

CURRICULUM VITA

Joseph E. Grady, Ph.D., P.E.

Contact Information

Grady Engineering, LLC
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Current Positions

Consulting Engineer, Grady Engineering LLC, Avon, Ohio 1999 - present
Aerospace Engineer, NASA Glenn Research Center, Cleveland, Ohio 1986 - present

Education

Ph.D. Purdue University, West Lafayette, Indiana 1985
Dissertation: Dynamic Delamination Crack Propagation
in a Graphite/Epoxy Laminate Under Impact Loading

M.S. Purdue University, West Lafayette, Indiana 1982
Thesis: Use of Cracked Beam Finite Elements
to Estimate Stress Intensity Factors

B.S. Purdue University, West Lafayette, Indiana 1980
Major: Aeronautics / Structural Engineering

Post Graduate Continuing Education

Vehicle Frontal Crash Occupant Safety	Society of Automotive Engineers	2008
The PE as an Expert Witness	Ohio Society of Professional Engrs	2007
Vehicle Accident Analysis & Reconstruction Methods	Society of Automotive Engineers	2007
Engineering Ethics	Ohio Society of Professional Engrs	2006
Composites, Ceramics & Structures	American Ceramic Society	1997
Computers & Composites	SAMPE	1993
Turbomachinery for Aeropropulsion	NASA Lewis Research Center	1992
Gas Turbine Engines	Pratt & Whitney	1992
Aerospace Structural Systems	University of California	1989
High-Tech Ceramics	Ceramatec, Inc.	1987

Professional Accreditation

Professional Engineering Licensure: Ohio (#59938) 1999

Consulting Experience

Accident Reconstruction 2003-present
Automotive Sheet Metal Processing Optimization 1995
Structural damage assessment methods for nuclear power applications 1991
Materials for Advanced Naval Munitions: Analysis, Design and Testing 1990

Honors and Awards

NASA Exceptional Service Medal	2005
Development of high temperature aircraft engine materials	1995
Demonstration of durability models for engine structures	1994
Analysis and design of aircraft engine components	1993
Transfer of advanced technologies to aircraft engine manufacturers	1992
Advancement of NASTRAN structural impact analysis model	1990
Application of experimental methods for impact damage assessment	1988
Development of analytical methods for impact damage prediction	1987

Invited lectures

Aircraft Safety & Noise Abatement Committee	Lawrence, NY	2006
AIAA Joint Propulsion Conference	Tucson, AZ	2005
Purdue University / Aeronautics	W. Lafayette, IN	1993
Naval Weapons Center	China Lake, CA	1991
Johns Hopkins University Applied Physics Lab	Laurel, MD.	1990
Ohio State University / Aerospace Engineering	Columbus, OH	1989
University of Akron / Mechanical Engineering	Akron, OH	1988

Membership in Professional Societies

American Society of Mechanical Engineers	2005-
National Society of Professional Engineers	2004-
Ohio Society of Professional Engineers	2004-
Society of Automotive Engineers	2002-
Society for the Advancement of Materials and Process Engineering (Past President, Northern Ohio Chapter)	1989-
American Society for Testing and Materials	1985-
Society for Experimental Mechanics	1983-95
American Institute of Aeronautics and Astronautics	1976-

Teaching Experience

1980-82

Aeronautical Structures: Laboratory Test Methods I and II
Purdue University, West Lafayette, IN

Pre-Doctoral Internship Experience

1977-80

Structural Dynamics Research Corp., Cincinnati	Automotive Structural Dynamics
Rockwell International Corp., Los Angeles	Aircraft Structural Durability

Editorial and Review

Experimental Mechanics	1986-92
International Journal of Fracture	1990-95
ASTM Journal for Composite Materials: Fatigue and Fracture	1987-95
AIAA Journal	1987-92

Academic Honors

Tau Beta Pi	National Engineering Honor Society	1980
Sigma Gamma Tau	Aeronautical Engineering Honor Society	1978

Publications

A. Refereed Articles

Grady, J.E. and Sun, C.T.: Dynamic Delamination Crack Propagation in a Graphite/Epoxy Laminate. *Composite Materials: Fatigue and Fracture*, ASTM STP 907: 5-31, American Society for Testing and Materials, 1986

Sun, C.T. and Grady, J.E.: Dynamic Delamination Fracture Toughness of a Graphite/Epoxy Laminate Under Impact. *Composites Science and Technology* 31: 55-72, 1988.

