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## PUBLICATIONS

### MONOGRAPH, BOOK CHAPTERS, INVITED PUBLICATIONS, AND LECTURE NOTES:

- 1 Rosakis, A.J., Rosakis, P.J.  
"Elements of Dislocation Theory and Plasticity," notes based on Graduate Level Courses in Plasticity (Caltech Ae/AM 223),1986
- 2 Rosakis, A.J.  
"Two Optical Techniques Sensitive to Gradients of Optical Path Difference: The Method of Caustics and the Coherent Gradient Sensor (CGS)," *Experimental Techniques in Fracture* (J. Epstein, Ed.), Chapter 5, Vol. III, pp. 327-426, 1992 (**By Invitation**)
- 3 Zehnder, A.T., Rosakis, A.J.  
"Temperature Rise at the Tip of Dynamically Propagating Cracks: Measurements using High Speed Infrared Detectors," *Experimental Techniques in Fracture* (J. Epstein, Ed.), Chapter 10, Vol. III, pp. 125-170, 1992 (**By Invitation**)
- 4 Liu, C., Rosakis, A.J.  
"Investigation of Transient Effects for Dynamically Initiating and Growing Cracks under Stress Wave Loading Conditions," *Dynamic Fracture Mechanics* (M.H. Aliabadi, Ed.), Chapter 4, Computational Mechanics Publications, 1995 (**Refereed**)
- 5 Rosakis, A.J., Ravichandran, G.  
"Dynamic Failure Mechanics," *Research Trends in Solid Mechanics* (G.J. Dvorak, Ed.), AIP Press, *International Journal of Solids and Structures*, **37**, 331-348, [GALCIT-SM Report 98-15] 2000 (**Refereed**)
- 6 Rosakis, A.J.  
"Intersonic Shear Cracks and Fault Ruptures," *Advances in Physics*, **51**, 1189-1257, 2002 (**By Invitation**)
- 7 Rosakis, A.J., Huang, Y.  
"Intersonic Debonding," *Comprehensive Structural Integrity Handbook, Fracture of Materials from Nano to Macro, Volume Chap8: Interfacial and Nanoscale Failure* (W. Gerberich and W. Yang, Vol. Eds.), Elsevier Ltd., pp. 137-179, 2003 (**By Invitation**)
- 8 Rosakis, A.J., Owen, D.  
"Dynamic Constitutive Behavior and Dynamic Fracture of Dionysus-Pentelicon Marble" *Mechanics of Stones: Experimental Techniques and Modeling* (Y. Vardoulakis and G. Exadaktylos, Eds.), Kluwer Academic Publishers, 2005 (**By Invitation**)
- 9 Rosakis, A. J., Lykotrafitis, G., Xia, K., Kanamori, H.  
"Dynamic Shear Rupture in Frictional Interfaces: Speeds, Directionality and Modes", *Treatise in Geophysics*, (G. Schubert, Editor-in-Chief) **Vol. 4 - Earthquake Seismology**, (H. Kanamori, Volume Editor) Elsevier, 2007 (**By Invitation**)
- 10 Rosakis, A.J., Lambros, J.  
"Experimental Dynamic Failure Mechanics," Cambridge University Press, Cambridge Monographs on Mechanics. (**Under Contract**)
- 11 Mello, M., Bhat, H.B., Rosakis, A. J., Kanamori, H.,  
"Identifying the unique ground motion signatures of supershear earthquakes: Theory and experiments", *Tectonophysics*, 2010 Special Edition on Supershear Ruptures, Vol. 493, Issue 3-4, pp. 297-326 (S. Das and M. Bouchon, Editors) (**By Invitation**)
- 12 Biegel, R. L., Bhat, H. S., Sammis, C. G., Rosakis, A. J.  
"The Effect of Asymmetric Damage on Dynamic Shear Rupture Propagation I: No Mismatch in Bulk Elasticity", *Tectonophysics*, 2010 Special Edition on Supershear Ruptures, Vol. 493, Issue 3-4, pp. 254-262 (**By Invitation**)
- 13 Bhat, H. S., Biegel, R. L., Rosakis, A. J Sammis, C. G.  
"The Effect of Asymmetric Damage on Dynamic Shear Rupture Propagation II: With Mismatch in Bulk Elasticity", *Tectonophysics*, 2010 Special Edition on Supershear Ruptures, Vol. 493, Issue 3-4pp. 263-271 (**By Invitation**)

### PUBLICATIONS IN REFEREED JOURNALS:

**1979-1985**

- 1 Rosakis, A.J.  
"Determination of Intensity Factors at an Arched Crack Tip by the Method of Caustics," *Strain*, **15**, 79-87, 1979
- 2 Rosakis, A.J.  
"Analysis of the Optical Method of Caustics for Dynamic Crack Propagation," *Engineering Fracture Mechanics*, **13**, 331-347, (First published as a Brown Report ONR 79-1, March 1979.)
- 3 Rosakis, A.J.  
"On the Uniqueness of Representation of the Stress Field of Plane Polygonal Dislocation Loops," *Scripta Metallurgica*, **14**, 1261-1265, (First published as a Brown Material Research Laboratory Report prepared for the National Science Foundation, NSF CME 1979-23742/1, August 1980.)

- 4 Rosakis, A.J. and Freund, L.B.  
 “The Effect of Crack-Tip Plasticity on the Determination of Dynamic Stress-Intensity Factors by the Optical Method of Caustics,”  
*Journal of Applied Mechanics*, **48**, 302-308, 1981. (First published as a Brown Report ONR N00014-0051/5, September 1980.)
- 5 Freund, L.B., Duffy, J. and Rosakis, A.J.  
 “Dynamic Fracture Initiation in Metals and Preliminary Results on the Method of Caustics for Crack Propagation Measurements,”  
 ASME Paper No. 81-PVP-15, 1-7, 1981
- 6 Rosakis, A.J. and Freund, L.B.  
 “Optical Measurement of the Plastic Strain Concentration at a Crack Tip in a Ductile Steel Plate,” *Journal of Engineering Materials  
 and Technology*, **104**, 115-120, 1982
- 7 Rosakis, A.J., Ma, C.C. and Freund, L.B.  
 “Analysis of the Optical Shadow Spot Method for a Tensile Crack in a Power-Law Hardening Material,” *Journal of Applied  
 Mechanics*, **50**, 777-782, 1983
- 8 Rosakis, A.J., Duffy, J. and Freund, L.B.  
 “The Determination of Dynamic Fracture Toughness of AISI 4340 Steel by the Shadow Spot Method,” *Journal of the Mechanics  
 and Physics of Solids*, **32**, 443-460, 1984
- 9 Rosakis, A.J., Zehnder, A.T.  
 “On the Method of Caustics: An Exact Analysis Based on Geometrical Optics,” *Journal of Elasticity*, **15**, 347-367, [GALCIT-SM  
 Report 84-1], 1985
- 10 Rosakis, A.J. and Zehnder, A.T.  
 “On the Dynamic Fracture of Structural Metals,” *International Journal of Fracture*, Special Issue on Dynamic Fracture (M.L.  
 Williams & W.G. Knauss, Eds.), Martinus Nijhoff Publishers, **27**, 169-186, 1985

