "Thermal Properties of Lost Foam Casting Coatings", *American Foundrymen's Society Transaction*, No. 00-167 (2000)
- 116.P.K. Liaw, **H. Wang**, L. Jiang, B. Yang, J.Y. Huang, R.C. Kuo and J.G. Huang, "Thermographic Detection of Fatigue Damage of Pressure Vessel Steels at 1,000 Hz and 20 Hz," *SCRIPTA MATER* 42: (4) 389-395 JAN 31 (2000)
- 117.**H. Wang**, L. Jiang, P. K. Liaw, C. R. Brooks and D.L. Klarstrom, "Infrared Temperature Mapping of ULTIMET[®] Superalloy during High-Cycle Fatigue Tests", *Metallurgical and Materials Transaction A* Vol. 31A, 1307-1310(2000)
- 118.S. Graham, D.L. McDowell, E. Lara-Curzio, R. B. Dinwiddie and **H. Wang** The Effects of Microstructural Damage on the Thermal Diffusivity of Continuous Fiber-Reinforced Ceramic Matrix Composites," *Mechanical, Thermal and Environmental Testing and Performance of Ceramic Composites and Components*, ASME STP 1392, Ed. Jenkins, Lara-Curzio and Gonczy, pp. 185-200 (2000)
- 119.A. Wereszczak, **H. Wang**, M. Karakus, W. Curtis, V. Amue and D. VerDow, "Postmortem Analyses of Salvaged Conventional Silica Bricks from Glass Production Furnaces", *GLASS SCI TECHNOL* 73: (6) 165-174 JUN (2000)
- 120.R.W. Trice, Y. J. Su, K.T. Faber, **H. Wang** and W.D. Porter, "The Role of NZP Additions in Small-Particle Plasma-Sprayed YSZ: Microstructure, Thermal Conductivity and Phase Stability Effects", *Materials Science and Engineering* , A272 284-291 (1999)
- 121.**H. Wang** and R. B. Dinwiddie, "Applications of IR Thermography in Capturing Thermal Transients and Other High Speed Thermal Events", *SEM Annual Conference Proceeding* , 375-378 (1999)
- 122.**H. Wang** and A. Wereszczak, "Thermal Conductivity of Refractory Materials Used in the Glass Production Industry", *Thermal Conductivity* 25, Ed. Uher and Morelli, Technomic Publishing Co. Inc., 350-357(1999)
- 123.**H. Wang** and E.A. Payzant, "Infrared Imaging of Temperature Distribution in a High-temperature X-ray Diffraction Furnace", *SPIE Conference Proceeding*, Vol. 3700, pp. 377-385 (1999)
- 124.M.W. Barsoum, T. El-Raghy, C.J. Rawn, W.D. Porter, **H. Wang**, E.A. Payzant and C.R. Hubbard,"Thermal Properties of Ti₃SiC₂", *J. Phys. and Chem. of Solids* , vol.60, No.4, Pages 429-439 (1999)
- 125.**H. Wang** and Ralph B. Dinwiddie, "Reliability of Laser Flash Thermal Diffusivity Measurements of Thermal Barrier Coatings", *J. Thermal Spray Technology*, Vol. 9(2), 210-214(2000)
- 126.H. Maleki, S.A. Hallaj, J.S. Hong, J.R. Selman, R.B. Dinwiddie and **H. Wang**, "Thermal Properties of Lithium Ion Battery and Components", *J. of Electrochemical Soc.* Vol. 146, No.3, pp 947-954(1999)
- 127.R.L. McMasters, J.V. Beck, R.B. Dinwiddie and **H. Wang**, "Accounting for Penetration of Laser Heating in Flash Diffusivity Experiments", *ASME J. of Heat Transfer*, Vol. 121, No.1, 15-21 (1999)

128. F.A. Modine et al and **H. Wang**, "Influence of Ceramic Microstructure on Varistor Electrical Properties", *Ceramic Transactions-Dielectric Ceramic Materials*, Vol. 100, pp. 469-491 (1999)
129. **H. Wang** and R. B. Dinwiddie, "Microscopic Thermal Diffusivity Mapping Using an IR Camera", *Thermal Conductivity 24*, Ed. P. S. Gaal, Technomic Pub. Co., pp. 303-312 (1998)
130. S. Raghavan, **H. Wang**, R.B. Dinwiddie, W.D. Porter and M. Mayo, "The Effect of Grain Size, Porosity and Yttria Content on the Thermal Conductivity of Nanocrystalline Zirconia", *Scripta Materialia*, Vol. 39, No. 8, pp. 1119-1125 (1998)
