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Department of Mechanical Engineering
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Education

1983	Ph.D in Mechanical Engineering, Georgia Institute of Technology, Atlanta Specialization in Materials Science and Engineering, Manufacturing Engineering, Quality Control and Materials Testing
1980	MS in Mechanical Engineering, Georgia Institute of Technology, Atlanta
1979	B.Tech. in Mechanical Engineering, Indian Institute of Technology, Bombay (Highest Honors)

Experience

Academic:

1997-present	Professor of Mechanical Engineering, Tufts University
2007-present	Director of International Programs, School of Engineering
1/2002 – 6/2007	Chair, Department of Mechanical Engineering, Tufts University
1989-1997	Associate Professor of Mechanical Engineering, Tufts University
1983-1989	Assistant Professor of Mechanical Engineering, Tufts University
Spring 1998	Visiting Scientist, Dept. of Materials Science and Engineering
Fall 1987	Massachusetts Institute of Technology
1979-83	Graduate Research Assistant, School of Mechanical Engineering Georgia Institute of Technology

Other Appointments:

Summer 2000	Navy/ASEE Summer Faculty Fellow, Indian Head, MD
Summer 1998	Research Scientist
Summer 1997	National Institute of Standards and Technology, Gaithersburg, MD
Summer 1995	Faculty Research Participation Program Oak Ridge National Laboratory, Oak Ridge, TN
Summer 1994	NASA/ASEE Summer Faculty Fellow
Summer 1993	NASA Lewis Research Center, Cleveland, OH
Summer 1992	Scientist-in-Residence
Jan-Aug 1991	Argonne National Laboratory, Argonne, IL

Research Interests

Research interests are in the areas of manufacturing processes, machining of engineering materials, deformation process simulation, Taguchi analysis, advanced materials, materials processing, microstructural analysis, finite element modeling, measurement and modeling of residual strains and stresses in metal, intermetallic, and ceramic matrix composites, non-destructive analysis, physical metallurgy, mechanical behavior, and heat treatment.

Courses Taught

Materials, Design and Manufacturing (EN 16) (New)
Introduction to Mechanical Engineering (ME 1)
Mechanical Engineering Laboratory (ME 18)
Engineering Materials (ME 25)
Modern Quality Control (ME 108) (New)
Advanced Engineering Materials (ME 120) (New)
Manufacturing Processes (ME 125) (New)
Computer Integrated Engineering (ME 126) (New)
Computer Graphics (ME 170)
Statistical Process Control (Tufts Gordon Institute) (New)
Metallurgy (Dental School)

Awards and Honors

2007 Fatigue Testing of 316SS in Hydrogen, Sandia National Lab.
2006 Materials for Electronic Packaging, Quantum Leap Technologies
2004 ASME Fellow
2003 "Modeling the Pinch and Roll Process," General Electric
2003 "Electronic Packaging," Quantum Leap Technologies, Inc.
2002 "An Innovative Integration of Data Acquisition and Manufacturing Practice As An Introduction to Mechanical Engineering," ASME Curriculum Innovation Award
2001-03 "Analysis of Pinch and Roll Process," General Electric
1999 Issued U.S. Patent # 5,887,854
1999-02 "Surface Smoothing using Gas Cluster Ion Beams," Dept. of Energy
1998-01 "Failure of Multi-Layered Polymer Structures," Lucent Technologies
1995-99 "Forging of Airfoils," General Electric
1992-98 SME Manufacturing Engg. Education Foundation Awards
1992-95 "Residual Stresses in Metal Matrix Composites,"
NASA Graduate Student Researchers Program (Advisor)
1991-93 "An Engineering Study of Forging of Airfoils," General Electric
1988-91 "Manufacturing Engineering at Tufts, AT&T Foundation
1987-90 "Integration on Metal Forming Simulation and Die Deformation," GE
1987 "Mechanical Testing of Composites," BBN Corp.
1984-90 SME Manufacturing Engg. Education Foundation Awards
1987 Issued U.S. Patent # 4,666,042
1986 Ralph R. Teetor Educational Award, Society of Automobile Engineers
1986 Westinghouse Foundation Grant
1979-80 President's Fellow, Georgia Tech.
1978-79 J.N. Tata Scholar, India

