

Guruswami (Ravi) Ravichandran

John E. Goode, Jr. Professor
Otis Booth Leadership Chair
Division of Engineering and Applied Science
California Institute of Technology
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EDUCATION

Ph.D.	1986	Engineering (Solid Mechanics and Structures) Minors: Materials Science and Applied Mathematics	Brown University
Sc.M.	1984	Applied Mathematics	Brown University
Sc.M.	1983	Engineering (Solid Mechanics and Structures)	Brown University
B. E. (Honors)	1981	Mechanical Engineering	University of Madras

POSITIONS HELD

California Institute of Technology

Otis Booth Leadership Chair, Division of Engineering and Applied Science, 2015-

Director, Graduate Aerospace Laboratories (GALCIT), 2009-'15

John E. Goode, Jr. Professor of Aerospace and Mechanical Engineering, 2010-

Associate Director, Graduate Aerospace Laboratories (GALCIT), 2008-'09

John E. Goode, Jr. Professor of Aeronautics and Mechanical Engineering, 2005-'10

Professor of Aeronautics and Mechanical Engineering, 2000-'05

Professor of Aeronautics, 1999-2000

Associate Professor of Aeronautics, 1995-'99

Assistant Professor of Aeronautics, 1990-'95

University of California, San Diego

Assistant Professor, Department of Applied Mechanics and Engineering Sciences, 1987-'90

California Institute of Technology, Research Fellow, Aeronautics, 1986-'87

Visiting Appointments

Indian Institute of Science, Aditya Birla Chair Visiting Professor, 2007 (Summer)

Tokyo Institute of Technology, Chair in International Cooperation Professor, 2005 (Summer)

Ecole Polytechnique, France, CNRS Senior Visiting Scientist, 2001-'02

University of Metz, France, Invited Professor, 1999-2006 (Short visits)

TEACHING

Division of Engineering and Applied Science, California Institute of Technology, 1990-

Undergraduate Course in Mechanics of Materials and Mechanical Engineering Laboratory

Graduate Courses in Mechanics of Structures and Solids, Experimental Methods, Mechanics and Materials Aspects of Fracture Mechanics, Plasticity, and Dynamic Behavior of Materials

Department of Applied Mechanics and Engineering Sciences, University of California, San Diego, 1987-'90

Undergraduate Courses in Advanced Solid Mechanics, Engineering Graphics, Experimental Techniques, and Mechanical Engineering Laboratory

Graduate Courses and Lecture Series in Mechanical Behavior of Materials, Stress Waves in Solids, Dynamic Behavior of Materials, and Dynamic Fracture

Short Courses

Fracture Mechanics and Failure Analysis, An annual training course for engineers and scientists from national labs, industry and academia, ETech, Inc., Pasadena, CA, 1994-'98

Fracture Mechanics of Microelectronics Devices, Intel University, Chandler, AZ, 2000

Linear and Nonlinear Fracture Mechanics, Japan Society of Materials Science, Tokyo, 2005

Application of Fracture Mechanics Concepts to the Reliability Analysis of Microelectronic Components, Intel Corporation, Chandler, AZ, 2007

HONORS AND AWARDS

Kobayashi-Morrison Lecture, University of Washington, 2016

Member, National Academy of Engineering, 2015

Jerzy L. Nowinski Lecture, University of Delaware, 2015

Werner Koster Prize (2014 Best Paper Award, International Journal of Materials Research), 2015

Leaders in Engineering Lecture, Rensselaer Polytechnic Institute, 2015

Warner T. Koiter Medal, American Society of Mechanical Engineers (ASME), 2014

William M. Murray Lecture and Medal, Society for Experimental Mechanics (SEM), 2014

A.C. Eringen Medal, Society of Engineering Science (SES), 2013

Distinguished Williams Lecture, Colorado School of Mines, 2013

Walter O'Connell Memorial Lecture, Los Angeles City College, 2013

Foreign Member, European Academy of Sciences and Arts, 2012

Foreign Member, International Academy of Engineering, 2012

Fellow, American Academy of Mechanics (AAM), 2012

Earnest C. Watson Lecture, California Institute of Technology, 2012

Distinguished Lecture in Aerospace, Georgia Institute of Technology, 2012

Chevalier de l'ordre des Palmes Academiques, Republic of France, 2011

Best Paper Award in Dynamic Behavior of Materials, Society for Experimental Mechanics, 2011