#### 1986 - 1990

- 11 Rosakis, A.J. and Ravi-Chandar, K.  
 “On Crack-Tip Stress State: An Experimental Evaluation of Three-Dimensional Effects,” *International Journal of Solids and  
 Structures*, **22**, 121-134, [GALCIT-SM Report 84-2], 1986
- 12 Zehnder, A.T. and Rosakis, A.J.  
 “A Note on the Measurement of K and J under Small Scale Yielding Conditions Using the Method of Caustics,” *International  
 Journal of Fracture*, **30**, R43-R48, [GALCIT-SM Report 85-18], 1986
- 13 Knowles, J.K. and Rosakis, A.J.  
 “On the Scale of the Nonlinear Effect in a Crack Problem,” *Journal of Applied Mechanics*, **53**, 545-549, [GALCIT-SM Report 85-  
 28], 1986
- 14 Benitez, F.G. and Rosakis, A.J.  
 “Three-Dimensional Elastostatics of a Layer and a Layered Medium,” *Journal of Elasticity*, **18**, 3-50, [GALCIT-SM Report 85-21],  
 1986
- 15 Narasimhan, R. and Rosakis, A.J.  
 “Reexamination of Jumps Across Quasi-Statically Propagating Surfaces Under Generalized Plane Stress in Anisotropically  
 Hardening Elastic-Plastic Solids,” *Journal of Applied Mechanics*, **54**, 519-524, [GALCIT-SM Report 86-3], 1987
- 16 Narasimhan, R., Rosakis, A.J. and Hall, J.F.  
 “A Finite Element Study of Stable Crack Growth Under Plane Stress Conditions: Part I- Elastic-Perfectly Plastic Solids,” *Journal of  
 Applied Mechanics*, **54**, 838-845, [GALCIT-SM Report 86-22], 1987
- 17 Narasimhan, R., Rosakis, A.J. and Hall, J.F.  
 “A Finite Element Study of Stable Crack Growth Under Plane Stress Conditions: Part II- Influence of Hardening,” *Journal of  
 Applied Mechanics*, **54**, 846-853 [GALCIT-SM Report 86-23], 1987
- 18 Benitez, F.G. and Rosakis, A.J.  
 “A Point Load in the Interior of a Thick Plate,” *Computers & Structures*, **29**, 69-87, 1988
- 19 Rosakis P.J. and Rosakis A.J.  
 “The Screw Dislocation Problem in Incompressible Finite Elastostatics: A Discussion of Nonlinear Effects,” *Journal of Elasticity*,  
**20**, 3-40, [GALCIT-SM Report 86-5], 1988
- 20 Narasimhan, R. and Rosakis, A.J.  
 “A Finite Element Analysis of Small-Scale Yielding Near a Stationary Crack Under Plane Stress”, *Journal of the Mechanics and  
 Physics of Solids*, **36**, 77-117 [GALCIT-SM Report 86-21], 1988
- 21 Benitez, F.G. and Rosakis, A.J.  
 “Force at a Point in the Interior of a Three-Dimensional Elastic Layer,” *Quarterly Journal of Mechanics and Applied Mathematics*,  
**41**, 83-95, 1988
- 22 Rosakis, A.J., Zehnder, A.T., Narasimhan, R.  
 “Caustics by Reflection and their Application to Elastic-Plastic and Dynamic Fracture Mechanics,” *Optical Engineering*, **27**, 596-  
 610, 1988
- 23 Zehnder, A.T., Rosakis, A.J. and Narasimhan, R.  
 “Measurement of the J-Integral with Caustics: An Experimental and Numerical Investigation,” *Nonlinear Fracture Mechanics:  
 Volume 1-Time Dependent Fracture*, ASTM-STP 995, (A. Saxena, J.D. Landes and J.L. Bassani, Eds.), American Society for Testing  
 and Materials, Philadelphia, pp. 318-339, [GALCIT-SM Report 86-8], 1989

- 24 Narasimhan, R. and Rosakis, A.J.  
 “Three-Dimensional Effects near a Crack Tip in a Ductile Three-Point Bend Specimen: Part I-A Numerical Investigation,” *Journal of Applied Mechanics*, **57**, 607-617, [GALCIT-SM Report 88-6], 1990
- 25 Zehnder, A.T. and Rosakis, A.J.  
 “Three-Dimensional Effects near a Crack Tip in Ductile Three-Point Bend Specimen: Part II-An Experimental Investigation Using Interferometry and Caustics,” *Journal of Applied Mechanics*, **57**, 618-626, [GALCIT-SM Report 88-7], 1990
- 26 Zehnder, A.T., Rosakis, A.J. and Krishnaswamy, S.  
 “Dynamic Measurement of the J Integral in Ductile Metals: Comparison of Experimental and Numerical Techniques,” *International Journal of Fracture*, Special Issue on Non-linear Fracture, Time Dependence (W.G. Knauss and A.J. Rosakis, Eds.), **42**, 209-230, Also, Proceedings of the IUTAM Symposium on Recent Advances on Non-linear Fracture Mechanics, California Institute of Technology, March 14-16, 1988 - 1990
- 27 Zehnder, A.T. and Rosakis, A.J.  
 “Dynamic Fracture Initiation and Propagation in 4340 Steel Under Impact Loading,” *International Journal of Fracture*, **43**, 271-285, [GALCIT-SM Report 86-6], 1990
- 28 Deng, X. and Rosakis, A.J.  
 “Negative Plastic Flow and its Prevention in Elasto-Plastic Finite Element Computation,” *Finite Elements in Analysis and Design*, **7**, 181-191, [GALCIT-SM Report 90-10], 1990
- 29 Rosakis, A.J., Krishnaswamy, S. and Tippur, H.V.  
 “On the Application of the Optical Method of Caustics to the Investigation of Transient Elastodynamic Crack Problems: Limitations of the Classical Interpretation,” *International Journal of Optics and Lasers in Engineering*, Special Issue on the Optical Method of Caustics (A.J. Rosakis, Guest Editor), **13**, 183-210, [GALCIT-SM Report 90-2], 1990
- 30 Rosakis, A.J. and Zehnder, A.T.  
 “Experimental Measurement of the Temperature Rise Generated During Dynamic Crack Growth in Metals,” *Applied Mechanics Review*, **43**, Part 2, S260-S265, 1990

#### 1991 - 1995

- 31 Krishnaswamy, S. and Rosakis, A.J.  
 “On the Extent of Dominance of Asymptotic Elastodynamic Crack-Tip Fields: Part I- An Experimental Study Using Bifocal Caustics,” *Journal of Applied Mechanics*, **58**, 87-94, [GALCIT-SM Report 88-21], 1991
- 32 Krishnaswamy, S., Rosakis, A.J. and Ravichandran, G.  
 “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, [GALCIT-SM Report 88-22], 1991
- 33 Zehnder, A.T. and Rosakis, A.J.  
 “On the Temperature Distribution at the Vicinity of Dynamically Propagating Cracks in 4340 Steel,” *Journal of the Mechanics and Physics of Solids*, **39**, 385-415, [GALCIT-SM 89-2], 1991
- 34 Tippur, H.V., Krishnaswamy, S. and Rosakis, A.J.  
 “A Coherent Gradient Sensor for Crack Tip Deformation Measurements: Analysis and Experimental Results,” *International Journal of Fracture*, **48**, 193-204, [GALCIT-SM Report 89-3], 1991
- 35 Deng, X. and Rosakis, A.J.  
 “Dynamic Crack Propagation in Elastic-Perfectly Plastic Solids Under Plane Stress Conditions,” *Journal of the Mechanics and Physics of Solids*, **39**, 683-722, [GALCIT-SM Report 90-11], 1991
- 36 Tippur, H. V., Krishnaswamy, S. and Rosakis, A. J.  
 “Optical Mapping of Crack Tip Deformations Using the Methods of Transmission and Reflection Coherent Gradient Sensing: A Study of Crack Tip K-Dominance,” *International Journal of Fracture*, **52**, 91-117, [GALCIT-SM Report 89-11], 1991
- 37 Tippur, H.V. and Rosakis, A.J.  
 “Quasi-Static and Dynamic Crack Growth Along Bimaterial Interfaces: A Note on Crack-Tip Field Measurements Using Coherent Gradient Sensing,” *Journal of Experimental Mechanics*, **31**, 243-251, [GALCIT-SM Report 90-18], 1991
- 38 Rosakis, A.J. and Liu, C., Freund, L.B.  
 “A Note on the Asymptotic Stress Field of a Non-Uniformly Propagating Dynamic Crack,” *International Journal of Fracture*, **50**, R39 - R45, 1991
- 39 Narasimhan, R., Rosakis, A.J., Moran, B.  
 “A Three-Dimensional Numerical Investigation of Fracture Initiation by Ductile Failure Mechanisms in a 4340 Steel,” *International Journal of Fracture*, **56**, 1-24, [GALCIT-SM Report 89-5], 1992
- 40 Zehnder, A.T. and Rosakis, A.J.  
 “A Note on the Use of High-Speed Infrared Detectors for the Measurement of Temperature Fields at the Vicinity of Dynamically Growing Cracks in 4340 Steel,” *Journal of Applied Mechanics*, **59**, 450-452, 1992
- 41 Krishnaswamy, S., Tippur, H. V. and Rosakis, A. J.  
 “Measurement of Transient Crack-Tip Deformation Fields Using the Method of Coherent Gradient Sensing,” *Journal of the Mechanics and Physics of Solids*, **40**, 339-372 [GALCIT-SM Report 90-1], 1992
- 42 Mason, J.J., Lambros, J. and Rosakis, A.J.  
 “The Use of a Coherent Gradient Sensor in Dynamic Mixed-Mode Fracture Mechanics Experiments,” *Journal of the Mechanics and Physics of Solids*, **40**, 641-661 [GALCIT-SM Report 90-21], 1992

