

VICTOR GIURGIUTIU (*jurjutzu*), Ph.D., P.E., F.ASME, FRAeS, AF.AIAA
US citizen

University of South Carolina
Department of Mechanical Engineering
Columbia, SC 29208
Tel.: 803-777-8018, FAX: 803-777-0106
E-mail: victorg@sc.edu

Residence:
1622 Hollywood Dr.
Columbia, SC 29205
Tel.: 803-234-7408

<http://www.me.sc.edu/fs/giurgiutiu.html> <http://www.me.sc.edu/research/lamss/>



(2017)

http://scholar.google.com/citations?user=N_jW68UAAAAJ&hl=en

1 EDUCATION

PhD Aeronautics, Aeronautical Structures, Imperial College, London, UK, 1977
BSc (Eng) Aeronautical Engineering, Imperial College, London, UK, 1972

2 PROFESSIONAL HISTORY

1996-present **University of South Carolina**, Columbia, SC
2014-present *John Ducate Sr. Chaired Professor*, Dept. of Mechanical Engineering
2005-2014 *Professor*, Department of Mechanical Engineering
1997-2005 *Associate Professor (tenured 2002)*, Department of Mechanical Engineering
1996-1997 *Research Professor*, Department of Mechanical Engineering
1996-present Director, Laboratory for Active Materials and Smart Structures (LAMSS)

8/2009-8/2013 **University of South Carolina**, Interim Associate Dean for Research and Graduate Education,
College of Engineering and Computing

2-6/2012 **Fraunhofer Institute for Nondestructive Testing**, Dresden, Germany, Sabbatical
Appointment

6/2011 **University of Sheffield**, UK, Royal Academy of Engineering Distinguished Visitor
Fellowship

6/2006-8/2009 **Air Force Office of Scientific Research (AFOSR)**, Arlington, VA
(Program Manager for Structural Mechanics, IPA from University of South Carolina)

6-8/2002 **Air Force Research Laboratory, WPAFB**, OH, Summer Faculty Fellowship Program

1992-1996 **Virginia Polytechnic Institute and State University**, Blacksburg, VA
1994-1996 *Research Professor and Associate Director*, Center for Intelligent Material Systems and
Structures (CIMSS), *Research Scientist*, NSF-Science and Technology Center for High
Performance Adhesives and Composites
1992-1993 *Visiting Professor* in the Center for Intelligent Material Systems and Structures (CIMSS)
and in the Department of Engineering Science & Mechanics

1972-1992 **Aviation Research Institute**, Bucharest, Romania
1991-1992 General Director and CEO, STRAERO Institute for Theoretical and Experimental
Analysis of Aeronautical Structures
1990-1991 Scientific Secretary (Deputy Director for Science and Academics), ORCAS Aviation
Research Institute
1988-1989 Technical and Production Director, ROMAERO Aircraft Company, Bucharest (on leave
from the Aviation Research Institute)
1982-1988 Head, Aeronautical Structures Test Laboratory
1977-1982 Senior Scientist; Group Leader, Aero-servo-elasticity research group

1977-1992 **Politehnica University Bucharest**, Romania
Adjunct Associate Professor (Assistant Prof. 1977-1989), Aerospace Engineering Department