Fellow, Society for Experimental Mechanics (SEM), 2010

Andrew Heiskell Award for Innovation in International Education, Dual Masters Program between Caltech and Ecole Polytechnique, Institute of International Education-IIE, 2010
Plenary Lecture, 9th Asia-Pacific Conference for Materials and Mechanics, Yokohama, Japan, 2009
Charles Russ Richards Memorial Award, Pi Tau Sigma and American Society of Mechanical Engineers (ASME), 2008
M. Hetenyi Award, Society for Experimental Mechanics (SEM), 2008 (for Best Paper published in Experimental Mechanics in 2006)
Distinguished Alumni Award for Academic Excellence, National Institute of Technology, Trichy (NITT), India, 2008
Midwest Mechanics Lecturer (10 Universities: Illinois, IIT, Iowa State, Michigan, Michigan State, Minnesota, Northwestern, Notre Dame, Purdue, Wisconsin), 2007-'08
Aditya Birla Chair Visiting Professor, Indian Institute of Science, Bangalore, India, 2007
Doctor honoris causa (Dhc), Paul Verlaine University, Metz, France, 2006
John E. Goode, Jr. Endowed Professorship, California Institute of Technology, 2005
Chair in International Cooperation Visiting Professor, Tokyo Institute of Technology, Japan, 2005
B. J. Lazan Award, Society for Experimental Mechanics (SEM), 2005 (for outstanding original contributions to experimental mechanics)
Best Paper Award in Adaptive Structures and Material Systems, Aerospace Division, American Society of Mechanical Engineers (ASME), 2005
Senior Visiting Scientist, CNRS and Ecole Polytechnique, France, 2001-'02
Southwest Mechanics Lecturer (4 Universities: Houston, Texas A&M, Texas-Arlington, Tulane), 2001
Fellow, American Society of Mechanical Engineers (ASME), 2000
Honors Lecture, University of Rhode Island, 1998
Alumni Day Seminar, California Institute of Technology, 1993
Presidential Young Investigator Award, National Science Foundation, 1991
Elected to Sigma Xi (Scientific Honor Society), 1983
Merit Scholar, Regional Engineering College, Trichy, India, 1976-'81
National Merit Certificate, Government of India, 1975

SOCIETY MEMBERSHIPS

American Society of Mechanical Engineers (ASME)
Society for Experimental Mechanics (SEM)
American Academy of Mechanics (AAM)

PROFESSIONAL ACTIVITIES

Professional Societies

Chair, Aerospace Historical Society (AHS), 2009-'15
President, Society for Experimental Mechanics, 2015-'16
Member-at-Large, Executive Board, Society for Experimental Mechanics, 2006-'08
Chair, ASME AMD Technical Committee on Fracture and Failure Mechanics, 1995-'97
Treasurer, American Academy of Mechanics (AAM), 1988-'90

National Academies

Member, Panel on Survivability and Lethality Analysis, Army Research Laboratories Technical Assessment Board (ARLTAB), National Research Council, 2009-'12

Member, US National Committee on Theoretical and Applied Mechanics (USNC/TAM), 2010-'14

Chair, USNC/TAM Sub-Committee on AmeriMech symposia, 2013-'14

Editorial

Editorial Advisor, *Journal of the Mechanics and Physics of Solids*, 2013-

Editorial Board, *International Journal of Strain*, 2011-

Editorial Board, *International Journal of Sandwich Structures*, 2008-'16

Associate Technical Editor, *ASME Journal of Engineering Materials and Technology*, 1997-2000

Associate Editor, *Experimental Mechanics*, 1997-2000

Editorial Board, *Mechanics*, 1997-2002

Reviewed papers for journals including:

Journal of the Mechanics and Physics of Solids, Journal of Applied Mechanics, International Journal for Solids and Structures, Mechanics of Materials, International Journal of Fracture, Journal of Engineering Materials and Technology, Journal of Composites Science and Technology, Journal of Composite Materials, Journal of Composites Engineering, Journal of Time-Dependent Materials, Experimental Mechanics, International Journal of Plasticity, Journal of Pressure Vessels and Technology, AIAA Journal, Journal of Spacecraft, Journal of Applied Physics, Applied Physics Letters, Acta Materialia, Scripta Materialia, Metallurgical Transactions A, Materials Science and Engineering, Journal of the American Ceramic Society, SIAM Journal of Applied Mathematics, Engineering Fracture Mechanics, Journal of Elasticity, Philosophical Magazine, Soft Matter, Smart Structures and Materials, Journal of Adhesion, Proceeding of the National Academy of Sciences

Reviewed technical manuscripts of prospective books for Cambridge University Press, John Wiley, Springer

Reviewed proposals for National Science Foundation, Army Research Office, National Research Council, Israel Science Foundation, International Science Foundation, Institute of Geophysics and Planetary Physics (IGPP), LLNL Materials Institute, DEPCOR, URI Transportation Center, Partner University Fund (Embassy of France), American Association for the Advancement of Science

Panel Member, CAREER, NIRT, Individual Investigator and Equipment Grants, National Science Foundation

Conference, Symposium, Workshop Organization

Chair, 9th International Conference in Sandwich Structures (ICSS-9), Pasadena, CA, 2010

Organizer, GEM⁴ Summer School on Cell and Molecular Mechanics in Biomedicine with a focus on Cardiovascular systems, Pasadena, CA, 2008 (with M. Gharib)

Organized symposiums & conferences including Dynamic Response of Ceramics at the 29th SES Annual Technical meeting, UCSD, La Jolla, CA, 1992; Dynamic Behavior of Advanced Materials at the 12th US National Congress of Applied Mechanics, Seattle, WA; 1994 (with A. Shukla); Dynamic Failure Mechanics at the 31st SES Annual Technical Meeting, Texas A&M University, College Station, TX, 1994 (with A. J. Rosakis); Mechanics and Materials Aspects of Dynamic Failure at the ASME Winter Annual Meeting, Chicago, IL, 1994; Caltech/JPL workshop on Survivable Penetrators for Space Applications, 1995; 20th International Symposium on Shock Waves (ISSW), Pasadena, CA, 1995 (Organizing committee); Rupture Dynamics, ASME AMD/MD Summer Meeting, Johns

Hopkins University, Baltimore, MD, 1996 (with P. H. Geubelle); ONR/ARO Symposium to honor R. J. Clifton on Dynamic Deformation and Failure Mechanics of Materials, Caltech, 1997 (with A. J. Rosakis, M. Ortiz, Y. D. S. Rajapakse and K. Iyer); International Symposium on Meso-Mechanical Aspects of Strength and Fracture, Caltech, 1998; Adiabatic Shear Banding and Dynamic Failure, ASME AMD/MD Summer Meeting, Virginia Tech, 1999 (with A. M. Rajendran); Prager Medalist L. B. Freund Symposium on Dynamic Failure Mechanics and Thin Films, SES Annual Technical Meeting, University of South Carolina, Columbia, SC, 2000 (with A. J. Rosakis); ICF-10 Symposium on High-Strain-Rate Failure, Honolulu, Hawaii, 2001; ONR/Elsevier Symposium to honor L. B. Freund on Dynamic Failure and Thin Film Mechanics, Caltech, 2003 (with A. J. Rosakis and S. Suresh); Dynamic Deformation and Failure Mechanics, SEM, Charlotte, NC, 2003 (with A. J. Rosakis and W. Chen); Dynamic Behavior of Materials, ICM-9, Geneva, Switzerland, 2003; Solid and Structural Mechanics Symposium on the occasion of the 75th Anniversary of GALCIT, Pasadena, 2003; W. G. Knauss Symposium on Current Trends in Mechanics, Pasadena, 2004 (with K. Ravi-Chandar and K. Liechti); Symposium to honor C. F. Shih on Physics and Mechanics of Materials, Singapore, 2006; Symposium to honor R. J. Clifton on Mechanics of Materials, Annapolis, MD, 2007 (with K. T. Ramesh); Symposium on Advanced Materials, 9th ASME Biennial Conference on Engineering Systems Design and Analysis, Haifa, Israel (2008) (with D. Rittel); Workshop on Hull Slamming, Pasadena, CA (with M. Battley and Y. D. S. Rajapakse), 2009; International Mechanics and Materials International Symposium for Young Researchers, Pasadena, CA (with J. Komotori), 2010; Workshop on Hull Slamming, College Park, MD, 2010 (with M. Battley, S. Abrate and Y. D. S. Rajapakse); Symposium to honor J. R. Rice, Pasadena, CA, 2011 (with N. Lapusta, A. J. Rosakis and M. Gurnis); Symposium to honor L. B. Freund, Providence, RI, 2011 (with K.S. Kim, H. Gao and A. J. Rosakis); SES Medalist K.S. Kim Symposium, Society of Engineering Science, Atlanta, GA, 2012 (with A. Bastawros, P. Shrotriya and S. Xia); Symposium to honor R.J. Clifton, Society of Engineering Science, Providence, RI, 2013 (with H. Espinosa and K.S. Kim); Pressure Shear Technology Review, Shalimar, FL, 2014 (with L. Chhabildas)