Invited Speaker

- "Health and Safety Problems: The Metal Casting Process," Tufts University.
- "Mechanical Behavior of Metal Matrix Composites," University of Wisconsin-Milwaukee.
- "Measurement and Modeling of Residual Strains and Stresses in High Temperature Composites," NASA Lewis Research Center.
- "Application of Taguchi Method to Optimizing Processing of Engineering Materials," AMOCO Research Center.
- "Solidification Processing," Los Alamos National Laboratory.
- "Machinability of Metal Matrix Composites," URI-Kingston.
- "Residual Strains and Stresses in Intermetallic and Ceramic Matrix Composites," Materials Week, Rosemont, IL.

ASME Professional Activities

ABET Evaluator, 2002-present

Reviewer: ASME Journals

Conferences:

Organizer, Symposium on Microstructural Development and Control in Materials Processing, 1987 ASME WAM

Organizer, Symposium on Advances in Mechanical Behavior and Properties Evaluations, 1988 ASME Winter Annual Meeting

Organizer, Symposium on Polymeric Systems, 1999 ASME WAM

Session Vice-Chairman, 1987 ASME Winter Annual Meeting

Session Chairman, 1988 ASME Winter Annual Meeting

Session Chairman, 1989 ASME Winter Annual Meeting

Session Chairman, 2002 IMECE

Professional Society: ASME - Materials Division Liaison to Nuclear Engineering Division

Editor

"Polymeric Systems," ASME, 1999 (co-editor: K. Ramani)

"Advances in Mechanical Behavior and Properties Evaluation,"
ASME, MD-Vol.7, 1988 (co-editor: A.A. Tseng)

"Microstructural Development and Control in Materials Processing"
ASME, MD-Vol. 14, 1989 (co-editor: D.R. Durham)

Other Professional Activities

Air Force Summer Faculty Fellowship Program Review Panel, Washington, D.C., Jan. 13, 2005
AFOSR Materials Research Program Panel, The National Academies, August 22-23, 2005.

Panelist, Graduate Fellowship Program, NSF, February 1-3, 2007.
Panelist, Graduate Fellowship Program, NSF, February 10-12, 2006.
Panelist, Graduate Fellowship Program, NSF, February 11-13, 2005.

Member, USIS Committee to Evaluate Mechanical Engineering
Program at University of Bahrain, Bahrain, April 1994

Reviewer: NSF (CCLI), AFS and SAE

Selected Biographical Listing: Who's Who in Technology, 5th Edition

Conferences:

Organizer, Sessions on Research and Education in CAD/CAM Integration, Third
International Conference on CAD/CAM Automation, Robotics and Factories of
the Future, Aug. 1988
Session Chairman, 1987 ANSYS Conference
Session Co-chairman, AFS Casting Congresses, '86-'88, '90-'91
Session Chairman, 1993 TMS Meeting
Session Chairman, 1994 PMP Conference

Industrial and Consulting Experience

1988-02 General Electric Company
1994 MPM Corp.
1989-90 SSG, Inc.
1987 AXYZ, Inc.
1985 National Institute for Occupational Safety and Health
Implementing health and safety engineering in mechanical engineering
curriculum
1978 Crompton Greeves Ltd., Bombay
1977 Bhilai Steel Plant, Bhilai

University Service Activities

Arts, Science and Engineering:

Member, Search Committee, Director-Tufts in London Program, 2009
Member, AAUP Executive Committee, 2003-present
Member, Graduate Student Research Grant Committee, 2005-present
Member, University Health Professions Recommendations Committee, 1998-2007
Member, University Arts Committee, 2000-2005
Chair, Undergraduate Admission and Financial Aid Committee, 2000-2001
Member, Undergraduate Admission and Financial Aid Committee, 1996-2001
Member, University Library Committee, 1994-99
Member, University Committee on Budget & Priorities, 1987-90
Member, Summer School Committee, 1986-92
Member, University Educational Policy Committee, 1985-87