- 43 Freund, L.B and Rosakis, A.J.  
 "The Structure of the Near-Tip Field During Transient Elastodynamic Crack Growth," *Journal of the Mechanics and Physics of Solids*, **40**, 699-719, 1992
- 44 Deng, X. and Rosakis, A.J.  
 "A Finite Element Investigation of Quasi-Static and Dynamic Asymptotic Crack-Tip Fields in Hardening Elastic-Plastic Solids Under Plane Stress; Part I: Crack Growth in Linear Hardening Materials," *International Journal of Fracture*, **57**, 291-308, [GALCIT-SM Report 90-12], 1992
- 45 Deng, X. and Rosakis, A.J.  
 "A Finite Element Investigation of Quasi-Static and Dynamic Asymptotic Crack-Tip Fields in Hardening Elastic-Plastic Solids Under Plane Stress; Part II: Crack Growth in Power-Law Hardening Materials," *International Journal of Fracture*, **58**, 137-156, [GALCIT-SM Report 90-13], 1992
- 46 Bruck, H.A. and Rosakis, A.J.  
 "On the Sensitivity of Coherent Gradient Sensing: Part I-A Theoretical Investigation of Accuracy in Fracture Mechanics Applications," *Optics and Lasers in Engineering*, **17**, 83-101, [GALCIT-SM Report 91-6], 1992
- 47 Liu, C., Rosakis, A.J. and Freund, L.B.  
 "The Interpretation of Optical Caustics in the Presence of Dynamic Non-Uniform Crack-Tip Motion Histories: A Study Based on a Higher Order Transient Crack-Tip Expansion," *International Journal of Solids and Structures*, **30**, 875-897, 1993
- 48 Bruck, H.A. and Rosakis, A.J.  
 "On the Sensitivity of Coherent Gradient Sensing: Part II-An Experimental Investigation of Accuracy in Fracture Mechanics Applications," *Optics and Lasers in Engineering*, **18**, 25-51, [GALCIT-SM Report 91-8], 1993
- 49 Benitez, F.G., Lu, L. and Rosakis, A.J.  
 "A Boundary Element Formulation Based on the Three-Dimensional Elastostatic Fundamental Solution for the Infinite Layer: Part I-Theoretical and Numerical Development," *International Journal for Numerical Methods in Engineering*, **36**, 3097-3130, 1993
- 50 Lu, L., Benitez, F.G. and Rosakis, A.J.  
 "A Boundary Element Formulation Based on the Three-Dimensional Elastostatic Fundamental Solution for the Infinite Layer: Part II - Three-Dimensional Examples," *International Journal for Numerical Methods in Engineering*, **36**, 3131-3159, 1993
- 51 Rosakis, A.J.  
 "Two Optical Techniques Sensitive to Gradients of Optical Path Difference: The Method of Caustics and the Coherent Gradient Sensor (CGS)," *Experimental Techniques in Fracture* (J. Epstein, Ed.), Chapter 10, pp. 327-425, 1993
- 52 Zehnder, A.T., Rosakis, A.J.  
 "Temperature Rise at the Tip of Dynamically Propagating Cracks: Measurements Using High-Speed Infrared Detectors," *Experimental Techniques in Fracture* (J. Epstein, Ed.), Chapter 5, pp. 125-169, 1993
- 53 Rosakis, A.J., Mason, J.J. and Ravichandran, G.  
 "The Conversion of Plastic Work to Heat Around a Dynamically Propagating Crack in Metals," *Journal of the Mechanical Behavior of Materials* (B.-Z. Weiss and E.C. Aifantis, Eds.), Proceedings of the International Conference on the Mechanics, Physics and Structure of Materials: A Celebration of Aristotle's 23 Centuries, Part 4: Mechanical Aspects, II, Vol. 4, No. 4, 375-385, 1993
- 54 Lee, Y.J. and Rosakis, A.J.  
 "Interfacial Cracks in Plates: A Three-Dimensional Numerical Investigation," *International Journal of Solids and Structures*, **30**, 3139-3158, 1993
- 55 Mason, J.J., and Rosakis, A.J.  
 "The Effects of Hyperbolic Heat Conduction Around a Dynamically Propagating Crack Tip," *Mech. of Materials*, **15**, 263-278, 1993
- 56 Rosakis, A.J.  
 "Application of Coherent Gradient Sensing (CGS) to the Investigation of Dynamic Fracture Problems," Special Issue of *Optics and Lasers in Engineering* devoted to Photomechanics Applied to Dynamic Response of Materials (A. Shukla, Guest Ed.), **19**, 3-41, 1993
- 57 Liu, C., Lambros, J. and Rosakis, A.J.  
 "Highly Transient Elastodynamic Crack Growth in a Bimaterial Interface: Higher Order Asymptotic Analysis and Optical Experiments," *Journal of the Mechanics and Physics of Solids*, **41**, 1887-1954, 1993
- 58 Mason, J.J. and Rosakis, A.J.  
 "On the Dependence of the Dynamic Crack Tip Temperature Fields in Metals Upon Crack Tip Velocity and Material Parameters," *Mechanics of Materials*, **16**, 337-350, 1993
- 59 Deng, X., Rosakis, A.J. and Krishnaswamy, S.  
 "Dynamic Crack Propagation in Elastic-Plastic Solids Under Non-K-Dominance Conditions," *European Journal of Mechanics and Solids*, **13**, 327-350, [GALCIT-SM Report 90-14], 1994
- 60 Mason, J.J., Rosakis, A.J. and Ravichandran, G.  
 "On the Strain and Strain Rate Dependence of the Fraction 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
- 61 Bruck, H.A., Christman, T., Rosakis, A.J. and Johnson, W.L.  
 "Quasi-Static Constitutive Behavior of  $Zr_{41.25}Ti_{13.75}Ni_{10}Cu_{12.5}Be_{22.5}$  Bulk Amorphous Alloys," *Scripta Metallurgica et Materialia*, **30**, 429-434, 1994
- 62 Liu, C. and Rosakis, A.J.  
 "On the Higher Order Asymptotic Analysis of a Non-Uniformly Propagating Dynamic Crack Along an Arbitrary Path," *Journal of Elasticity*, **35**, 27-60, 1994
- 63 Liu, C. and Rosakis, A.J.  
 "Investigation of Transient Effects for Dynamically Initiating and Growing Cracks Under Stress Wave Loading Conditions," *Dynamic Fracture Mechanics* (M.H. Aliabadi, Ed.), Computational Mechanics Publication, Southampton, UK; Boston, USA, Chapter 4, 1994