UNIVERSITY AND DEPARTMENTAL ACTIVITIES

California Institute of Technology

Institute (Caltech)

- Presidential Search Committee, 2013
- Biological Sciences Initiative Committee, 2011
- Steering Committee, Keck Institute for Space Studies (KISS), 2009-‘13
- Beckman Institute Review Committee, 2011
- Faculty Board, 2005-‘09
 - Steering Committee, 2006-‘09
 - Nominating Committee, 2005-‘06
- Graduate Studies Committee, 2008-‘09
- Facilities Director, Center for Science and Engineering of Materials (CSEM), 2004-‘11
- Chair, Matriculation Committee, 2000-‘01
- Patents and Relations with Industry Committee, 1999-2005
- Freshman Admissions Committee, 1997-2000

Division (Engineering and Applied Science)

- Division Advisory Group, Engineering and Applied Science, 2009-‘15
- Division Steering Group, Engineering and Applied Science, 2004-‘05

Chair and member of various committees for hiring, tenure and promotion of faculty in Aerospace, Mechanical Engineering, and Materials Science, 1995- 2015

Committee for Undergraduate Curriculum, 2002-'08

Department (Aerospace, Mechanical Engineering)

Director, Graduate Aerospace Laboratories (GALCIT), 2009-'15

GALCIT Advisory Council (*Ex-officio*), 2008-'09

Associate Director, GALCIT, 2008-'09

Guggenheim Building Renovation Committee, 2006-'08

Various departmental committees for: Admissions, Awards, Machine Shop, Staffing, 1990-2015

Graduate Admissions Committee, Mechanical Engineering, 2002-'15

Undergraduate Option Representative, Mechanical Engineering, 2002-'08

University of California, San Diego

Department of Applied Mechanics and Engineering Sciences (AMES)

Undergraduate Affairs Committee, 1987-'89

Graduate Affairs Committee, 1988-'90

Faculty Advisor, American Society of Mechanical Engineers (ASME) Student Chapter, 1988-'90

CONSULTING

Ceracon, Inc., Modesto, California
ETECH, Inc., Pasadena, California
eV3 (Neurovascular), Irvine, California
GRAFTcath, Inc., Eden Prairie, Minnesota
Orqis Medical, Lake Forrest, California
Reshape Medical, San Clemente, California
Sequent, Aliso Viejo, California
SPARTA, Inc., Laguna Hills, California
TRW, Manhattan Beach, California
Vascular Architects, San Jose, California
Wyle Laboratories, Edwards AFB, California