2.1 PERSONAL HONORS AND AWARDS

- University of South Carolina 2016-2017 *Breakthrough Leadership in Research Award*, April 2017
- *Nondestructive Evaluation Lifetime Achievement Award* 2016 presented at the 2016 *SPIE International Symposium on Smart Structures and NDE* comprising 10 conferences, 20-24 March 2016, Las Vegas, NV
- *University of South Carolina Educational Foundation Research Award*, April 2015
- *Research Achievement Award*, College of Engr. and Computing, University of South Carolina, June, 2012
- *Associate Fellow* of the American Institute of Aeronautics and Astronautics (AIAA), Jan. 2010
- *Fellow* of the American Society of Mechanical Engineers (ASME), Nov. 2006
- *Fellow* of the Royal Aeronautical Society (RAeS), April 2006
- *Mungo Graduate Teaching Award*, University of South Carolina, April 2004
- Structural Health Monitoring Person of the Year Award 2003 presented by the Structural Health Monitoring -- an International Journal, Sage Pub., at the 4th International Workshop on Structural Health Monitoring, Stanford University, CA, September 15-17, 2003
- ASME NDE Division 2002 Best Paper Award, Victor Giurgiutiu and Jingjing Bao
- 2002 First Place Best Student Paper Award of the *NDE for Health Monitoring and Diagnostics Symposium*, for the paper "Health Monitoring of Aging Aerospace Structures Using the Electro-Mechanical Impedance Method" by Andrei N. Zagrai and Victor Giurgiutiu
- Featured in the *Smart Materials Bulletin – An International Newsletter*, Elsevier, May 2002
- 1997 USACERL Research Product Development Team Award of the US Army Construction Engineering Research Laboratories (CERL), December 1997
- Featured in *Machine Design*, Penton Pub., April 18, 1996
- Best Questions Award of the 2nd Army Research Office Workshop on Smart Structures and Materials, University of Maryland, September 1995
- *Aurel Vlaicu Prize* of the Romanian Academy, March 1983
- Diploma of Membership of the Imperial College (DIC), London, England, February 1977
- *Finsbury Medal* of the Royal Aeronautical Society, London, England, June 1972
- Highest Honors Graduate of Aeronautics Department, Imperial College of Science and Technology, London, England, June 1972
- *Henrici Medal* of the Imperial College, London, England, June 1971
- Who's Who in Science and Engineering Biographical Index

2.2 HONORS AND AWARDS RECEIVED BY CURRENT AND FORMER STUDENTS

- Ayman ABDELRAHMAN (PhD student): Travel Grant, USC Graduate School, \$500, 9/2013
- Yanfeng SHEN (PhD student): SPARC Graduate Fellowship, Office of the USC Vice President for Research, \$5,000, 5/2013-5/2014
- Giola SANTONI-BOTTAI (PhD, 2010): Outstanding Dissertation Award for Mathematics, Physical Sciences, and Engineering, Univ. South Carolina, July 2010
- Andrei ZAGRAI (PhD, 2002): The Achenbach Medal 2011
<http://structure.stanford.edu/workshop/awards.html>
- Andrei ZAGRAI (PhD, 2002): 2002 First Place Best Student Paper Award of the *NDE for Health Monitoring and Diagnostics Symposium*, for the paper "Health Monitoring of Aging Aerospace Structures Using the Electro-Mechanical Impedance Method" by Andrei N. Zagrai and Victor Giurgiutiu
- Andrei ZAGRAI (PhD, 2002): Best Student Paper Award in Structural Acoustics and Vibration, Second Prize, Acoustical Society of America, Ft. Lauderdale, 3-7 December 2001
- Joel KOHN (SPRI 2001): SC Junior Academy of Science, Engineering division, First Place with the research paper and Second Place with the presentation, April 15, 2002

2.3 EDITOR OF MAJOR NATIONAL AND INTERNATIONAL JOURNALS

- Special Issues Editor, *Structural Health Monitoring -- an International Journal*, Sage Pub., (2012 – present), <https://us.sagepub.com/en-us/nam/journal/structural-health-monitoring#tabview=boards>
- Assoc. Editor, *ASME Journal of Nondestructive Evaluation, Diagnostics, and Prognostics of Engr. Systems*, <https://journaltool.asme.org/home/JournalDescriptions.cfm?JournalID=31> (2017-present)
- Assoc. Editor, *The Aeronautical Journal*, Royal Aeronautical Society, London, UK, http://www.raes.org.uk/cmspage.asp?cmsitemid=Publications_Journal (2006 – present)
- Assoc. Editor, *Structural Health Monitoring an International Journal*, Sage Pub., (2001 – present) <https://us.sagepub.com/en-us/nam/journal/structural-health-monitoring#tabview=boards>
- Assoc. Editor, *International Journal of Sustainable Materials and Structural Systems*, Inderscience Pub., Switzerland (2012--present) <http://www.inderscience.com/jhome.php?jcode=ijsmss>
- Executive Editor, *INCAS Bulletin*, National Institute for Aerospace Research, Romania, ISSN 2247–4528 http://bulletin.incas.ro/editorial_board.html (2010-present)
- Member of four-person expert panel for Woodhead Pub. Ltd (UK) to develop a Book Series on *Composites Science and Engineering* (2013-2016)
- Section Editor, *Encyclopedia of Structural Health Monitoring*, F-K. Chang, C. Boller, Y. Fujino (Editors-in-Chief), Wiley, 2008-2009
- Guest Editor to the *Smart Structures and Systems – an International Journal*, Techno-Press, Korea, for the special issue on sensors (2004 – 2005)
- Guest Editor to the *Journal of Intelligent Material Systems and Structures*, Sage Pub., USA, for the special issue *JIMSS-SES 2000* (2000 –2002)
- Associate Editor of the *International Journal of Aerospace Engineering*, Hindawi Publishing Corp. , www.hindawi.com (2007—2009)