Graduate Students Supervised

Ph.D Theses

1. Seungwoo Ho, Thermal Residual Stresses in Cast SiC/Aluminum Metal Matrix Composites and Its Effect on Mechanical Behavior, May 1994.
2. Gary Leisk, Acoustoelastic Evaluation and Neutron Diffraction Measurements of Thermal Residual Stresses in Tungsten Fiber-Reinforced Kanthal Metal Matrix Composites, May 1998.
3. Keith Williamson, Applications of a Fractal Mass Flow Boundary Condition for Pattern-Forming Phase Change Problems, May 1998.
4. Sammy Shina, A Design Quality and Cost Model for Printed Circuit Board Assembly, September 1998.
5. Yiping Duan, Impact Behavior and Modeling of Engineering Polymers, November 2001.
6. Vincent DiFilippo (in progress)
7. Bruck Bogale (in progress)
8. Barish Dantal (in progress)
9. Roselita Fragdoukis (in progress)
10. Matthew Fonte (in progress)

Master of Science Theses

1. K. Preston, Finite Element Method Calculations of Stress-Strain Behavior of Aluminum-Silicon Alloys, February 1988.
2. M.F. Kirsebom, A Study of Gate Vestige and Tooling Cost Minimization in Runnerless Injection Molding of Plastic, February 1989.
3. S. Ho, Study of Die Deformation Under Forging Loads, February 1990.
4. S.F. Gleykin, Forging of Compressor Blades for Jet Engines, May 1992.
5. G.G. Leisk, Mechanical Behavior and Machinability of Alumina/Aluminum Metal Matrix Composites, November 1992.
6. M.F. Gleykin, Application of Finite Element Analysis and Design of Experiment Technique to Study Jet Engine Compressor Blade Forging, May 1993.
7. Kang Zhen, Numerical Simulation and Analysis of Forging Loads and Die Deformation During Forging of Jet Engine Compressor Blades, May 1994.
8. Samir Sood, Characterization of Creep Properties of Liquid Crystalline Polymers, May 1994.
9. Namdar Bahri, Extrusion of Alumina/Aluminum Metal Matrix Composites, May 1995.
10. Paul Atherton, Finite Element Analysis of P75/934 Graphite/Epoxy Composite Material Subjected to Thermal and Mechanical Loads, May 1997.
11. Brian Dix, Thermal Stresses in Unidirectional and Cross-Ply Composite Laminates: A 3-D Micromechanical Investigation, May 1997.
12. Craig Wallace, Analysis of Friction and Heat transfer During Ring Forging of Ti-6Al-4V Alloy, May 1997.
13. Vincent DiFilippo, Characterization and Modeling of the Short-Term and Time-Dependent Properties of a Liquid Crystal Polymer, September 1997.