PERSONNEL SPONSORED

Doctoral Students

Weinong Chen* (1995) (Purdue), Mark Walter* (1996) (Ohio State), Jon Hodowany* (1997) (Industry), Karina Edmonds (1997) (Caltech), Kenji Oguni (2000) (Keio University), Eric Buresu† (2001) (MIT Lincoln Laboratory), Shiming Zhuang* (2002) (Kimberly Clark), Jun Lu (2002) (International Rectifiers, Inc), Rongjing Zhang† (2006) (USTC), Min Tao (2006) (Intel), Theresa Kidd* (2007) (Northrop Grumman), Samantha Daly◊ (2007) (University of Michigan), Christian Franck* (2008) (Brown), Winston Jackson◊ (2008) (Northrop Grumman), Ling Zheng◊ (2009) (Intel), Benny Poon (2009) (Intel), Sharlotte Kramer++ (2009) (Sandia), Michael Silva (2011) (Princeton Consulting), Christopher Kovalchick◊ (2011) (Becton Dickinson), Justin Brown** (2011) (Sandia),

Jacob Notbohm** (2013) (Harvard SPH), Kristen John (2014) (NASA), Victoria Stolyar (2014) (Harris Corporation), Michael Rauls** (Intel)

Current Ph.D. Students

Zach Sternberger, Christian Kettenbeil, Matthew Newman, Louisa Avellar, Kimberly MacDonald, Tomoyuki Oniyama

**Recipient of the William F. Ballhaus Prize for outstanding doctoral dissertation in Aerospace*

***Recipient of the Centennial Prize for the best thesis in Mechanical and Civil Engineering*

†*Recipient of the Donald Coles Prize in Aeronautics for the best design of an experiment for doctoral dissertation in Aerospace*

‡*Recipient of the Hans Hornung Prize for best dissertation presentation in Aerospace*

◊*Recipient of the Charles D. Babcock Prize for contributions to teaching in Aerospace*

Engineer's Degree Students

Mullahalli Srinivas (1993) (GE), Nitin Deshpande (1998) (Intel)

Post-Doctoral Scholars

Ghatu Subhash (University of Florida), Wei Tong (Southern Methodist), David Owen (Ultratech), Min Zhou (Georgia Tech), Sunil Yadav (Bank of America), Sangwook Lee (Boeing), Yann Carin (Peugeot), Murat Vural (Illinois Institute of Technology), Wei Zhang (Industry), Doron Shilo (Technion), Yabei Gu (Corning), Abhishek Bhattacharyya (Industry), Soonsung Hong (Michigan State), Jianheng Zhao (IFP, CAEP), H. J. Kwon (Waterloo), Arjun Tekalur (Michigan State), Laurent Ponson (Universite Marie et Pierre Curie), Maen Alkhader (SUNY, Stony Brook), Laurence Bodelot (Ecole Polytechnique), Addis Kidane (University of South Carolina), Shuman Xia (Georgia Tech), Aaron Albrecht (Aerospace Corporation), Aaron Stebner (Colorado School of Mines), Dipankar Ghosh (Old Dominion), Nikhil Karanjgaokar (Worcester Polytechnic), Owen Kingstedt (Utah)

Visiting Associates

Doo-Hyun Baik (ADD), Atul Chokshi (IISc), S. C. Deevi (ORNL), Arie Venkert (NRCN), Joseph Sariel (NRCN), Louis Hallez (Ecole Polytechnique), Jean-Noel Truchet (Ecole Polytechnique), Jean-Thibault de Besombes (Ecole Polytechnique), Aurlien Miller (Ecole Polytechnique), Alain Molinari (University of Metz), Nathanael Kriven (Ecole Polytechnique), Daniel Rittel (Technion), Elizabeth Bouchaud (CEA), Herzl Chai (Tel Aviv), Loic Peletan (ENS-Cachan), Robin Briend (Ecole Polytechnique), Alban de Vaucorbeil (ENS-Cachan), Soon-Bok Lee (KAIST), Bilel Ourertani (ENS-Cachan), Arun Shukla (URI), Ishan Tembhekar (IIT-GN), Gwanael Huelou (ENS-Cachan), Alexandra Gdoutou (Northwestern), Benoit Voillot (ENS-Cachan), Mohak Patel (IIT-GN), Satoshi Kumagai (Tokyo Tech), Yasuyuki Morita (Nagoya U), Shigeki Yashiro (Shizuoka U), Thibaud Talon (Ecole Polytechnique), Andrei Pissarenko (ENS-Cachan), Jean-Sebastien Coin-Perard (ENS-Cachan), Jean-Pierre Voropaieff (Ecole Polytechnique)