Grady, J.E., Chamis, C.C., and Aiello, R.A.: Dynamic Delamination Buckling in Composite Laminates Under Impact Loading: Computational Simulation. *Composite Materials: Fatigue and Fracture*, Second Volume, ASTM STP 1012: 137-149, American Society for Testing and Materials, 1989

Trowbridge, D.A., Grady, J.E. and Aiello, R.A.: Low Velocity Impact Analysis with NASTRAN. *Computers & Structures* 40 (4): 977-984, 1991

Grady, J.E. and Lerch, B.A.: Evaluation of Thermomechanical Damage in Silicon Carbide / Titanium Composites. *AIAA J.* 29 (6): 992-997, 1991

Grady, J.E. and Lerch, B.A.: Effect of Heat Treatment on Stiffness and Damping of SiC/Ti-15-3. *SAMPE Quarterly* 23 (2): 11-16, 1992

Neradka, V.F., Chang, Y., Grady, J.E. and Trowbridge, D.A.: Application of Composite Materials to Impact-Insensitive Munitions. *Johns Hopkins APL Technical Digest* 13 (3): 418-425, 1992

Shen, M.H. and Grady, J.E.: Free Vibrations of Delaminated Beams. *AIAA J.* 30 (5): 1361-1370, 1992

B. Chapters and Technical Reports

Grady, J.E.: Contact Force History and Dynamic Response due to the Impact of a Soft Projectile. *NASA Technical Memorandum* 100961, 1988

Aiello, R.A. and Grady, J.E.: A NASTRAN DMAP Alter for Linear Buckling Analysis Under Dynamic Loading. *NASA Technical Memorandum* 100832, 1989

Grady, J.E. and Meyn, E.: Vibration Testing of Impact-Damaged Composite Laminates, *NASA Technical Memorandum* 4115, 1989

Grady, J.E. and Lerch, B.A.: Evaluation of Thermal and Mechanical Loading Effects on the Structural Behavior of a SiC/Titanium Composite. NASA Technical Memorandum 102536, 1990

Grady, J.E.: Collision Forces for Compliant Projectiles. NASA Technical Memorandum 4203, 1990

Trowbridge, D.A., Grady, J.E. and Aiello, R.A.: Low Velocity Impact Analysis with NASTRAN. NASA Technical Memorandum 103169, 1990

Grady, J.E. and Sun, C.T.: Dynamic Delamination Crack Propagation in a Graphite/Epoxy Laminate. NASA Contractor Report 187226, 1991

Grady, J.E. and Lerch, B.A.: Effect of Heat Treatment on Stiffness and Damping of SiC/Ti-15-3. NASA Technical Memorandum 105564, 1992

Grady, J.E.: Fracture Toughness Testing of Polymer Matrix Composites. NASA Technical Paper 3199, and Chapter 1 of the Handbook of Ceramics and Composites, Volume 2: Mechanical Properties and Specialty Applications, Nicholas P. Cheremisinoff, Editor, pp. 1-50, Marcel Dekker, 1992

Shen, M.H. and Grady, J.E.: Free Vibrations of Delaminated Beams. AIAA J. 30 (5): 1361-1370, NASA Technical Memorandum 105582, 1992

C. Conference Publications

Grady, J.E. and Sun, C.T.: Dynamic Delamination Crack Propagation in a Graphite/Epoxy Laminate. Presented at the Symposium on Composite Materials: Fatigue and Fracture, Sponsored by the American Society for Testing and Materials, Dallas, TX, October 24-25, 1984

Grady, J.E., Chamis, C.C., and Aiello, R.A.: Dynamic Delamination Buckling in Composite Laminates Under Impact Loading: Computational Simulation. Presented at the Second Symposium on Composite Materials: Fatigue and Fracture, Sponsored by the American Society for Testing and Materials, Cincinnati, OH, April 27-28, 1987

Grady, J.E. and DePaola, K.J.: Measurement of Impact-Induced Delamination Buckling in Composite Laminates. Presented at the Fall Conference of the Society for Experimental Mechanics, Savannah, GA, October 25-28, 1987