- 64 Mason, J.J., Rosakis, A.J. and Ravichandran, G.  
 “Full Field Measurements of the Dynamic Deformation Field Around a Growing Adiabatic Shear Band at the Tip of a Dynamically Loaded Crack or Notch,” *Journal of the Mechanics and Physics of Solids*, **42**, 1679-1697, 1994
- 65 Lambros, J. and Rosakis, A.J.  
 “Dynamic Decohesion of Bimaterials: Experimental Observations and Failure Criteria,” *International Journal of Solids and Structures*, Special Volume devoted to Dynamic Failure Mechanics of Modern Materials (A.J. Rosakis, A. Shukla and Y.D.S. Rajapakse, Eds.), **32**, 2677-2702, 1995
- 66 Lambros, J. and Rosakis, A.J.  
 “Development of a Dynamic Decohesion Criterion for Subsonic Fracture of the Interface Between Two Dissimilar Materials,” *Proceedings of the Royal Society of London*, **451**, 711-736, 1995
- 67 Lambros, J. and Rosakis, A.J.  
 “Shear Dominated Transonic Interfacial Crack Growth in a Bimaterial-I. Experimental Observations,” *Journal of the Mechanics and Physics of Solids*, **43**, 169-188, 1995
- 68 Liu, C., Huang, Y. and Rosakis, A.J.  
 “Shear Dominated Transonic Interfacial Crack Growth in a Bimaterial-II. Asymptotic Fields and Favorable Velocity Regimes,” *Journal of the Mechanics and Physics of Solids*, **43**, 189-206, 1995

#### 1996 - 2000

- 69 Lee, Y.J., Lambros, J. and Rosakis, A.J.  
 “Analysis of Coherent Gradient Sensing (CGS) by Fourier Optics,” *Optics and Lasers in Engineering*, **25**, 25-53, 1996
- 70 Li, W, Deng, X. and Rosakis, A.J.  
 “Determination of Temperature Field Around a Rapidly Moving Crack-Tip in an Elastic-Plastic Solid,” *International Journal of Heat Mass Transfer*, **39**, 677-690, 1996
- 71 Bruck, H.A., Rosakis, A.J. and Johnson, W.L.  
 “The Dynamic Compressive Behavior of Beryllium Bearing Bulk Metallic Glasses,” *J. of Materials Research*, **11**, 503-511, 1996
- 72 Zhou, M., Rosakis, A.J. and Ravichandran, G.  
 “Dynamically Propagating Shear Bands in Impact-Loaded Prenotched Plates-I. Experimental Investigations of Temperature Signatures and Propagation Speed,” *Journal of the Mechanics and Physics of Solids*, **44**, 981-1006, 1996
- 73 Zhou, M., Ravichandran, G. And Rosakis, A.J.  
 “Dynamically Propagating Shear Bands in Impact-Loaded Prenotched Plates-II. Numerical Simulations,” *Journal of the Mechanics and Physics of Solids*, **44**, 1007-1032, 1996
- 74 Huang, Y., Liu, C. and Rosakis, A.J.  
 “Transonic Crack Growth Along a Bimaterial Interface: An Investigation of the Asymptotic Structure of Near-Tip Fields,” *International Journal of Solids and Structures*, **33**, 2625- 2645, 1996
- 75 Lambros, J. and Rosakis, A.J.  
 “Dynamic Crack Initiation and Growth in Thick Unidirectional Graphite/Epoxy Plates,” *Journal of Composites Science and Technology*, **57**, 55-65, 1997
- 76 Singh, R., Lambros, J., Shukla, A. and Rosakis, A.J.  
 “Investigation of the Mechanics of Intersonic Crack Propagation Along a Bimaterial Interface Using Coherent Gradient Sensing and Photoelasticity” *Proceedings of the Royal Society of London A*, **453**, 2649-2667, 1997
- 77 Lambros, J. and Rosakis, A.J.  
 “An Experimental Study of Dynamic Delamination of Thick Fiber Reinforced Polymeric Matrix Composites,” *Journal of Experimental Mechanics*, **37**, 360-366, 1997
- 78 Conner, R.D., Rosakis, A.J., Johnson, W.L. and Owen, D.M  
 “Fracture Toughness Determination for a Beryllium-Bearing Bulk Metallic Glass,” *Scripta Materialia*, **37**,1373-1378, 1997
- 79 Huang, Y., Wang, W., Liu, C. and Rosakis, A.J.  
 “Intersonic Crack Growth in Bimaterial Interfaces: An Investigation of Crack Face Contact,” *Journal of the Mechanics and Physics of Solids*, **46**, 2233-2259, 1998
- 80 Zhou, M., Rosakis, A.J. and Ravichandran, G.  
 “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
- 81 Rosakis, A.J., Singh, R.P., Tsuji, Y., Kolawa, E. and Moore, Jr, N.R.  
 “Full Field Measurements of Curvature Using Coherent Gradient Sensing: Application to Thin Film Characterization,” *Thin Solid Films*, **325**, 42-54, 1998
- 82 Rosakis, A.J., Samudrala, O., Singh, R.P. and Shukla, A.  
 “Intersonic Crack Propagation in Bimaterial Systems,” *Journal of the Mechanics of Physics of Solids*, Special Volume on Dynamic Deformation and Failure Mechanics of Materials (G. Ravichandran, A.J. Rosakis, M. Ortiz, Y.D.S. Rajapakse and K. Iyer, Guest Editors), **46**, 1789-1813, 1998
- 83 Guduru, P.R., Singh, R.P., Ravichandran, G. and Rosakis, A.J.  
 “Dynamic Crack Initiation in Ductile Steels,” *Journal of the Mechanics of Physics of Solids*, Special Volume on Dynamic Deformation and Failure Mechanics of Materials (G. Ravichandran, A.J. Rosakis, M. Ortiz, Y.D.S. Rajapakse and K. Iyer, Guest Editors), **46**, 1997-2016, 1998
- 84 Owen, D.M., Zhuang, S., Rosakis, A.J. and Ravichandran, G.  
 “Experimental Determination of Dynamic Crack Initiation and Propagation Fracture Toughness in Thin Aluminum Sheets,” *International J. of Fracture*, Special Volume on Experimental Dynamic Fracture (W. Knauss, Guest Editor), **90**, 153-174, 1998

