



Professor Erdogan Madenci

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<http://www.sapub.org/Journal/editorialdetails.aspx?JournalID=1109&PersonID=17699>

Department of Aerospace and Mechanical Engineering
University of Arizona

Multi-scale Mechanics of Materials Group

Education:

1987 Ph.D. University of California, Los Angeles, Engineering Mechanics

1982 M.S. Lehigh University, Applied Mechanics

1981, 1980 B.S. Lehigh University, Industrial Engineering and Mechanical Engineering

Experience:

8/89 - date Department of Aerospace and Mechanical Engineering, The University of Arizona, Tucson, Arizona: Assistant Professor 8/89-8/94; Associate Professor 8/94-8/98; Associate Head 8/98-10/01; Professor 8/98-date

10/89 - date Member, Faculty of Applied Mathematics Program, The University of Arizona

1/03 - 7/03 Visiting Scientist, Mechanics and Durability Branch, NASA Langley Research Center, Hampton, VA (sabbatical)

1/96 - 8/96 Visiting Professor, Department of Aeronautics, The Royal Institute of Technology, Sweden (sabbatical)

9/88 - 8/89 Visiting Scientist, The Fraunhofer Institute für Werkstoffmechanik, Freiburg, Germany

9/87 - 6/88 Faculty Member (Part Time), Department of Aerospace, Mechanical and Nuclear Engineering, University of California Los Angeles
9/83 - 6/86 Faculty Member (Part Time), Department of Mechanical Engineering, California State University Long Beach
6/80 - 6/83 Research/Teaching Assistant, Institute of Solid and Fracture Mechanics, Lehigh University and University of California—Los Angeles

Academic Achievements:

University of Arizona, College of Engineering Faculty Fellowship, 2011
Lockheed Martin Student Paper Award at 51st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Student: Abigail Agwai, 2010.
Intel Best Student Paper at 58th Electronic Components and Technology Conference, Student: Abigail Agwai, 2008.
Best in Session: Interconnect Reliability at Techcon Conference, Semiconductor Research Corporation, Student: Abigail Agwai, 2008.
NASA - ASEE Summer Faculty Fellowship, NASA Langley (1993, 1994)
Lehigh University Kingsley Fellowship (1982 - 83)
Sumerbank Scholarship to study in the U.S.A., awarded to three highest ranking students in nationwide exams (1976 - 80)

From FACEBOOK, June 30, 2013: Congratulations to Dr. Erdogan Madenci, Arizona State University, Department of Aerospace and Mechanical Engineering! [from Air Force Office of Scientific Research (AFOSR)]

Dr. Madenci was awarded an AFOSR MURI grant for his multidisciplinary basic research topic, "MURI Center for Material Failure Prediction through Peridynamics,". The following institutions are involved in this research effort: University of Nebraska-Lincoln, Pennsylvania State University (Penn State), UTSA - The University of Texas at San Antonio, Arizona State University

Editorial Board Member of International Journal of Composite Materials

Selected Publications Also See:

<http://www.sapub.org/Journal/editorialdetails.aspx?JournalID=1109&PersonID=17699>)

Madenci, E. and Westmann, R. A., 1991, "Local Delamination Buckling in Layered Systems," ASME Journal of Applied Mechanics, Vol. 58, pp. 157-166.

Madenci, E., 1991, "Delamination Growth and Buckling in an Orthotropic Strip," International Journal of Solids and Structures, Vol. 27, pp. 1773-1788.

Madenci, E. and Barut, A., 1994, "Pre and Postbuckling Response of Curved, Thin Composite Panels with Cutouts Under Compression," International Journal for Numerical Methods in Engineering, Vol. 37, pp. 1499-1510.

Madenci, E. and Barut, A., 1994, "Thermal Postbuckling Analysis of Cylindrically Curved Composite Laminates with a Hole," International Journal for Numerical Methods in Engineering, Vol. 37, pp. 2073-2091.

Madenci, E. and Barut, A., 1994, "A Free Formulation Based Flat Shell Element for Nonlinear Analysis of Thin Composite Structures," International Journal for Numerical Methods in Engineering, Vol. 37, pp. 3825-3842.

Madenci, E., Ileri, L., and Starnes, J., 1995, "Analysis of a Pin Loaded Hole in Composite Laminates Under Combined Bearing Bypass and Shear Loading," *International Journal of Solids and Structures*, Vol. 32, pp. 2053-2062.

Madenci, E., Balkan, H., and Quan, M., 1995, "Biaxial Compression of a Thin Layer with Circular Debonding Over a Substrate," *International Journal of Solids and Structures*, Vol. 32, pp. 3465-3477.

Madenci, E. and Barut, A., 1996, "Dynamic Response of Thin Composite Shells Experiencing Nonlinear Elastic Deformations and Large Overall Motions," *International Journal for Numerical Methods in Engineering*, Vol. 39, pp. 2695-2723.