INVITED LECTURES/SEMINARS

Delivered more than 200 invited lectures/seminars in academia, industry, DoD/DoE laboratories and at national and international conferences. Selected recent presentations:

Kobayashi-Morrison Lecture, University of Washington, 2016
Jerzy L. Nowinski Lecture, University of Delaware, 2015
Warner T. Koiter Lecture, American Society of Mechanical Engineers, 2014

PUBLICATIONS

Journal Articles

- G. Ravichandran and W. G. Knauss, A Finite Elastostatic Analysis of Bimaterial Interface Cracks, *International Journal of Fracture*, 39, 235-253 (1989)
- G. Ravichandran and R. J. Clifton, Dynamic Fracture Under Plane Wave Loading, *International Journal of Fracture*, 40, 157-201 (1989)
- R. Godse, G. Ravichandran and R. J. Clifton, Micromechanisms of Dynamic Crack Propagation in an AISI-4340 Steel, *Materials Science and Engineering*, A112, 79-88 (1989)
- K. T. Ramesh and G. Ravichandran, Dynamic Behavior of a Boron Carbide-Aluminum Cermet: Experiments and Observations, *Mechanics of Materials*, 10, 19-29 (1990)
- S. Krishnaswamy, A. J. Rosakis and G. Ravichandran, On the Extent of Dominance of Asymptotic Elastodynamic Crack-tip Fields; Part II: Numerical Investigation of Three Dimensional and Transient Effects, *Journal of Applied Mechanics*, 58, 95-103 (1991)
- A. J. Rosakis, J. J. Mason and G. Ravichandran, The Conversion of Plastic Work to Heat around a Dynamically Propagating Crack in Metals, *Journal of Mechanical Behavior of Materials*, 4, p. 375-385 (1992)
- W. Tong and G. Ravichandran, Dynamic Pore Collapse in Viscoplastic Materials, *Journal of Applied Physics*, 74, 2425-2435 (1993)
- M. V. Srinivas and G. Ravichandran, Interfacial Crack Propagation in a Thin Viscoelastic Film Bonded to an Elastic Substrate, *International Journal of Fracture*, 65, 31-47 (1994).
- G. Subhash, Y. J. Lee and G. Ravichandran, Plastic Deformation of CVD Textured Tungsten: Part I. Constitutive Response, *Acta Metallurgica et Materialia*, 42, 319-330 (1994)
- G. Subhash, Y. J. Lee and G. Ravichandran, Plastic Deformation of CVD Textured Tungsten: Part II. Characterization, *Acta Metallurgica et Materialia*, 42, 331-340 (1994)
- G. Ravichandran and G. Subhash, Critical Appraisal of Limiting Strain Rates for Testing Ceramics in a Split Hopkinson Pressure Bar, *Journal of the American Ceramic Society*, 77, 263-67 (1994)
- J. J. Mason, A. J. Rosakis and G. Ravichandran, On the Strain and Strain-Rate Dependence of Plastic Work Converted to Heat: An Experimental Study Using High Speed Infrared Detectors and the Kolsky Bar, *Mechanics of Materials*, 17, 135-145 (1994)
- G. Ravichandran, Influence of Processing on the High Strain Rate Behavior of Refractory Metals-A Review, *Materials and Manufacturing Processes*, 9, 1031-1046 (1994)
- W. Tong and G. Ravichandran, Rise Time in Shock Consolidation of Materials, *Applied Physics Letters*, 65, 2783-85 (1994)
- W. Tong and G. Ravichandran, Effective Elastic Moduli and Characterization of a Particulate-Reinforced Metal Matrix Composite with Damaged Particles, *Composites Science and Technology*, 52, 247-252 (1994)