14. Lorainne Walsh, Technical Feasibility of Composite Material Aircraft Engine Actuation Rings, May 1998.
15. Peter Vasiloupolos, Optimal Process Design Modeling for Single Pass Wire Drawing of Iron Aluminide Fe-30Al, May 1998.
16. Weiguo Yang, Machinability Study of an Ordered Iron Aluminide Intermetallic Compound, May 1998.
17. Costas Rigas, Failure Analysis of P75/934 Graphite/Epoxy Composite Using Finite Element Modeling and Laminated Plate Theory, September 1998.
18. Mark Orphanos, Design Methods For Composite Materials and Their Application to Aerospace Structures, February 1999.
19. Benjamin Paharik, Advanced Pest Termination System Design, November 1999.
20. George E. Lawrence, Impact Behavior Models of Polymer Disks: Simulating Homogeneous and Tri-Layer Composite Disk Failure, September 2000.
21. Brian Nguyen, An Analysis of Friction and Interface Heat Transfer Coefficient of an A286 Alloy Ring Specimen During Non-isothermal Forging Process, November 2000.
22. Amit Mattoo, Impact Modeling and Design of a Polymeric Enclosure, May 2001.
23. Sanjay Nakhwa, Effective Properties and Passive damping of 1-3 Piezocomposites, May 2002.
24. Heather Shand, The Effect of Workpiece Temperature on the Machinability of Alumina/Aluminum Metal Matrix Composites, May 2002.
25. Ramesh Singh, Impact Modeling of Composite Polymeric Enclosures, September 2002
26. David Archambeault, Materials Development/Selection Methodology for Aircraft Engine Aft Cooling Plates Using Estimated Low Cycle Fatigue Life, September 2002.
27. Bruck Bogale, Extrusion of Alumina and Silicon Carbide / Aluminum Metal Matrix Composites, May 2003.
28. Jane Ng, Modeling of 1-3 Piezocomposites Passive Shunt Damping, September 2003
29. Parag Mantri, Study of Pinch and Roll Process Used to Manufacture Compressor Blades, November 2003.
30. Nancy Barton, Computer Optimization of Material Coefficients for the DSGZ Stress/Strain Constitutive Model for Glassy Polymer, February 2004.
31. Nitin Shukla, Natural Frequency of MEMS Devices, September 2004.
32. Eric Witschel, Study of Pressure Vessels and Rotary Valves in Pneumatic Conveying Systems of Lime, May 2005.
33. Chuandong Zhang, A FEA Study of Crash Behavior of 3-D S-Shape Space Frames, February 2006.
34. Peterson Silva, Characterization and Reliability Analysis of Wire Bonds Inside a Package Subjected to Cyclic Loading, May 2006.
35. Scott Tardanico, Analytical Modeling of the Pinch and Roll Process, November 2006.
36. Jim Bataglia, Characterization and Reliability Analysis of Wedge Wire Bonds Inside a Package Subjected to Ultrasonic Welding and Thermal Cycling, May 2007.
37. Dhyan Sundaresh, A Micro-CT based Mechanical Characterization of Silk Scaffolds, May 2007.
38. Matthew Siopis, Round Bar Hot Extrusion Die Life Optimization, May 2007.
39. Robert Lichter, Comparison of Sequence, ProFile and K3 Endodontic Rotary Files Using Finite Element Analysis, August 2007.
40. Katie Carbonari, Inelastic and Thermoelastic Response of Rubberlike Solids, February 2008. (with Luis Dorfmann)

41. Mark Savino, Standardized Names and Definitions for Driving Performance Measures, M.S. Thesis, May 2009
42. Prince Arora, Improving Task Performance on the Web using Browser Add-on, May 2009.
43. Danilo Lai, Impact behavior and shrinkage of liquid crystalline polymers, May 2009.
44. Emad Lababidi, Designing An Intervascular Diagnostic Catheter. (in progress)
45. Uzzal Barua, Nano-Composites. (in progress)
43. I. Bernadel, Forging of INCO 718. (in progress)
44. B. Dobson, Impact on multilayer composite materials. (in progress)
45. M. Margetts, Indentation of Piezoelectric Composites. (in progress)
46. W. Ramos, Material Property Determination using the Hardness Test. (in progress)

Master of Engineering Projects

Brian Doherty	M.Eng., May 2000
Andrew Fujiyoshi	M.Eng., May 2001
Joshua Alper	M.Eng., May 2002
James Botelho	M.Eng., May 2002
Roland D'Entremont	M.Eng., September 2002
Darbon Go	M.Eng., February 2003
Ja'afar Ismail	M.Eng., May 2003
Kathryn Grant	M.Eng., May 2004
Michael Clohecy	M.Eng., May 2004
Colleen Hangac Witherell	M.Eng., May 2005
	Evaluation of Mechanical Robustness of Lead vs. Lead-Free Solder Metallurgies with Respect to Ball Grid Array and Lead Surface Mount Components
Gregory Ryan	M.Eng., February 2006
	Mechanical Testing of Hydrogen Charged Materials
Roselita Fragoudakis	M.Eng., May 2006
	FEA Model Analysis of the Energy Absorption Capacity of 3D Space Frames
Lucrezia Calefato	M.Eng., May 2008
	Finite Element Analysis of Ballistic Impact with Military Helmets
C. Dumont	M. Eng., February 2009
	Alternative Housing Evaluation For Night Vision Goggles
Nathan Piland	M. Eng., May 2009
	Composite Buckling Study
Drian Duffy	M. Eng., May 2009
	Elastomer and Polymer Usage in Biotech: Seal Evaluation Study
Scott Bresney	M.Eng., May 2009
	Ribbon Bond Fatigue Testing