Grady, J.E.: Impact Damage in Composite Laminates. NASA Conference Publication CP 3003 (2): 235-243, May 24-25, 1988

Aiello, R.A. and Grady, J.E.: A NASTRAN DMAP Alter for Linear Buckling Analysis Under Dynamic Loading. Presented at the 17th NASTRAN User's Colloquium, Sponsored by the Computer Software Management and Information Center, San Antonio, TX, April 24-28, 1989

Grady, J.E. and Meyn, E.: Vibration Testing of Impact Damaged Composite Laminates, AIAA 89-1411. Presented at the 30th AIAA Structures, Structural Dynamics and Materials Conference in Mobile, AL, April 3-5, 1989

Grady, J.E., Bhatt, R.T. and Klima, S.: Impact Behavior of a SiC Fiber-Reinforced Reaction Bonded Si₃N₄ Composite. Presented at the Spring Conference of the Society for Experimental Mechanics, Boston, MA, May 29-June 1, 1989

Grady, J.E. and Lerch, B.A.: Evaluation of Thermal and Mechanical Loading Effects on the Structural Behavior of a SiC/Titanium Composite, AIAA-90-1026-CP. Presented at the 31st AIAA Structures, Structural Dynamics and Materials Conference in Long Beach, CA, April 2-4, 1990

Trowbridge, D.A., Grady, J.E. and Aiello, R.A.: Low Velocity Impact Analysis with NASTRAN. Presented at the 18th NASTRAN User's Colloquium, Sponsored by the Computer Software Management and Information Center, Portland, OR, April 23-27, 1990

Grady, J.E.: Dimensional Analysis for Compliant Impactors. Presented at the 11th U.S. National Congress of Applied Mechanics, Tucson, AZ, May 21-25, 1990

Grady, J.E. and Lerch, B.A.: Effect of Heat Treatment on Stiffness and Damping of SiC/Ti-15-3. Presented at the Winter Annual Meeting of the ASME, NCA-14: 13-20, Anaheim, CA, November 8-13, 1992

Grady, J.E., Locci, I.E., Pickens, J.W., Misra, A.K., Long-Davis, M.J., Roth, D.J., Lee, K., Knip, G., and Maloney, M.: Exhaust Nozzle Materials Development for the High Speed Civil Transport. Presented at the HSR Nozzle Symposium, NASA Lewis Research Center, November 17-19, 1992

Grady, J.E., Tang, S.S. and Chen, K.L.: An Artificial Intelligence-Based Structural Health Monitoring System for Aging Aircraft. Presented at Technology 2002, NASA Conference Publication CP-3189 (2): 343-351, Baltimore, MD, December 1-3, 1992

Xie, M., Soni, S.R., Miller, R.J. and Grady, J.E.: Tensile-Flexural Test of Ceramic Matrix Composite T-Joints. Presented at the 11th Technical Conference on Composite Materials, American Society for Composites, Atlanta, GA, October 7-9, 1996

Xie, M., Soni, S.R., Miller, R.J. and Grady, J.E.: T-Shaped Ceramic Matrix Composite Joint: A Combined Experimental and Numerical Study. Presented at the 28th International SAMPE Technical Conference, Seattle, WA, November 4-7, 1996

Xie, M., Soni, S.R., Miller, R.J. and Grady, J.E.: Static and Flexural Strength of Notched Ceramic Matrix Composite Plates. Presented at the 28th International SAMPE Technical Conference, Seattle, WA, November 4-7, 1996

Grady, J.E.: Ceramic Composite Aircraft Engine Components in NASA's High Speed Civil Transport: Exhaust Nozzle Applications. Presented at the 22nd International Conference on Advanced Ceramics & Composites, Cocoa Beach, FL, January 20-24, 1998

Grady, J.E., Huff, D.L., Envia, E., Bridges, J. and Jones, M.: Engine Noise Reduction Progress in NASA's Quiet Aircraft Technology Project. Presented at the AIAA Joint Propulsion Conference, Tucson, AZ, July 10-13, 2005

Grady, J.E., Weir, D.S., Lamoureux, M.C. and Martinez, M.M.: Engine Noise Research in NASA's Quiet Aircraft Technology Project, ISABE-2007-1151, Presented at the 18th International Symposium on Air Breathing Engines, Beijing, China September 2-7, 2007