<https://us.sagepub.com/en-us/nam/journal/structural-health-monitoring#tabview=boards>

h-index=46; i10-index=170; >10,000 total citations; 850/year average

http://scholar.google.com/citations?user=N_jW68UAAAAJ&hl=en

Top 12 cited publications are listed below:



Victor GIURGIUTIU

UNIVERSITY OF SOUTH CAROLINA
Verified email at sc.edu - [Homepage](#)

Structural health monitoring... active materials and smart... aerospace composites

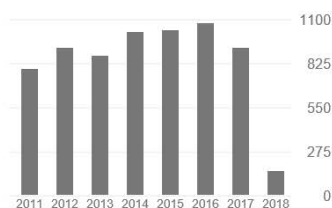
FOLLOW

GET MY OWN PROFILE

TITLE	CITED BY	YEAR
Structural health monitoring: with piezoelectric wafer active sensors V Giurgiutiu Elsevier	1186	2007
Tuned Lamb wave excitation and detection with piezoelectric wafer active sensors for structural health monitoring V Giurgiutiu Journal of intelligent material systems and structures 16 (4), 291-305	707	2005
Piezoelectric wafer embedded active sensors for aging aircraft structural health monitoring V Giurgiutiu, A Zagrai, J Jing Bao Structural Health Monitoring 1 (1), 41-61	528	2002
Embedded self-sensing piezoelectric active sensors for on-line structural identification V Giurgiutiu, AN Zagrai Journal of Vibration and Acoustics 124 (1), 116-125	297	2002
Characterization of piezoelectric wafer active sensors V Giurgiutiu, AN Zagrai Journal of Intelligent Material Systems and Structures 11 (12), 959-976	261	2000
Electro-mechanical impedance method for crack detection in thin plates AN Zagrai, V Giurgiutiu Journal of Intelligent Material Systems and Structures 12 (10), 709-718	248	2001
Lamb wave generation with piezoelectric wafer active sensors for structural health monitoring V Giurgiutiu Smart Structures and Materials 2003: Smart Structures and Integrated Systems ...	239	2003
Embedded non-destructive evaluation for structural health monitoring, damage detection, and failure prevention V Giurgiutiu, A Cuc Shock and Vibration Digest 37 (2), 83	228	2005
In situ 2-D piezoelectric wafer active sensors arrays for guided wave damage detection L Yu, V Giurgiutiu Ultrasonics 48 (2), 117-134	222	2008
Experimental investigation of E/M impedance health monitoring for spot-welded structural joints V Giurgiutiu, A Reynolds, CA Rogers Journal of Intelligent Material Systems and Structures 10 (10), 802-812	204	1999
Embedded-ultrasonics structural radar for in situ structural health monitoring of thin-wall structures V Giurgiutiu, JJ Bao Structural Health Monitoring 3 (2), 121-140	199	2004
Damage detection in thin plates and aerospace structures with the electro-mechanical impedance method V Giurgiutiu, A Zagrai Structural Health Monitoring 4 (2), 99-118	179	2005

Cited by [VIEW ALL](#)

	All	Since 2013
Citations	10925	5089
h-index	46	31
i10-index	170	102



Continuation of this list is available at http://scholar.google.com/citations?user=N_jW68UAAAAJ&hl=en)