- W. Chen, G. Subhash and G. Ravichandran, Evaluation of Ceramic Specimen Geometries Used in a Split Hopkinson Pressure Bar, *Dymat Journal*, 1, 193-210 (1994)
- J. J. Mason, A. J. Rosakis and G. Ravichandran, Full Field Measurements of the Dynamic Deformation Field Around a Growing Adiabatic Shear Band at the Tip of a Dynamically Loaded Notch, *Journal of the Mechanics and Physics of Solids*, 42, 1679-1698 (1994)
- M. E. Walter and G. Ravichandran, An Experimental Investigation of Damage Evolution in a Ceramic Matrix Composite, *Journal of Engineering Materials and Technology*, 117, 101-108 (1995)
- W. Tong, G. Ravichandran, T. A. Christman and T. Vreeland, Processing SiC-Particulate Reinforced Titanium-based Metal Matrix Composites by Shock Wave Consolidation, *Acta Metallurgica et Materialia*, 43, 235-250 (1995)
- G. Ravichandran and C. T. Liu, Modeling Constitutive Behavior of Particulate Composites Undergoing Damage, *International Journal of Solids and Structures*, 32, 979-990 (1995)
- G. Ravichandran and G. Subhash, A Micromechanical Model for High-Strain-Rate Behavior of Ceramics, *International Journal of Solids and Structures*, 32, 2627-2646 (1995)
- W. Tong and G. Ravichandran, Inertial Effects on Void Growth in Viscoplastic Materials, *Journal of Applied Mechanics*, 62, 633-639 (1995)
- D. J. Benson, W. Tong and G. Ravichandran, Particle Level Modeling of Dynamic Consolidation of Ti-SiC Powders, *Modeling and Simulation in Materials Science and Engineering*, 3, 771-796 (1995)
- W. Chen and G. Ravichandran, An Experimental Technique for Imposing Dynamic Multiaxial-Compression with Mechanical Confinement, *Experimental Mechanics*, 36, 155-158 (1996)
- W. Chen and G. Ravichandran, Static and Dynamic Compressive Behavior of Aluminum Nitride under Moderate Confinement, *Journal of American Ceramic Society*, 79, 579-584 (1996)
- M. Zhou, A. J. Rosakis and G. Ravichandran, Dynamically Growing Shear Bands in Impact Loaded Prenotched Plates, Part I: Experimental Investigation, *Journal of the Mechanics and Physics of Solids*, 44, 981-1006 (1996)
- M. Zhou, G. Ravichandran and A. J. Rosakis, Dynamically Growing Shear Bands in Impact Loaded Prenotched Plates, Part II: Numerical Simulation, *Journal of the Mechanics and Physics of Solids*, 44, 1007-1032 (1996)
- M. E. Walter and G. Ravichandran, Experimental Simulation of Matrix Cracking and Debonding in a Model Brittle Matrix Composite, *Experimental Mechanics*, 37, 130-135 (1997)
- M. E. Walter, G. Ravichandran and M. Ortiz, Computational Modeling of Damage Evolution in Fiber Reinforced Ceramic Matrix Composites, *Computational Mechanics*, 20, 192-198 (1997)
- W. Chen and G. Ravichandran, Dynamic Compressive Failure of a Glass Ceramic under Lateral Confinement, *Journal of the Mechanics and Physics of Solids*, 45, 1303-1328 (1997)
- T. W. Wright and G. Ravichandran, Canonical Aspects of Adiabatic Shear Bands, *International Journal of Plasticity*, 13, 309-325 (1997)
- G. Subhash, G. Ravichandran and B. J. Pletka, Plastic Deformation of Hafnium under Uniaxial Compression, *Metallurgical Transactions A*, 28, 1479-1487 (1997)
- G. Subhash and G. Ravichandran, Mechanical Behavior of a Hot-Pressed Aluminum Nitride Under Uniaxial Compression, *Journal of Materials Science*, 33, 1933-1939 (1998)
- G. Ravichandran and C. T. Liu, Crack-Tip Shielding in Particulate Composites Undergoing Damage, *Engineering Fracture Mechanics*, 59, 713-723 (1998)