Member - Recent Thesis Committee

Barry Mickela, Analysis of Stress and Fatigue Life of a Semi-trailer Kingpin for Railway Transport, M.S. Thesis, May 2005.

Rajarshi Chowdhury, A Novel Method of AZ91D Powder Consolidation using Ultrasonic Energy, M.S. Thesis, May 2006.

Elida Smith, Establishing a Test Methodology to Evaluate the Effects of Sign Parameters on the Sign-Processing Task in a Railroad Environment, M.S. Thesis, May 2007.

Matthew Palmer, The Effects of Cross-Linking on the Stability of the Human Cervical Spine, M.S. Thesis, May 2007.

Bonan Li, Development of an Engineering Cost Model for Alternative Vehicle Systems, M.S. Thesis, August 2007.

Tejashri Aurangabadkar, Development of Well Defined Periodontal Tissue Scaffolds Consisting of PLGA and Bacterial Cellulose, M.S. Thesis, November 2007.

Robert Lind, Variably-Curved, Meshed Thin Shells: Geometry, Mechanics, and Fabrication, Ph.D. Thesis, February 2008.

Rakesh Venkatesh, Electrophoretic Deposition of Concentrated Silica Suspensions, Ph.D Thesis, May 2008

Christian Skipper, Effects of Internal Hydrogen on Fatigue Strength of Type 316 Stainless Steel , M.S. Thesis, May 2008

Jacqueline Johannas, Characterization of Silk Electrospun Tubes for Small Diameter Vascular Tissue Engineering, M.S. Thesis, August 2008

REFEREED TECHNICAL PUBLICATIONS

Journal Publications

1. "Fracture Related Properties of A357-T6 Cast Alloy and Their Interrelation with Microstructure," C.W. Meyers, A. Saigal and J.T. Berry, AFS Transactions, 1983, pp. 281-288.
2. "Finite Element Method Analysis of the Effect of Chilling and Modification on Localized Yielding and Crack Initiation in Al-Si Alloys," A. Saigal and J.T. Berry, AFS Transactions, 1984, pp. 703-708.
3. "Study of Effects of Volume Fraction, Size and Shape of Silicon Particles on Mechanical Properties of Al-Si Alloys using Finite Element Method," A. Saigal and J.T. Berry, AFS Transactions, 1985, pp. 699-704.
4. "Stress and Strain Distribution in Two-Phase Aluminum Silicon Alloys," A. Saigal, AFS Transactions, 1986, pp. 219-224.
5. "Study of Deformation Behavior of Two-Phase Alloys Using Acoustic Emission," A. Saigal, AFS Transactions, 1987, pp. 47-50.
6. "Women in Engineering: An Insight Into Their Problems," A. Saigal, Engineering Education, December 1987, pp. 194-195.
7. "Safety and Health Materials for Integration into Engineering Curriculum," N.B. Hanes, A.M. Rossignol, L. Edgers, J.G. Kreifeldt, J. Meldon, A. Saigal and A. Uhlir, The International Journal of Applied Engineering Education, Vol. 3, No. 5, 1987, pp. 475-487.
8. "Elasto-Plastic Modeling of Aluminum-Silicon Alloys," A. Saigal and K. Preston, AFS Transactions, 1988, pp. 183-190.
9. "Professional Prejudices Against Women Engineering" A. Saigal and R. Saigal, Women in Higher Education: Changes and Challenges, Ed. L.B. Welch, Praeger Publishers, January 1988, pp. 40-45.
10. "Effect of Some Deposition Parameters on the Strength of CVD Beta SiC" A. Saigal and N. Das, Advanced Ceramic Materials, November 1988, pp. 580-583.
11. "Modeling Silicon Carbide Reinforced Aluminum Foundry Alloys," A. Saigal, AFS Transactions, 1990, pp. 341-344.
12. "Tensile Properties of SiC Reinforced Aluminum Cast Composites: Finite Element Analysis," A. Saigal, AFS Transactions, 1991, pp. 713-716.
13. "Residual Thermal Strains and Stresses in Nickel Aluminide Matrix Composites," A. Saigal and D.S. Kupperman, Scripta Metallurgica et Materialia, 25(11), 1991, pp. 2547-2552.
14. "A Statistical Approach to the Heat Treatment Optimization of Aluminum-Alumina Particulate Composites," G. Leisk and A. Saigal, Journal of Materials Engineering and Performance, 1(1), February 1992, pp. 45-48.