TABLE OF CONTENTS

1	EDUCATION	1
2	PROFESSIONAL HISTORY.....	1
2.1	PERSONAL HONORS AND AWARDS	2
2.2	HONORS AND AWARDS RECEIVED BY CURRENT AND FORMER STUDENTS	2
2.3	EDITOR OF MAJOR NATIONAL AND INTERNATIONAL JOURNALS	3
3	I. TEACHING ACTIVITY.....	6
3.1	COURSES TAUGHT AT UNIVERSITY OF SOUTH CAROLINA	6
3.2	COURSES TAUGHT AT VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY	6
3.3	COURSES TAUGHT AT BUCHAREST POLYTECHNIC INSTITUTE AND TECHNICAL UNIVERSITY	6
4	II. SCHOLARLY AND RESEARCH ACTIVITY	6
4.1	RESEARCH INTERESTS.....	6
4.2	RESEARCH LABORATORY	6
4.3	FUNDED RESEARCH PROJECTS.....	7
4.4	GRADUATE STUDENTS ADVISED SINCE MOVING TO US	12
4.4.1	<i>PhD Students (alphabetic listing)</i>	12
4.4.2	<i>Master's Students (alphabetic listing)</i>	14
4.4.3	<i>Visiting Scholars (recent years)</i>	15
4.4.4	<i>Underrepresented Minority Students</i>	15
4.4.5	<i>Postdoctoral Fellows</i>	16
4.5	PUBLICATIONS.....	17
4.5.1	<i>Books</i>	17
4.5.2	<i>Book Chapters</i>	17
4.5.3	<i>Journal Articles in Peer-Review Archival Journals</i>	19
4.5.4	<i>Journal Articles Submitted, Under Review, in Preparation</i>	26
4.5.5	<i>Papers in Major National and International Conference Proceedings</i>	26
4.5.6	<i>PhD Dissertation</i>	44
4.5.7	<i>Patents</i>	45
4.5.8	<i>Invention Disclosures to the University Intellectual Property Management Office</i>	45
5	III. PROFESSIONAL AND SCIENTIFIC SERVICE.....	46
5.1	ADVISORY AND CONSULTING SERVICES TO PRIVATE INDUSTRY AND GOVERNMENT AGENCIES	47
5.2	ADMINISTRATIVE AND COMMITTEE DUTIES	47
5.3	PROFESSIONAL SOCIETIES MEMBERSHIPS	47
5.4	PROPOSALS REVIEWER AND MEMBER OF REVIEW PANELS TO STATE AND FEDERAL AGENCIES	47
5.5	EDITOR TO MAJOR NATIONAL AND INTERNATIONAL JOURNALS	47
5.6	REVIEWER TO MAJOR NATIONAL AND INTERNATIONAL JOURNALS	48
5.7	CHAIR AND CO-CHAIR AT MAJOR NATIONAL AND INTERNATIONAL CONFERENCES.....	48
5.8	INVITED LECTURES AND KEYNOTE SPEAKER.....	49
5.9	COMMUNITY AND SOCIETY SERVICE.....	49

3 I. TEACHING ACTIVITY

3.1 COURSES TAUGHT AT UNIVERSITY OF SOUTH CAROLINA

EMCH 883 Wave Propagation in Solids
EMCH 727 Advanced Mechanical Design
EMCH 721 Aeroelasticity
EMCH 585 Nature of Composite Materials
EMCH 575 Adaptive Materials and Smart Structures
EMCH 516 Controls for Mechanical Engineers
EMCH 367 Fundamentals of Microprocessors for Mechanical Engineers
<http://www.me.sc.edu/courses/emch367>
EMCH 361 Measurements and Instrumentation
EMCH 200 Statics

3.2 COURSES TAUGHT AT VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

ME 5984 Mechanics of Intelligent Materials
ESM/AOE/ME 5984 Rotor Blade Systems Analysis
ESM 5134 Advanced Mechanics of Materials
ESM 4404 Mechanics of Composite
ESM 4054 Mechanics of Materials; ESM 2304 Dynamics; ESM 1004 Statics

3.3 COURSES TAUGHT AT BUCHAREST POLYTECHNIC INSTITUTE AND TECHNICAL UNIVERSITY

Experimental Analysis of Aerospace Structures
Helicopter Dynamics and Aerodynamics
Mechanical Vibrations
Statics and Dynamics