- 85 Liu, C., Knauss, W.G. and Rosakis, A.J.  
 “Loading Rates and the Dynamic Initiation Toughness in Brittle Solids,” *International Journal of Fracture*, Special Volume on  
 Experimental Dynamic Fracture (W.G. Knauss, Guest Editor), **90**, 103-118, 1998
- 86 Kavaturu, M., Shukla, A. and Rosakis, A.J.  
 “Interfacial Crack Propagation Along Interfaces: Experimental Observations and Analysis,” *Journal of Experimental Mechanics*,  
**38**, 218-225, 1998
- 87 Wang, W., Huang, Y., Rosakis, A.J. and Liu, C.  
 “Effect of Elastic Mismatch in Interfacial Crack Propagation Along a Bimaterial Interface,” *Engineering Fracture Mechanics*,  
**61**, 471-485, 1998
- 88 Liu, C., Rosakis, A.J., Ellis, R.W. and Stout, M.G.  
 “A Study of the Fracture Behavior of Unidirectional Fiber-Reinforced Composites using Coherent Gradient Sensing (CGS)  
 Interferometry,” *International Journal of Fracture*, **90**, 355-382, 1998
- 89 Rosakis, A.J., Samudrala, O. and Coker, D.  
 “Cracks Faster than Shear Wave Speed”, *Science*, **284**, 1337-1340, [GALCIT-SM Report 98-17], 1999
- 90 Gao, H., Huang, Y., Gumbsch, P. and Rosakis, A.J.  
 “On Radiation-Free Transonic Motion of Cracks and Dislocations,” *J. of the Mechanics and Physics of Solids*, **47**, 1941-1961,  
 1999
- 91 Huang, Y., Wang, W., Liu, C. and Rosakis, A.J.  
 “Analysis of Interfacial Crack Growth in Unidirectional Fiber-Reinforced Composites,” *Journal of the Mechanics and Physics of  
 Solids*, **47**, 1893-1916, 1999
- 92 Needleman, A. and Rosakis, A.J.  
 “The Effect of Bond Strength and Loading Rate on the Attainment of Interfacial Crack Growth in Interfaces,” *Journal of the  
 Mechanics and Physics of Solids*, **47**, 2411-2449, 1999
- 93 Rosakis, A.J. and Ravichandran, G.  
 “Dynamic Failure Mechanics,” *Research Trends in Solid Mechanics*, (G.J. Dvorak, Guest Ed.), AIP Press, *International Journal  
 of Solids and Structures*, **37**, 331-348 [GALCIT-SM Report 98-15], 2000
- 94 Rosakis, P., Rosakis, A.J., Ravichandran, G. and Hodowany, J.  
 “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, [GALCIT-SM Report 98-8], 2000
- 95 Hodowany, J., Ravichandran, G., Rosakis, A.J. and Rosakis, P.  
 “Partition of Plastic Work into Heat and Stored Energy in Metals,” *Journal of Experimental Mechanics*, **40**, 113-123 [GALCIT-  
 SM Report 98-7], 2000
- 96 Pandolfi, A., Guduru, P.R., Ortiz, M. and Rosakis, A.J.  
 “Three Dimensional Cohesive-Element Analysis and Experiments of Dynamic Fracture in C300 Steel,” *International Journal of  
 Solids and Structures*, **37**, 3733-3760, 2000
- 97 Rosakis, A.J., Samudrala, O. and Coker, D.  
 “Interfacial Shear Crack Growth Along Weak Planes,” *Materials Research Innovations*, **3**, 236-243, 2000
- 98 Rosakis, A.J., Coker, D. and Huang, Y.Y.  
 “Subsonic and Interfacial Dynamic Crack Growth in Unidirectional Composites,” *Society of Manufacturing Engineers*, Technical  
 Paper #EM00-247, 1-10, 2000
- 99 Zehnder, A.T., Guduru, P.R., Rosakis, A.J. and Ravichandran, G.  
 “Million Frames Per Second Infrared Imaging System,” *Review of Scientific Instruments*, **71**, 3762-3768 [GALCIT-SM Report  
 00-8], 2000
- 100 Rosakis, A.J.  
 “Speed Dependence and Crack Addiction,” *Caltech Engineering & Science Magazine*, Volume LXIII, Number 2, 30-38, 2000

#### 2001 - 2005

- 101 Coker, D. and Rosakis, A.J.  
 “Experimental Observations of Interfacial Crack Growth in Asymmetrically Loaded Unidirectional Composites Plates,”  
*Philosophical Magazine A*, **81**, 571-595 [GALCIT-SM Report 98-16], 2001
- 102 Lee, H., Rosakis, A.J. and Freund, L.B.  
 “Full Field Optical Measurement of Curvatures in Ultra-Thin-Film-Substrate Systems in the Range of Geometrically Nonlinear  
 Deformations,” *Journal of Applied Physics*, **89**, 6116-6129 [GALCIT-SM Report 00-10], 2001
- 103 Boyd, D.A., Gallivan, M. A., Tripathi, A.B., Rosakis, A. J., Gowin, D. G. and Atwater, H.A.  
 “Real-time, In Situ Curvature Measurement During Growth of Epitaxial YBCO Films on MgO”, *MRS Symposium Proc. Series*,  
**616**, p 616, 2001
- 104 Guduru, P.R., Rosakis A.J. and Ravichandran, G.  
 “Dynamic Shear Bands: An Investigation Using High Speed Optical and Infrared Diagnostics,” *Mechanics of Materials*, **33**, 371-  
 402 [GALCIT-SM Report 00-11], 2001
- 105 Bouchon, M., Bouin, M.-P., Karabulut, H., Nafi Toksöz, M., Dietrich, M. and Rosakis, A.J.  
 “How Fast is Rupture During an Earthquake? New Insights from the 1999 Turkey Earthquakes,” *Geophysical Research Letters*,  
**28**, 2723-2726, 2001
- 106 Guduru, P.R., Zehnder, A.T., Rosakis, A.J. and Ravichandran, G.  
 “Dynamic Full Field Measurements of Crack Tip Temperatures,” *Engineering Fracture Mechanics*, **68**, 1535-1556, [GALCIT-  
 SM Report 00-12], 2001