Barut, A., Madenci, E., and Tessler, A., 1996, "Nonlinear Elastic Deformations of Moderately Thick Laminated Shells Subjected to Large and Rapid Rigid-Body Motion," *Finite Elements in Analysis and Design*, Vol. 22, pp. 41-57.

Barut, A., Madenci, E., and Tessler, A., 1997, "Nonlinear Analysis of Laminates Through a Mindlin-Type Shear Deformable Shallow Shell Element," *Computer Methods in Applied Mechanics and Engineering*, Vol. 143, pp. 155-173.

Barut, A., Madenci, E., Britt, V. O., and Starnes, J. H., Jr., 1997, "Buckling of a Thin Tension-Loaded Composite Plate with an Inclined Crack," *Engineering Fracture Mechanics*, Vol. 58, pp. 233-248.

Razi, H., Sergeev, B., Shkarayev, S., and Madenci, E., 1999, "Analysis of Sandwich Panels with Multiple-Site Damage," *Engineering Fracture Mechanics*, Vol. 64, pp. 255-268.

Barut, A., Madenci, E., and Tessler, A., 2000, "Nonlinear Thermoelastic Analysis of Composite Panels Under Non-Uniform Temperature Distribution," *International Journal of Solids and Structures*, Vol. 37, pp. 3681-3713.

Barut, A., Madenci, E., Tessler, A., and Starnes, J. H., Jr., 2000, "A New Stiffened Shell Element for Geometrically Nonlinear Analysis of Composite Laminates," *Computers and Structures*, Vol. 77, pp. 11-40.

Sburlati, R., Madenci, E., and Guven, I., 2000, "Local Buckling of a Circular Interface Between a Layer and a Substrate with Finite Thickness," *ASME Journal of Applied Mechanics*, Vol. 67, pp. 590-596.

Barut, A., Madenci, E., Heinrich, J, and Tessler, A., 2001, "Analysis of Thick Sandwich Construction by a {3,2}-Order Theory," *International Journal of Solids and Structures*, Vol. 38, pp. 6063-6077.

Das, M., Barut, A., Madenci, E., and Ambur, D.R., 2005, "Complete Stress Field in Sandwich Panels with a New Triangular Finite Element of Single-Layer Theory," *Computer Methods in Applied Mechanics and Engineering*, Vol. 194, pp. 2969-3005.

Oterkus, E., Barut, A., Madenci, E. and Ambur, D. R., 2005, "Nonlinear Analysis of a Composite Panel with a Cutout Repaired by a Bonded Tapered Composite Patch," *International Journal of Solids and Structures*, Vol. 42, pp. 5274-5306.

Das, M., Barut, A., Madenci, E., and Ambur, D.R., 2006, "A Triangular Plate Element for Thermo-elastic Analysis of Sandwich Panels with a Functionally Graded Core" *International Journal for Numerical Methods in Engineering*, Vol. 68, pp. 940-966.

Poore, A. L., Barut, A., and Madenci, E., 2008, "Free vibration of laminated cylindrical shells with a circular cutout," *Journal of Sound and Vibration*, Vol. 312, pp. 55-73.

Barut, A., and Madenci, E., 2009, "Analysis of bolted-bonded composite single-lap joints under combined in-plane and transverse loading" *Composite structures*, Vol. 88, pp 579-594.

Das, M., Oterkus, E., Madenci, E., and Razi, H., 2009, "Residual strength of sandwich panels with hail damage" *Composite structures*, Vol. 88, pp. 403-412.

Das, M., Madenci, E., and Ambur, D. R., 2009, "Three-dimensional nonlinear analyses of scarf repair in composite laminates and sandwich panels," *Journal of Mechanics of Materials and Structures*, Vol. 3, pp. 1641-1658.

Kilic, B., and Madenci, E., “Structural Stability and Failure Analysis Using Peridynamic Theory,” *International Journal of Non-Linear Mechanics*, Vol. 44, 2009, pp. 845-854

Barut, A., Madenci, E. and Nemeth, M., “Stress and Buckling Analyses of Laminates with a Cutout Using a {3,0}- Plate Theory” *Journal of Mechanics of Materials and Structures*, Vol. 6, 2011, pp. 827–868.

Oterkus, E., Madenci, E., Weckner, O., Silling, S., Bogert, P. and Tessler, A., “Combined finite element and peridynamic analyses for predicting failure in a stiffened composite curved panel with a central slot,” *Composite Structures*, Vol. 94, 2012, pp. 839-850.

Post-buckling Response of Scarf Repaired Laminates Using a Refined Zigzag Element, AIAA Paper AIAA 2014-0847, Atila Barut; Erdogan Madenci; Alexander Tessler