4 II. SCHOLARLY AND RESEARCH ACTIVITY

4.1 RESEARCH INTERESTS

Building on a strong background in vibrations, structural dynamics, aeroservoelasticity, helicopter aeromechanics, and composite materials, I conduct my research in the multidisciplinary fields of **Structural Health Monitoring (SHM), Adaptive Materials and Smart Structures, Aerospace Composites, and Mechatronics**. I am developing a new area: **Embedded Ultrasonic Nondestructive Evaluation (NDE) with Piezoelectric Wafer Active Sensors (PWAS)**. I have been involved in NDE/SHM research since 1980s with modal and impedance analysis of military aircraft), continued in the 1990s with smart structures and active materials which lead on my current focus on guided-waves and PWAS transducers.

My immediate research focus is on embedded ultrasonic NDE with PWAS technology, which has multiple applications for in-situ health monitoring of aerospace, mechanical, and civil engineering structures. My research growth vision is aimed at expanding these concepts into new applications, such as active biomedical sensors and integrated thin-film active sensors. My long-term vision is to achieve the integration of mechanical, electrical/electronics, and information technology into smart materials and structures that will provide on-demand bulletins of hidden internal damage, structural health and predicted future performance.

Research funding has been over **\$11 millions**, of which ~\$5.0 millions as single investigator, ~\$3.5 millions as PI on a team of investigators, and ~\$2.5 millions as co-PI.

4.2 RESEARCH LABORATORY

At the University of South Carolina, I have founded and developed the **Laboratory for Adaptive Materials and Smart Structures (LAMSS)**, (<http://www.me.sc.edu/research/lamss>), located in a 600 sq. ft. three-room suite and equipped with over \$2,000,000 worth of specialized equipment.

I am member of the **Center for Mechanics, Materials, and Non-Destructive Evaluation (NDE)** (<http://www.me.sc.edu/Research/cmmnde/profile.htm>) with interest in active sensors and embedded NDE, solid mechanics and structural dynamics, intelligent/smart/adaptive material systems and structures.