15. "Residual Strains in SiC/Ti-24Al-11Nb High Temperature Composites," A. Saigal, D.S. Kupperman and S. Majumdar, Materials Science and Engineering, A150(1), 1992, pp. 59-65.
16. "Heat Treatment Optimization of Alumina/Aluminum Metal Matrix Composites Using the Taguchi Approach," A. Saigal and G. Leisk, Scripta Metallurgica et Materialia, 26(6), 1992, pp. 871-876.
17. "Measurement of Residual Strains in Composites by Time-of-Flight Neutron Diffractions," D.S. Kupperman, S. Majumdar, J.P. Singh, J. Richardson and A. Saigal, Transactions of the American Crystallographic Association, Vol. 29, 1993, pp. 87-93.
18. "Thermal Residual Strains and Stresses in SiC-Fiber-Reinforced Silicon Nitride Composites," A. Saigal, D.S. Kupperman, J.P. Singh, D. Singh, J. Richardson and R.T. Bhatt, Composites Engineering, 3(11), 1993, pp. 1075-86.
19. "Thermal Residual Stresses and Mechanical Behavior of Cast SiC/Aluminum Composites," S. Ho and A. Saigal, Materials Science and Engineering, A183, 1994, pp. 39-47.
20. "Solidification of SiC/Al Fiber-Reinforced Metal Matrix Composites," S. Ho and A. Saigal, Scripta Metallurgica et Materialia, 31(3), 1994, pp. 351-356.
21. "Machinability of Silicon Carbide/Aluminum Metal Matrix Composites," A. Saigal and S. Torrente, AFS Transactions, 1994, pp. 291-295.
22. "Three-Dimensional Modeling of Thermal Residual Stresses and Mechanical Behavior of Cast SiC/Al Particulate Composites," S. Ho and A. Saigal, Acta Metallurgica et Materialia, 42(10), 1994, pp. 3253-62.
23. "Taguchi Analysis of Heat Treatment Variables on the Mechanical Behavior of Alumina/Aluminum Metal Matrix Composites," G. Leisk and A. Saigal, Composites Engineering, Vol. 5, No. 2, 1995, pp. 129-142.
24. "High-Temperature Ultrasonic Characterization of Ag-Clad Superconductor Tapes," M.T. Lanagan, D.S. Kupperman, G.A. Yaconi, S.H. Gilmore and A. Saigal, IEEE Transactions on Applied Superconductivity, 5(2), 1995, pp. 1475-1478.
25. "Forging of Compressor Blades: Temperature and Ram Velocity Effects," A. Saigal, K. Zhen and T.S. Chan, ASME Journal of Engineering for Gas Turbines and Power, 117(3), July 1995, pp. 528-533.
26. "The Acoustoelastic Measurement of Elastic Constants in Alumina/Aluminum Metal Matrix Composites," G.G. Leisk and A. Saigal, Scripta Metallurgica et Materialia, 33(7), 1995, pp. 1151-1157.
27. "Neutron Diffraction Measurement of Residual Strains in Tungsten Fiber-Reinforced Kanthal Composites," A. Saigal, G.G. Leisk, S.T. Mixture and C.R. Hubbard, Scripta Metallurgica, 34(8), 1996, pp. 1309-1313.
28. "Solidification of SiC Particulate-Reinforced Aluminum Metal Matrix Composites," S. Ho and A. Saigal, Advanced Composite Materials, 5(3), 1996, pp. 213-224.
29. "Digital Computer Algorithms to Calculate Ultrasonic Wave Speed," G.G. Leisk and A. Saigal, Materials Evaluation, 54(7), July 1996, pp. 840-843.