- 107 Guduru, P.R., Ravichandran, G., Rosakis A.J.  
 “Observations of Transient High Temperature Vortical Microstructures in Solids During Adiabatic Shear Banding,” *Physical Review E*, **64**, 036128-1-6, [GALCIT-SM Report 00-9], 2001
- 108 Singh, R.P. and Rosakis, A.J.  
 “Determination of the Yield Properties of Thin Films Using Enhanced Coherent Gradient Sensing,” *Journal of Experimental Mechanics*, **41** [GALCIT-SM Report 00-15], 2001
- 109 Li, S., Liu, W.-K., Qian, D., Guduru, P.R. and Rosakis, A.J.  
 “Dynamic Shear Band Propagation and Micro-Structure of Adiabatic Shear Band,” *Computer Methods in Applied Mechanics and Engineering*, **191**, 73-92 [GALCIT-SM Report 00-16], 2001
- 110 Li, S., Liu, W.-K., Rosakis, A.J., Belytschko, T. and Hao, W.  
 “Mesh-Free Galerkin Simulations of Dynamic Shear Band Propagation and Failure Mode Transition,” *International Journal of Solids and Structures*, **39**, 1213-1240, 2002
- 111 Samudrala, O., Huang, Y. and Rosakis, A.J.  
 “Subsonic and Intersonic Mode II Crack Propagation with a Rate-Dependent Cohesive Zone,” *Journal of the Mechanics and Physics of Solids*, **50**, 1231-1268 [GALCIT-SM Report 00-1], 2002
- 112 Rosakis, A.J.  
 “Intersonic Shear Cracks and Fault Ruptures,” *Advances in Physics*, **51**, 1189-1257, 2002
- 113 Xu, L. and Rosakis, A.J.  
 “Impact Failure Characteristics in Sandwich Structures; Part I: Basic Failure Mode Selection,” *International Journal of Solids and Structures*, **39**, 4215-4235 [GALCIT-SM Report 00-6], 2002
- 114 Xu, L. and Rosakis, A.J.  
 “Impact Failure Characteristics in Sandwich Structures; Part II: Effects of Impact Speed and Interfacial Strength,” *International Journal of Solids and Structures*, **39**, 4237-4248 [GALCIT-SM Report 00-7], 2002
- 115 Yu, C., Pandolfi, A., Ortiz, M., Coker, D. and Rosakis, A.J.  
 “Three-Dimensional Modeling of Intersonic Shear-Crack Growth in Asymmetrically Loaded Unidirectional Composite Plates,” *International Journal of Solids and Structures*, **39**, 6135-6157 [GALCIT-SM Report 01-1], 2002
- 116 Bouchon, M. and Rosakis, A.J.  
 “Reply to Comment on ‘How Fast is Rupture During an Earthquake?’ New Insights from the 1999 Turkey Earthquakes,” *Geophysical Research Letters*, **29**, 1243, 2002
- 117 Xu, L.R., Huang, Y.Y. and Rosakis, A.J.  
 “Dynamic Crack Deflection and Penetration at Interfaces in Homogeneous Materials: Experimental Studies and Model Predictions,” *Journal of the Mechanics and Physics of Solids*, **51**, 461-486, 2003. [GALCIT-SM Report 00-5], 2002
- 118 Guo, G., Yang, W., Huang, Y. and Rosakis, A.  
 “Sudden Deceleration or Acceleration of an Intersonic Shear Crack,” *J. of the Mechanics and Physics of Solids*, **51**, 311-331, 2003
- 119 Samudrala, O., Huang, Y. and Rosakis, A.J.  
 “Subsonic and Intersonic Shear Rupture of Weak Planes with a Velocity Weakening Cohesive Zone,” *Journal of Geophysical Research*, **107**, 7-1 – 7-32 [GALCIT-SM Report 00-2], 2003
- 120 Samudrala, O. and Rosakis, A.J.  
 “Effect of Loading and Geometry on the Subsonic/Intersonic Transition of a Bimaterial Interface Crack,” *Engineering Fracture Mechanics*, **70**, 309-337 [GALCIT-SM Report 01-14], 2003
- 121 Coker, D., Rosakis, A.J. and Needleman, A.  
 “Dynamic Crack Growth Along a Polymer Composite-Homalite Interface,” *Journal of the Mechanics and Physics of Solids*, **51**, 425-460, 2003
- 122 Rosakis, A.J.  
 “High Speed Failure Phenomena in Heterogeneous Material Systems at All Length Scales – A Revival!,” *Experimental Techniques “Trends in Experimental Mechanics,”* **27**, 1,12,14, 2003
- 123 Xu, L.R. and Rosakis, A.J.  
 “Real-Time Experimental Investigation of Dynamic Crack Branching Using High-Speed Optical Diagnostics,” *Experimental Techniques, 2001 SEM Student Paper Competition Winner – 2<sup>nd</sup> Place*, **27**, 23-26, 2003
- 124 Rousseau, C.-E. and Rosakis, A.J.  
 “On the Influence of Fault Bends on the Growth of Sub-Rayleigh and Intersonic Dynamic Shear Ruptures,” *Journal of Geophysical Research*, **108**, 2411-2431 [GALCIT-SM Report 03-01], 2003
- 125 Xu, L.R. and Rosakis, A.J.  
 “An Experimental Study of Impact Induced Failure Events in Homogeneous Layered Materials Using Dynamic Photoelasticity and High-Speed Photography,” *Optics and Lasers in Engineering*, **40**, 263- 288 [GALCIT-SM Report 01-2], 2003
- 126 Yu, C., Ortiz, M. and A.J. Rosakis  
 “3-D Modelling of Impact Failure in Sandwich Structures,” *Fracture of Polymers Composites and Adhesives II* (B. Blackman, A. Pavan and J.G. Williams, Eds.), Section 3.4 Composites Modelling, pp. 527-538, 2003
- 127 Park, T.-S., Suresh, S., Rosakis, A.J. and Ryu, J.  
 “Measurement of Full-Field Curvature and Geometrical Instability of Thin Film-Substrate Systems through CGS Interferometry,” *Journal of the Mechanics of Physics of Solids*, Special Volume on Dynamic Failure and Thin Film Mechanics, **51**, Issues 11-12, 2191-2211 (A.J. Rosakis, G. Ravichandran and S. Suresh, Guest Editors), 2003
- 128 Rosakis, A. J., Ravichandran, D. and Suresh, S.  
 “Dedication”, *Journal of the Mechanics and Physics of Solids*, **51**, Issues 11-12., Page v, 2003
- 129 Xia, K., Rosakis, A.J. and Kanamori, H.  
 “Laboratory Earthquakes: The Sub-Rayleigh-to-Supershear Rupture Transition,” *Science*, **303**, Issue 5665,1859-1861, 2004

- 130 Hao, S., Liu, W.K., Klein, P. and Rosakis, A.  
 “Modeling and Simulation of Intersonic Crack Growth,” *International Journal of Solids & Structures*, **41**, Issue 7,1773-1799, 2004
- 131 Anderson, D.D. and Rosakis, A.J.  
 “Comparison of Three Real Time Measurement Techniques for the Measurement of Dynamic Fracture Initiation Toughness in Metals,” *Engineering Fracture Mechanics*, **72**, Issue 4, 535-555, 2005
- 132 Xia, K., Rosakis, A.J. and Kanamori, H.  
 “Supershear and Sub-Rayleigh-Intersonic Transition Observed in Laboratory Earthquake Experiments,” *Experimental Techniques*, **29** (3), 63-66, 2005
- 133 Coker, D. Lykotrafitis, G., Needleman, A. and Rosakis, A.J.  
 “Frictional Sliding modes along an interface between identical elastic plates subject to shear impact loading” *Journal of the Mechanics of Physics of Solids*, **53**, Issue 4, 884-922, 2005
- 134 Xia, K., Rosakis, A.J., Kanamori, H. and Rice, J.R  
 “Laboratory Earthquakes along Inhomogeneous Faults: Directionality and Supershear”, *Science*, Vol. **308**, Issue 5722, 681-684,2005
- 135 Needleman, A., Coker, D. and Rosakis, A. J.  
 “Fast Crack Growth Along Interfaces” *Latin American Journal of Solids and Structures*, **2**, 5-15, 2005
- 136 Huang, Y. and Rosakis, A.J.  
 “Extension of Stoney’s Formula to Non-uniform Temperature Distributions in Thin Film/Substrate Systems. The Case of Radial Symmetry”, *Journal of the Mechanics and Physics of Solids*, **53**, pp 2483-2500, 2005
- 137 Huang, Y., Ngo, D. and Rosakis, A.J.  
 “Non-uniform, Axisymmetric Misfit Strain in Thin Films Bonded on Plate Substrates/Substrate Systems: The Relation between Non-Uniform Film Stresses & System Curvatures”, *Acta Mechanica Sinica*, **21**, pp 362-370, 2005
- 138 Rittel, D. and Rosakis, A.J.  
 “Dynamic Fracture of Beryllium-Bearing Bulk Metallic Glass Systems: A Cross-Technique Comparison” *Engineering Fracture Mechanics*, **72**, 1905-1919, 2005
- 139 L. R. Xu, and Rosakis, A. J.  
 “Impact Damage Visualization of Heterogeneous Two-Layer Materials Subjected to Low-speed Impact,” *International Journal of Damage Mechanics*, Vol. **14**, pp.215-233, 2005
- 2006 - 2010**
- 140 Anderson, D.D. and Rosakis, A. J.  
 “Dynamic Fracture Properties of Titanium Alloys” *Experimental Mechanics*, **46**:3, 1-8, 2006
- 141 Xia, K., Chalivendra, V. B. and Rosakis, A.J.  
 “Spontaneous Mixed-Mode Fracture in Bonded Similar and Dissimilar Materials”, *Experimental Mechanics*, **46**: 163-171, 2006
- 142 Lykotrafitis, G. Rosakis, A. J. and Ravichandran, G.  
 “Particle Velocimetry and Photoelasticity Applied to the Study of Dynamic Sliding Along Frictionally-Held Bimaterial Interfaces: Techniques and Feasibility”, *SEM Experimental Mechanics*, **46**: 205-216, 2006
- 143 Kanamori, H., Xia, K. and Rosakis, A.J.  
 “Laboratory Earthquakes”, *International Journal of Fracture*, Special Edition, **138**: 211-218, 2006
- 144 Brown, M, Park, T-S., Rosakis, A., Ustundag, E., Huang, Y., Tamura, N. and Valek, B.  
 “A Comparison of X-ray Microdiffraction and Coherent Gradient Sensing in Measuring Discontinuous Curvatures in Thin Film – Substrate Systems”, *J. of Applied Mechanics (ASME Transactions)*, **73**, pp 723-729, Special Vol. –W.G. Knauss Symposium, 2006
- 145 Lykotrafitis, G., Rosakis, A. J. and Ravichandran, G.  
 “Self-healing, pulse-like, shear ruptures in the laboratory”, *Science*, Vol. **313**, 1765-1768, 2006
- 146 Lykotrafitis, G. and Rosakis, A. J.  
 “Dynamic sliding of frictionally held bimaterial interfaces subjected to impact shear loading”, *Proceedings of the Royal Society A*, **462**, 2997-3026, 2006
- 147 Lykotrafitis, G. and Rosakis, A.J.  
 “Sliding along frictionally held incoherent interfaces of homogeneous systems subjected to dynamic shear loading: a photoelastic study”, *International Journal of Fracture*, Vol. **140**, 213-233, 2006
- 148 Ngo, D., Feng, X., Huang, Y., Rosakis, A.J. and Brown, M.A.  
 “Thin Film/Substrate Systems Featuring Arbitrary Film Thickness and Misfit Strain Distributions: **Part I**. Analysis for Obtaining Film Stress from Non-Local Curvature Information,” *International Journal of Solids and Structures*, Vol. **44**, 1745-1754, 2006
- 149 Brown, M., Rosakis, A.J., Feng, X., Huang, Y. and Üstündag, E.  
 “Thin film/Substrate Systems Featuring Arbitrary Film Thickness and Misfit Strain Distributions: **Part II**. Experimental Validation of the Non-Local Stress/Curvature Relations,” *International Journal of Solids and Structures*, Vol. **44**, 1755-1767, 2006
- 150 Yang, Q.D., Rosakis, A.J. and Cox, B.N.  
 “Dynamic Fiber Sliding along Debonded, Frictional Interfaces”, *The Proceedings of the Royal Society*, Vol. **462**, 1081-1106, 2006
- 151 Xia, K., Chalivendra, V. B. and Rosakis, A.J.  
 “Observing Self-similar Crack Growth in Experiments”, *Engineering Fracture Mechanics*, Vol. **73**, 2748-2755, 2006
- 152 Ngo, D., Huang, Y., Rosakis, A.J. and Feng, X.  
 “Spatially Non-Uniform, Isotropic Misfit Strain in Thin Films Bonded on Plate Substrates: The Relation between non-uniform film stresses and system curvatures, *Thin Solid Films*, Vol. **515**, 2220-2229, 2006