4.3 FUNDED RESEARCH PROJECTS

1. “Year 3 of Predictive Sensing of Aerospace Composite Structures”, V. Giurgiutiu (PI), Air Force Office of Scientific Research (AFOSR), FA9550-16-1-0401, \$161,083, 7/2018-6/2019
2. "Year 1 of Experimental and Analytical Study of Low Amplitude AE signals due to Rubbing/Clapping of Crack Faying Surfaces", V. Giurgiutiu (PI), Office of Naval Research (ONR), N00014-17-1-2829, \$150,000, 9/2017–8/2018, 15540-FD52
3. “USC Contribution to IAI SBIR Proposal to NASA 2017”, V. Giurgiutiu (PI), Intelligent Automation, Inc./NASA, \$20,000, 2017/06/08—2017/12/08, 15540-FD46
4. “Year 2 of Predictive Sensing of Aerospace Composite Structures”, V. Giurgiutiu (PI), Air Force Office of Scientific Research (AFOSR), FA9550-16-1-0401, \$135,756, 9/2017-6/2018
5. “A Novel Acoustic Emission based Approach for Structural Health Monitoring”, V. Giurgiutiu (PI), Md. Yeasin Bhuiyan (co-PI), \$5,000 (VP for Research \$2,500, experiment.com crowd-funding \$2,500), 2017/07/01—2018/06/30, 15540-E435
6. “NASA ACC ACP TC2 2C21 Rapid Inspection”, V. Giurgiutiu (PI), S. Banerjee (co-PI), A. Bayoumi (co-PI), L. Yu (co-PI), B. Zhang (co-PI), R. Harik (co-PI), NASA, 5/2017—9/2019 \$200,933. V. Giurgiutiu is responsible for “Task 7: Robotic Bond Strength Verification/Bond Process Validation” \$91,280, 15540-FD40, 15540-FD64
7. “Year 1 of Predictive Sensing of Aerospace Composite Structures”, V. Giurgiutiu (PI), Air Force Office of Scientific Research (AFOSR), FA9550-16-1-0401, \$58,886, 9/2016-8/2017
8. “Non-Destructive Evaluation, Boeing Bucket #3 BRT-W0915-0005 - Project Agreement 5”, V. Giurgiutiu (Lead PI), S. Banerjee (co-Lead PI), Lingyu “Lucy” Yu (co-PI), B. Lin (co-PI), P. Ziehl (co-PI), The Boeing Company, \$954,215, 11/2015—12/2019
9. "Multimodal Nondestructive Dry Cask Basket Structure and Spent Fuel Evaluation", Lingyu “Lucy” Yu (PI) and V. Giurgiutiu (co-PI), Dept. of Energy, DOE IRP DE-NE0008400, \$3,000,000 total with University of Mississippi lead institution; \$675,000 for USC, 1/2016-12/2018
10. “A New Generation of Acoustic Emission Sensors”, V. Giurgiutiu (PI), Office of Naval Research (ONR), N000141512102, \$150,000, 1/2015-03/2018
11. “Multi-scale Computational Non-destructive Evaluation (NDE) for Composites”, S. Banerjee (PI), V. Giurgiutiu (co-PI), NASA Langley Research Center, NNL15AA16C, \$775,072, 9/2015-9/2018
12. "Structural Health Monitoring (SHM) of composite structure for airplanes and helicopters based on Passive Sensing of Acoustic Emissions - Fokker Task Order Number 2", M. van Tooren (PI), V. Giurgiutiu (co-PI), P. Ziehl (co-PI), Fokker Aerostructures BV, \$191,264, 12/2014-12/2016
13. “Physics of Materials Based Predictive Methodology for AE Signals ID Validated by Experiments under Various Operational and Environmental Conditions”, Office of Naval Research (ONR), N00014-14-1-0655, \$300,000, 5/2014-5/2017
14. “Structural Health Monitoring of Nuclear Spent Fuel Storage Facilities”, L. Yu (PI), T. Knight (co-PI), V. Giurgiutiu (co-PI), B. Lin (co-PI), Dept. of Energy, DOE-NEUP, DE-NE0000726, \$597,832, 1/2014-1/2017
15. “Ultrasonic NDE/SHM Equipment for Advanced Materials and Structures”, V. Giurgiutiu (PI), L. Yu (co-PI), B. Lin (co-PI), J. Bao (co-PI), Air Force Office of Scientific Research (AFOSR), FA2386-13-1-3014, \$500,000, 9/2013-8/2015
16. “NATO Planning Grant”, V. Giurgiutiu (PI), North Atlantic Treaty Organization, \$6,521, 4/2013-12/2014
17. “Student Capstone Project in Composite Joints”, V. Giurgiutiu (PI), Prasun Majumdar (co-PI), Kenneth Reifsnider (co-PI), Tanvir Farouk (co-PI), The Boeing Company, \$22,500, 9/2012-8/2017
18. “Aerospace Engineering Education and Aerospace Composites Research”, V. Giurgiutiu (PI), USC Institute for Visiting Scholars, \$25,000, 3/2012-12/2014
19. “Integrated Opto-Electronic Equipment for Autonomous Structural Health Monitoring Research”, V. Giurgiutiu (PI), L. Yu (co-PI), B. Lin (co-PI), J. Bao (co-PI), M. Gresil (co-PI), Office of Naval Research (ONR), N00014-12-1-0936, \$194,507, 6/2012-6/2014