30. "Machinability of Cast Lead-Free Yellow Brass Containing Graphite Particles," A. Saigal and P.K. Rohatgi, AFS Transactions, 1996, pp. 225-228.
31. "Using Labview Under Windows in Advanced Ultrasonic Testing," G.G. Leisk, A. Saigal and J.M. Pereira, Nondestructive Testing and Evaluation, 13(1), 1996, pp. 31-40.
32. "Modeling Self-Similar Dendrite Arrays With a Cantor Middle-Third Set of Line Segments," K. Williamson and A. Saigal, Computational Materials Science, 6(4), 1996, pp. 343-349.
33. "The Short and Long Term Properties of a Liquid Crystalline Polymer at Elevated Temperatures: Characterization and Modeling," A. Saigal, V. DiFilippo, and M.A. Zimmerman, Journal of Electronic Materials, 26(7), 1997, pp. 847-851.
34. "Residual Strains and Stresses in Tungsten/Kanthal Composites," A. Saigal and G.G. Leisk, Materials Science and Engineering, A237, 1997, pp. 65-71.
35. "A Quality-Based Cost Model for New Electronic Systems and Products," S. G. Shina and A. Saigal, JOM - The Journal of The Minerals, Metals and Materials Society, April 1998, pp. 29-33.
36. "Effect of Interface Properties on Microcracking of Iron Titanate," A. Saigal, E.R. Fuller, Jr., S.A. Langer, W.C. Carter, M.H. Zimmerman and K.T. Faber, Scripta Materialia, 38(9), 1998, pp. 1449-1453.
37. "Applications of Self-Defined Arrays for Pattern-Forming Alloy Solidification," K. Williamson and A. Saigal, Computational Materials Science 11(1), 1998, pp. 27-34.
38. "Technology Based Cost Modeling for Manufacturing and Material Selection in New Product Development," S. G. Shina and A. Saigal, ASME Journal of Manufacturing Science and Engineering, 120(2), May 1998, pp. 368-375.
39. "Electrical Response During Indentation of a 1-3 Piezoelectric Ceramic-Polymer Composite," A. Saigal, A.E. Giannakopoulos, H.E. Pettermann and S. Suresh, Journal of Applied Physics, 86(1), July 1, 1999, pp. 603-606.
40. "Using Cpk as a Design Tool for New System Development," S.G. Shina and A. Saigal, Quality Engineering, 12(4), June 2000, pp. 551-560.
41. "Analysis of Stresses in Aluminum-Silicon Alloys," A. Saigal and E.R. Fuller, Jr., Computational Materials Science, 21(1), 2001, pp. 149-158.
42. "Parametric Study of the Volume Fraction of Fibers in 1-3 PZT/Polyurethane Piezoelectric Composites During Indentation," A. Saigal, A.E. Giannakopoulos, and S. Suresh, Ferroelectrics, 255, 2001, pp. 1-12.
43. "A Uniform Phenomenological Constitutive Model for Glassy and Semicrystalline Polymers," Y. Duan, A. Saigal, R. Greif and M.A. Zimmerman, Polymer Engineering and Science, 41(8), August 2001, pp. 1322-1328.
44. "Manufacturing Costs of Electronic Products," S. Shina and A. Saigal, Encyclopedia of Materials: Science and Technology, Elsevier Science, November 2001, Vol. 3, pp. 2725-2729.
45. "Analysis of Multiaxial Impact Behavior of Polymers," Y. Duan, A. Saigal, R. Greif and M.A. Zimmerman, Polymer Engineering & Science, 42(2), February 2002, pp. 395-402.