- M. Zhou, A. J. Rosakis and G. Ravichandran, On the Growth of Shear Bands and Failure-Mode Transition in Prenotched Plates-A Comparison of Singly and Doubly Notched Specimens, *International Journal of Plasticity*, 14, 435-451 (1998)
- T. Dummer, J. C. Lasalvia, G. Ravichandran and M. A. Meyers, Effect of Strain Rate on Plastic Flow and Failure in Polycrystalline Tungsten, *Acta Materialia*, 46, 6267-6290 (1998)
- K. Bhattacharya, M. Ortiz and G. Ravichandran, Energy-Based Model of Compressive Splitting in Heterogeneous Brittle Solids, *Journal of the Mechanics and Physics of Solids*, 46, 2171-2181 (1998)
- P. R. Guduru, R. P. Singh, G. Ravichandran and A. J. Rosakis, Dynamic Crack Initiation in Ductile Steels, *Journal of the Mechanics and Physics of Solids*, 46, 1997-2016 (1998)
- D. M. Owen, S. Zhuang, A. J. Rosakis and G. Ravichandran, Experimental Determination of Dynamic Crack Initiation and Propagation Fracture Toughness in Thin Aluminum Sheets, *International Journal of Fracture*, 90, 153-174 (1998)
- Y. J. Lee, G. Subhash and G. Ravichandran, Constitutive Modeling of Textured Body Centered Cubic (BCC) Polycrystals, *International Journal of Plasticity*, 15, 625-645 (1999)
- J. Hodowany, G. Ravichandran, A. J. Rosakis and P. Rosakis, Partition of Plastic Work into Heat and Stored Energy in Metals, *Experimental Mechanics*, 40, 113-123 (2000)
- P. Rosakis, A. J. Rosakis, G. Ravichandran and J. Hodowany, A Thermodynamic Internal Variable Model for the Partition of Plastic Work into Heat and Stored Energy in Metals, *Journal of the Mechanics and Physics of Solids*, 48, 581-607 (2000)
- A. J. Rosakis and G. Ravichandran, Dynamic Failure Mechanics, *International Journal of Solids and Structures*, 37, 331-348 (2000)
- W. Chen and G. Ravichandran, Failure Mode Transition in Ceramics under Dynamic Loading, *International Journal of Fracture*, 101, 141-159 (2000)
- A. Venkert, P. R. Guduru and G. Ravichandran, Mechanisms of Dynamic Failure in High Strength Ductile Steels, *Metallurgical and Materials Transactions A*, 31, 1147-1154 (2000)
- E. Burcu, G. Ravichandran and K. Bhattacharya, Large Strain Electrostrictive Actuation in Barium Titanate, *Applied Physics Letters*, 77, 1698-1700 (2000)
- A. T. Zehnder, P. R. Guduru, A. J. Rosakis and G. Ravichandran, Million Frames per Second Infrared Imaging System, *Review of Scientific Instruments*, 71, 3762-3768 (2000)
- K. Oguni, C. Y. Tan and G. Ravichandran, Failure Mode Transition in Unidirectional E-Glass/Vinylester Composites under Multiaxial Compression, *Journal of Composite Materials*, 34, 2081-2097 (2000)
- K. Oguni and G. Ravichandran, An Energy-Based Model of Longitudinal Splitting in Unidirectional Fiber Reinforced Composites, *Journal of Applied Mechanics*, 67, 437-443 (2000)
- K. Oguni and G. Ravichandran, Dynamic Compressive Behavior of Unidirectional E-Glass/Vinylester Composites, *Journal of Materials Science*, 36, 831-838 (2001)
- K. Oguni and G. Ravichandran, A Micromechanical Model for Failure of Unidirectional Fiber Reinforced Composites, *International Journal of Solids and Structures*, 38, 7215-7233 (2001)
- R. Vaidyanathan, M. Dao, G. Ravichandran and S. Suresh, Study of mechanical deformation in bulk metallic glass through instrumented indentation, *Acta Materialia*, 49, 3781-3789 (2001)
- P. R. Guduru, G. Ravichandran and A. J. Rosakis, Observations of transient high temperature vertical microstructures in solids during adiabatic shear banding, *Physical Review E*, 6403, 36128 (2001)
- P. R. Guduru, A. T. Zehnder, A. J. Rosakis and G. Ravichandran, Dynamic full field measurements of crack tip temperatures, *Engineering Fracture Mechanics*, 68, 1535-1556 (2001)

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