131. **H. Wang**, M. Bartkowiak, F.A. Modine, R.B. Dinwiddie, L.A. Boatner and G.D. Mahan, "Non-uniform Heating in ZnO Varistors Studied by Infrared Imaging and Computer Simulation", *J. Am. Ceram. Soc.* 81 (8) 2013-22 (1998)
132. **H. Wang** and R.B. Dinwiddie, "Thermal Diffusivity Mapping of Carbon-carbon Composites", *Ceramic Engineering & Science Proceedings*, 21st Annual Cocoa Beach Conference and Exposition on Advanced Ceramics, Materials and Structures, Vol. 18 No. 4 B, pp 755-762 (1997)
133. A. Mogro-Campero, C.A. Johnson and P.J. Bendarczyk, GE R&D Center; R.B. Dinwiddie and **H. Wang**, "Effect of Gas Pressure on Thermal Conductivity of Zirconia Thermal Barrier Coating", *Surface and Coatings Technology*, 94-95, 102-105 (1997)
134. **H. Wang**, R. B. Dinwiddie and P.A. Gaal, "Multiple Station Thermal Diffusivity Instrument", *Thermal Conductivity 23*, Eds. K.E. Wilkes, R. B. Dinwiddie and R. S. Graves, Technomic Publishing Co. pp 119-127 (1996)
135. **H. Wang** and R. B. Dinwiddie, "Advanced Thermal Imaging of Composite Materials", *Advances in Ceramic-Matrix Composites III*, Ceramic Transactions, Vol. 74, pp 609-618 (1996)
136. J. D. Makinson, W.N. Weins, R. Schalek, A.C. Axtell, **H. Wang** and R.B. Dinwiddie, "Thermal Diffusivity of Nanocrystalline Copper-Iron Prepared by Mechanically Alloying", *Nanostructured Materials*, Vol 9, No. 1-8, pp 519-522 (1997)
137. R. L. Hecht R.B. Dinwiddie, W.D. Porter and **H. Wang**, "Thermal Transport Properties of Gray Cast Irons", SEA Brake Colloquium, New Orleans, LA 962126 (1996)
138. WILLIAMS JAA, SHEN CQ, VUONG KD, TENPAS E, CONDRATE RA, LEE DH, **Wang H**, FAGAN J, WANG XW, "RF aerosol mist plasma deposition of oxide films", Conference Information: Symposium on Evolution of Thin Film and Surface Structure and Morphology at the 1994 MRS Fall Meeting, NOV 28-DEC 02, 1994 BOSTON, MA, EVOLUTION OF THIN FILM AND SURFACE STRUCTURE AND MORPHOLOGY, MRS SYMPOSIUM PROCEEDINGS Volume: 355 pp: 563-568, 1995
139. **H. Wang** TENPAS E, VUONG KD, WILLIAMS JA, SCHUESSELBAUER E, BERNSTEIN R, FAGAN J, WANG XW, "CdS thin films prepared by continuous wave Nd:YAG laser", OPTICAL MATERIALS TECHNOLOGY FOR ENERGY EFFICIENCY AND SOLAR ENERGY CONVERSION XIV, PROCEEDINGS OF THE SOCIETY OF PHOTO-OPTICAL INSTRUMENTATION ENGINEERS (SPIE) Vol 2531 pp 201-207, 1995
140. **H. Wang**, W. A. Schulze and J. F. Cordaro "Averaging Effect on I-V Characteristics of ZnO Varistors" *Jpn. J. Appl. Phys.* Vol. 34, Part 1, No. 5, 2352 (1995)
141. **H. Wang**, W. Li and J. F. Cordaro "Single Junctions in ZnO Varistors Studied by I-V Characteristics and DLTS" *Jpn. J. Appl. Phys.* Vol. 34, Part 1, No. 4A, 1765 (1995)

142. **H. Wang**, "Grain Boundary Electronic Properties of ZnO Varistors-from bulk to single junctions"
Ph.D. Thesis, UMI Dissertation Information Service (1994)
143. **H. Wang**, P. F. Johnson and W. C. LaCourse "Sonic Strengthening Effect on SLS Glass" Proc.
Dalian International Conference on Glass, *China Science and Technology Press*, pp.226-230
(1991)
144. Y. S. He, J. Xiang, **H.(X) WANG**, A.S. He, J.C. Zhang, F.G. Chang, "The Structural Phase-
Transition Near 210 K of Bi-Based Superconductors" *Chinese Science Bulletin* 35: (17) 1419-
1423 (1990)
145. Y. S. He, J. Xiang, **H.(X) Wang** et al. "Possible Structural Phase Transition Near 210K of Single
Phase Bi(Pb)-Sr-Ca-Cu-O Superconducting Ceramics" *Phys .Rev. B* **40**(10) 7384 (1989)