46. "An Innovative Integration of Data Acquisition And Manufacturing Practice As An Introduction To Mechanical Engineering," V.P. Manno and A. Saigal, ASME Curriculum Innovation Award, 2002, www.asme.org/education/enged/awards/cia02/tufts.pdf.
47. "Analysis of Milling of Iron Aluminides," A. Saigal and W. Yang, Journal of Materials Processing Technology, 132(1-3), January 10, 2003, pp. 149-156.
48. "Impact Behavior and Modeling of Engineering Polymers," Y. Duan, A. Saigal, R. Greif and M.A. Zimmerman, Polymer Engineering & Science, January 2003, 43(1), pp. 112-124.
49. "Modeling Multiaxial Impact Behavior of a Glassy Polymer," Y. Duan, A. Saigal, R. Greif and M.A. Zimmerman, Materials Research Innovations, February 2003, 7(1), pp. 10-18.
50. "Residual Stress and Strain in Tungsten Fiber Reinforced Kanthal Metal Matrix Composites," P. Rangaswamy, I.J. Beyerlein, M.A.M. Bourke M.B. Prime, A. Saigal and T.O. Williams, Philosophical Magazine A, 83(19), July 2003, pp. 2267-2292.
51. "Impact Behavior of Recycled Core Composite Polymeric Enclosures," R. Singh, A. Saigal and R. Greif, Composite Structures, 61(4), September 2003, pp. 321-332.
52. "Silicon Carbide Wafer Polishing with Gas Cluster Ion Beams," V. DiFilippo, J.A. Bennet, D.B Fenner, J.K. Hirvonen, L.C. Feldman and A. Saigal, International Journal of Advanced Manufacturing Systems, 7(2), 2004, pp. 49-56.
53. "Optimizing the Design and Impact Behavior of a Polymeric Enclosure," R. Singh, A. Mattoo and A. Saigal, Materials and Design 27, 2006, pp. 955-967.
54. "Crash Behavior of a 3-D S-Shape Space Frame Structure," C. Zhang and A. Saigal, Journal of Materials and Processing Technology, 191, August 2007, pp. 256-259.

Refereed Conference Proceedings

1. "The Machinability of Cast Irons - A Review," J.T. Berry, F. Salame-Lama and A. Saigal, Proceedings of the International Conference on Influence of Metallurgy on the Machinability of Engineering Materials, ASM, Sept. 1982, pp. 93-120.
2. "The Single Ligament Test - A New Concept in Materials Testing," A. Saigal, ASME Winter Annual Meeting, Dec. 1986, Paper No. 86-WA/MATS-18.
3. "Finite Element Method Calculations of Stress-Strain Behavior of Al-Si Alloys," A. Saigal and K. Preston, ANSYS 1987 Conference Proceedings, pp. 6.45-6.53.
4. "Computer Modeling of Deformation of Premium Quality Casting," A. Saigal, Technology of Premium Quality Castings, TMS/AIME, February 1987, pp. 57-70.
5. "Manufacturing Engineering: A University Response to a National Need," A. Saigal and R. Greif, Proceedings of 95th ASEE Annual Conference, June 1987, Vol. 2, pp. 501-506.
6. "Integrating Materials and Manufacturing Concepts for Optimal Cost Benefit Ratios: A Case Study," A. Saigal, Proceedings of 96th ASEE Annual Conference, June 1988, pp. 1293-1297.
7. "CAD/CAM Integration For Injection Mold Design" S.S. Chern and A. Saigal, Proceedings of Third International Conference on CAD/CAM Robotics and Factories of the Future, Vol. I: Integration of Design, Analysis and Manufacturing, 1988, pp. 39-45.
8. "Measurement of Anisotropic Properties Using the Single Ligament Test" A. Saigal, ASME Winter Annual Meeting, Proceedings of Symposium on Advances in Mechanical Behavior and Properties Evaluations, December 1988, pp. 23-29.
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