- 153 Arias, I., Knap, J., Chalivendra, V. B., Hong, S., Ortiz, M. and Rosakis, A.  
"Numerical modeling and experimental validation of dynamic fracture events along weak planes," *Computational Methods in Applied Mechanics and Engineering* Vol. **196**, 3833-3940, 2007
- 154 Feng, X., Huang, Y., Jiang, H., Ngo, D., and Rosakis A.J.  
"The Effect of Thin Film/Substrate Radii on the Stoney Formula for Thin Film/Substrate Subjected to Non-uniform Axisymmetric Misfit Strain and Temperature" *Journal of the Mechanics of Materials and Structures*, Vol **1**, pp 1041-1054, 2006
- 155 Rosakis, A. J., Lykotrafitis, G., Xia, K. and Kanamori, H.  
"Dynamic Shear Rupture in Frictional Interfaces: Speeds, Directionality and Modes", *Treatise in Geophysics*, (G. Schubert, Editor-in-Chief) Vol. **4** - *Earthquake Seismology*, (H. Kanamori, Volume Editor) Elsevier, October 15, 2007
- 156 Lu, X., Lapusta, N., and Rosakis, A.J.  
"Pulse and Crack-like Ruptures in Experiments Mimicking Crustal Earthquakes", *The Proceedings of the National Academy of Sciences USA (PNAS)*, Vol. **104**, No. 48, 18931-18936, 2007. (DOI: 10.1073/pnas.0704268104)
- 157 Biegel, R.L., Sammis, C.G., and Rosakis, A. J  
"Interaction of a Dynamic Rupture on a Fault Plane with Short Frictionless Fault Branches", *Pure and Applied Geophysics*, Vol. **164**, pp 1881-1904, (DOI 10.1007/s00024-007-0251-2), 2007
- 158 Huang, Y, Ngo, D., Feng, X. and Rosakis, A.  
"Anisotropic, Non-uniform Misfit Strain in a Thin Film Bonded on a Plate Substrate", *Interaction and Multiscale Mechanics*, Vol. **1**, No. 1, pp 123-142, 2007
- 159 Huang, Y. and Rosakis, A.J.  
"Extension of Stoney's Formula to Arbitrary Temperature Distributions in Thin Film/Substrate Systems", *Journal of Applied Mechanics*, Vol. **74**, pp 1225-1233, 2007
- 160 Feng, X., Huang, Y. and Rosakis, A. J.  
"On the Stoney Formula for a Thin Film/Substrate System with Non-uniform Substrate Thickness", *Journal of Applied Mechanics- Transactions of the ASME*, Vol. **74**, pp 1276 -1281, 2007
- 161 Feng, X., Huang, Y. and Rosakis, A.J.  
"Multi-layer thin films/substrate system subjected to non-uniform misfit strains", *International Journal of Solids and Structures*, Vol. **45**, pp 3688-3698, 2007
- 162 Chalivendra, V. B., and Rosakis, A.J.  
"Interaction of dynamic mode-I cracks with inclined interfaces", *Engineering Fracture Mechanics*, Vol. **75**, pp 2385-2397, 2008
- 163 Biegel, R., Sammis, C. and Rosakis, A.  
An experimental study of the effect of off-fault damage on the velocity of a slip pulse, *J. Geophys. Res.*, Vol. **113**, 2008
- 164 Feng, X., Huang, Y. and Rosakis, A. J.  
"Stresses in a Multilayer Thin Film/Substrate System Subjected to Nonuniform Temperature", *Journal of Applied Mechanics*, Vol. **75**, 2008
- 165 Mello, M., Hong, S. and Rosakis, A.J.  
"Extension of the Coherent Gradient Sensor (CGS) to the Combined Measurement of In-Plane and Out-of-Plane Displacement Field Gradients", *Experimental Mechanics*, Special Edition, 2008
- 166 Park, T-S., Dao, M., Suresh, S., Rosakis, A.J., Pantuso, D. and Shankar S.  
"Some Practical Issues of Curvature and Thermal Stress in Realistic Multi-level Metal Interconnect Structures" *Journal of Electronic Materials*, Vol. **37**, No. 6. pp 777 – 791, 2008
- 167 Xia, K.W., Rousseau, C. and Rosakis, A.J.  
"Experimental investigations of spontaneous bimaterial interfacial fractures", *Journal of Mechanics of Materials and Structures*, Vol. **29** (3), 173-184, 2008
- 168 Chalivendra, V., Hong, S., Arias, I., Knap, J., Rosakis, A. and Ortiz, M.  
"Experimental validation of large-scale simulations of dynamic fracture along weak planes", *International Journal of Impact Engineering*, Vol. **30**, pp. 888-889, 2009
- 169 Lu, X., Lapusta, N. and Rosakis, A.J.  
"Analysis of supershear transition regimes in rupture experiments: the effect of nucleation conditions and friction parameters", *Geophysical Journal International*, Vol. **177**, pp. 717-732, (DOI: 10.1111/j.1365-246X.2009.04091.x), 2009
- 170 Templeton, E.L., Baudet, A., Bhat, H.S., Dmowska, R., Rice, J. R., Rosakis, A. J, Rousseau, C-E  
"Finite Element Simulations of Dynamic Shear Rupture Experiments and Dynamic Path Selection Along Kinked and Branched Faults", *Journal of Geophysical Research*, Vol. **114**, 2009
- 171 Rousseau, C-E., Rosakis, A. J.  
"Dynamic Path Selection along Branched Faults: Experiments Involving Sub-Rayleigh and Supershear Ruptures", *Journal of Geophysical Research*, Vol. **114**, 2009
- 172 Griffith, W. A., Rosakis, A. J., Pollard, D.D., Ko, Chi Wan  
"Dynamic Rupture Experiments Elucidate tensile crack development during propagating earthquake ruptures", *Geology*, Vol. **37**, No. 9, pp-795-798; (DOI: 10.1130/G20064A), 2009.
- 173 Lu, X., Rosakis, A.J., and Lapusta, N.  
"Rupture Modes in Laboratory Earthquakes: Effect of Fault Prestress and Nucleation Conditions", *Journal of Geophysical Research* Vol. **115**, (B12302, DOI:10.1029/2009JB006833), 2010
- 174 Biegel, R. L., Bhat, H. S., Sammis, C. G., Rosakis, A. J  
"The Effect of Asymmetric Damage on Dynamic Shear Rupture Propagation I: No Mismatch in Bulk Elasticity", *Tectonophysics*, 2010 Special Edition on Supershear Ruptures, Vol. **493**, Issue 3-4, pp. 254-262, 2010
- 175 Bhat, H. S., Biegel, R. L., Rosakis, A. J Sammis, C. G.  
"The Effect of Asymmetric Damage on Dynamic Shear Rupture Propagation II: With Mismatch in Bulk Elasticity", *Tectonophysics*, 2010 Special Edition on Supershear Ruptures, Vol. **493**, Issue 3-4pp. 263-271, 2010