20. "USC participation in the AUFOS NICOP project with Australia", V. Giurgiutiu (PI), Office of Naval Research (ONR), N00014-12-1-0653, \$150,000, 10/2012—9/2015
21. "Predictive Sensing for Aerospace Applications", V. Giurgiutiu (PI), Air Force Office of Scientific Research (AFOSR), FA9550-11-1-0133, \$575,000, 7/2011—6/2015
22. "PWAS EMIS-ECIS Active Carbon Filter Residual Life Estimation Methodology", V. Giurgiutiu (PI), J. Bao (co-PI), Army Research Office (ARO), W911NF-11-1-0210, \$300,000, 5/2011—5/2014
23. "Predictive Modeling of Structural Sensing for Navy Applications", V. Giurgiutiu (PI), Office of Naval Research (ONR), N00014-11-1-0271, \$449,888, 11/2010—12/2014
24. "SBIR N101-095 Distributed Sensor Network for Structural Health Monitoring of Ships", V. Giurgiutiu (PI), DOD through Albido Corp., \$12,600, 5-9/2010
25. "ARO-STIR: Combined Use of Electromechanical Impedance Spectroscopy (EMIS) and Electrochemical Impedance Spectroscopy (ECIS) for Contamination Detection in Active Carbon Filters", Army Research Office, \$49,996, 4/2010-1/2011
26. "Exact Modeling of Power and Energy Transduction for Optimum Design of Structurally-Integrated Thin-Film Active Sensors", V. Giurgiutiu (PI), National Science Foundation, NSF CMMI-0925466, \$239,977, 9/2009-8/2013
27. "Self-Powered Wireless Sensor Network for Structural Bridge Health Prognosis", V. P. Ziehl (PI), J. Caicedo (co-PI), L. Yu (co-PI), Giurgiutiu (co-PI), National Institute of Standards and Technology (NIST) Technology Innovation Program Award, \$2,000,000 for 5 years to USC, 2/2009-1/2014
28. Extension of IPA Agreement, V. Giurgiutiu (PI), Air Force Office of Scientific Research, 15540-FA68, \$241,324, 6/2008-8/2009.
29. Research Experience for Undergraduates (REU) Supplement to grant NSF CMS 0528873, V. Giurgiutiu (PI), NSF, 1/2008-12/2009, \$6,060
30. IPA Agreement, V. Giurgiutiu (PI), Air Force Office of Scientific Research, 15540-FA68, \$419,081, 6/2006-5/2008
31. International Research and Education Experience (IREE) supplement to grant NSF CMS 0528873, V. Giurgiutiu (PI), NSF, \$22,000, 8/2006-12/2009
32. "Fundamental Studies in Embedded Ultrasonic NDE: Lamb Wave Interaction between Piezoelectric Wafer Active Sensors and Host Structure", Year 3, Jan. 2006, \$54,000 for 12 months, V. Giurgiutiu (PI), Air Force Office of Scientific Research, FA9550-04-0085
33. V. Giurgiutiu (PI), C. Chen, A. Bhalla (co-PIs, University of Texas San Antonio), J. Jiang (co-PI, University of Texas Arlington), "Ferroelectric Thin-Film Active Sensor Arrays for Structural Health Monitoring" \$430,000, NSF CMS 0528873, September 2005 – August 2009.
34. "Collaboration on SBIR AF05-136 Technologies for In Situ Interrogation of Damage States in Structural Materials Non-Destructive Evaluation", \$33,000 for 6 months, V. Giurgiutiu (PI), AFRL through Global Contours, Inc., FA8650-05-M-5209, April 2005
35. "Dynamic Shields", Year 2, \$680,000 for 12 months, Anthony Reynolds (PI), M. Sutton (co-PI), Y. Chao (co-PI), V. Giurgiutiu (co-PI), X. Li (co-PI), January 2005, Army Research Laboratory
36. "Boeing PWAS SHM Test", \$9,000 for 12 months, V. Giurgiutiu (PI), Boeing Company, Jan. 2005
37. "Fundamental Studies in Embedded Ultrasonic NDE: Lamb Wave Interaction between Piezoelectric Wafer Active Sensors and Host Structure", Year 2, Jan. 2005, \$54,000 for 12 months, V. Giurgiutiu (PI), Air Force Office of Scientific Research, FA9550-0Next 4-0085
38. "PWAS Phased Array Confirmation Test", \$3,000 for 3 months, V. Giurgiutiu (PI), Boeing Company, Oct. 2004
39. "High Energy Density Nastic Structures Using Biological Transport Mechanism", \$100,000 for 18 months, V. Giurgiutiu (PI for USC), DARPA through Virginia Tech, Oct. 2004
40. "Predictive Methodologies for the Design of Lamb-Wave Piezoelectric Wafer Active Sensors for Structural Health Monitoring, Damage Detection, and Failure Prevention", \$232,720 for 36 months, V. Giurgiutiu (PI), April 2004 – December 2009, NSF CMS 0408578
41. "Piezoelectric detection and monitoring of the wound healing response", \$45,200 for 12 months, J. W. Bender (PI), H. Friedman (co-PI, SOM), V. Giurgiutiu (co-PI, COEIT), T. Borg (co-PI, SOM), USC Medicine and Engineering Research Development Fund, April 2004