- 176 Lu, X., Lapusta, N., Rosakis, A. J.  
 “Pulse-like and crack-like dynamic shear ruptures on frictional interfaces: experimental evidence, numerical modeling, and implications”, *International Journal of Fracture*, Vol. **163**, 1-2, 27-39, (DOI: 10.1007/s10704-010-9479-40), 2010
- 177 Mello, M., Bhat, H.B., Rosakis, A. J., Kanamori, H.  
 “Identifying the unique ground motion signatures of supershear earthquakes: Theory and experiments”, *Tectonophysics*, 2010 Special Edition on Supershear Ruptures, Vol. **493**, Issue 3-4, pp. 297-326 (S. Das and M. Bouchon, Editors), 2010
- 178 Eliasson, V., Mello, M., Rosakis, A. J., Dimotakis, P. E.  
 “Experimental investigation of converging shocks in water with various confinement materials”, *Shock Waves*, Vol. **20**, pp. 395-408, 2010
- 179 Sammis, C. G., Rosakis A. J and Bhat, H. S.,  
 “Effects of Off-Fault Damage on Earthquake Rupture Propagation: Experimental Studies”, *Pure and Applied Geophysics*, Vol. **166**, pp. 1629-1648, 2010

**2011 - 2016**

- 180 Bhat, H.S., Sammis, C.G., Rosakis, A.J.  
 “The Micromechanics of Westerley Granite at Large Compressive Loads”, *Pure and Applied Geophysics.*, Vol. **168** (12):pp. 1–18 (DOE: 10.1007/s00024-011-0271-9), 2011
- 181 Lamberson, L., Eliasson V., Rosakis, A.J.  
 “In situ Optical Investigations of Hypervelocity Impact Induced Dynamic Fracture”, *Experimental Mechanics*, Special Edition, Dynamic Behavior of Materials, Conference Proceedings of the Society for Experimental Mechanics Series, Vol. **1**, (DOI: 1007/978-1-4419-8228-5), 2011
- 182 Adams, M., Lashgari, B., McKerns, M., Mihaly, J., Ortiz, M., Owahdi, H., Rosakis, A.J., Stalzer, M., Sullivan, T. J.  
 “Rigorous Model-Based Uncertainty Quantification with Application to Terminal Ballistics - Part II. Systems with Uncontrollable Inputs and Large Scatter”, *Journal of the Mechanics and Physics of Solids*, Vol.**60**: pp.1002-1019, 2012
- 183 Bhat, H. S., Rosakis, A. J., Sammis, C. G.  
 “A Micromechanics Based Constitutive Model For Brittle Failure at High Strain Rates”, *Journal of Applied Mechanics*, Vol. **79** (3), 031016, (DOE:10.1115/1.4005897), 2012
- 184 Ngo, D, Huang, Y., Rosakis, A.J., Griffith, W.A., Pollard, D.D.  
 “Off-fault tensile cracks: A link between geological fault observations, lab experiments and dynamic rupture models”, *Journal of Geophysical Research* , Vol. **117**, B01307, (DOI: 10.1029/ 2011JB008577) , 2012
- 185 Mihaly, J.M., Tandy, J. D., Adams, M. A. Rosakis, A. J.  
 “In Situ Diagnostics for a Small-Bore Hypervelocity Impact Facility”, *International Journal of Impact Engineering.*, Vol. **62**, pp. 13-26, December 2013
- 186 Mello, M.M., Bhat, H.S., Rosakis, A.J., Kanamori, H.  
 “Reproducing the Supershear Portion of the 2002 Denali Earthquake Rupture in the Laboratory”, *Earth and Planetary Science Letters.*, Vol. **387**, pp.89-96, (DOI:10.1016/j.epsl.2013.11.030), 2013
- 187 Gabuchian, V., Rosakis, A.J., Lapusta, N., Oglesby, D.  
 “Experimental Investigation of Strong Ground Motion due to Thrust Fault Earthquakes”, *Journal of Geophysical Research: Solid Earth*, Vol. **119**, Issue 2, pp. 1316-1336, (DOI:10.1002/2013JB010409), 2014
- 188 Rubino, V., Lapusta, N., Rosakis, A. J., Leprince, S., Avouac, J-P.  
 “Static Laboratory Earthquake Measurements with the Digital Image Correlation Method”, *Journal of Experimental Mechanics*, Special Edition on DIC Methods and Applications, DOI 10.1007/s11340-014-9893-z, 2014
- 189 Tandy, J.D., Mihaly, J. M., Adams, M.A., Rosakis, A. J.  
 “Examining the Temporal Evolution of Hypervelocity Impact Phenomena via High-speed Imaging and Ultraviolet-Visible Emission Spectroscopy”, *Journal of Applied Physics*, Vol. **116**, Issue 3, ( DOI: 10.1063/1.4890230), 2014
- 190 Mihaly, J.M., Tandy, J. D, Rosakis, A. J., Adams, M. A., Pullin, D.  
 “Pressure-Dependent, Infrared-Emitting Phenomenon in Hypervelocity Impact”, *Journal of Applied Mechanics*, Vol. **82**, pp. (DOI:10.1115/1.4029020), January 2015
- 191 Mello, M.M, Bhat, H.S., Rosakis, A.J.  
 “Spatiotemporal Properties of Sub-Rayleigh and Super-shear Rupture Velocity Fields: Theory and Experiments”, Vol. **93**, pp.153-181, *Special Issue of the Journal of The Mechanics and Physics of Solids (JMPS) honoring Professor Michael Ortiz, at the occasion of his 60th birthday*, 2016
- 192 Rubino, V., Rosakis, A.J., Lapusta, N.  
 “Understanding dynamic friction through spontaneously evolving laboratory earthquakes”, to appear in *Nature Communication* 2017
- 193 Mihaly, J.M., Rosakis, A. J., Tandy, J. D., Adams, M. A.  
 “Debris Cloud Observation Using Laser Side Lighting and Hypervelocity Impact Experiments”, 2016 submitted for publication
- 194 Gabuchian, V., Rosakis, A. J., Bhat, H., Madariaga, R., Kanamori, H.  
 “Experimental evidence that thrust earthquake ruptures might open faults”, To appear in the journal, *Nature*, 2017