42. "Supporting the Development of a Multi-Sensor Structural Health Monitoring System Using Embedded Sensors", \$120,000 for 12 months, V. Giurgiutiu (PI), April 2004, Air Force Research Laboratory through Universal Technologies Corporation, # F33615-03-D-5204
43. "Participation in Phase II STTR T7-02 Space Qualified Nondestructive Evaluation", \$190,000 for 24 months, V. Giurgiutiu (PI), 9/2005-12/2007, NASA through NextGen Aeronautics, Inc.
44. "Fundamental Studies in Embedded Ultrasonic NDE: Lamb Wave Interaction between Piezoelectric Wafer Active Sensors and Host Structure", Year 1, Feb. 2004, \$54,000 for 10 months, V. Giurgiutiu (PI), Air Force Office of Scientific Research, FA9550-04-0085
45. "Development of Interdisciplinary Sensors Research", \$5,000 for 12 months, V. Giurgiutiu (PI), January 2004, USC Research Foundation seed grant
46. "Dynamic Shields", Year 1, \$680,000 for 12 months, Anthony Reynolds (PI), M. Sutton (co-PI), Y. Chao (co-PI), V. Giurgiutiu (co-PI), X. Li (co-PI), January 2004, Army Research Laboratory
47. "SPIDAS – Self-processing integrated damage assessment sensor for structural health monitoring", \$30,000 for 24 months, V. Giurgiutiu (PI), NASA through SCSGC, Feb. 2004
48. "Collaboration on Phase I STTR T7-02 Space Qualified Nondestructive Evaluation", \$33,000 for 12 months, V. Giurgiutiu (PI), September 2003, NASA through NextGen Aeronautics, Inc.
49. "Structural Monitoring with Piezoelectric Wafer Active Sensors", \$166,000 for 12 months, V. Giurgiutiu (PI), April 2003, Air Force Research Laboratory through Universal Technology Corporation, F33615-01-D-5801
50. "Piezo Nano Sensors – An Initial Investigation of Nanostructured Piezoelectric Coatings and Thin-Films", \$20,000 for 12 months, University of South Carolina NanoCenter seed grant, March 2003
51. "Sensing and Regulation of Fibrous Encapsulation", \$25,000 for 12 months, J. W. Bender (PI), T. Borg (Co-PI), H. Friedman (Co-PI), V. Giurgiutiu (Co-PI), J.-F. Lefavre (Co-PI), University of South Carolina seed grant, February 2003
52. "The Application of Piezoelectric-Wafer Active Sensors to Aircraft Structural Health Monitoring, Damage Detection, and Failure Prevention" Summer Faculty Fellowship at Wright Patterson Air Force Base, Dayton, OH, \$13,600 for 2 months, V. Giurgiutiu (PI), Summer 2002, National Research Council/US Air Force Office of Scientific Research
53. Research Experience for Teachers - Supplemental Funding Request, \$10,000 for 12 months, Victor Giurgiutiu (PI), Dr. George Gradinaru from Columbia High School, April 2002, NSF
54. "Cost and Effectiveness Analysis of the AH64A/UH60L on Board Vibrations Monitoring (VM) System for SC Army National Guard – Year IV", \$155,000 for 12 months, V. Giurgiutiu (PI), W. Ranson (co-PI), A. E. Bayoumi (co-PI), J. Vargas (co-PI), January 2002, DOD through South Carolina National Guard
55. "Microcontroller/Mechatronics Education of Non-EE Students at the University of South Carolina", \$71,000 for 24 months, V. Giurgiutiu (PI), D. Rocheleau (Co-PI), J. Lyons (Co-PI), NSF-DUE #0126966, January 2002
56. "Mechanical Diagnostics and Prognostics Based on Accelerated Test Data and In-flight Recordings – Phase II", \$60,000 for 9 months, V. Giurgiutiu (PI), A. E. Bayoumi (co-PI), June 2001, FAA through Goodrich Aerospace
57. "Cost and Effectiveness Analysis of the AH64A/UH60L Onboard Vibrations Monitoring (VM) System for SC Army National Guard – Year III", \$360,302 for 12 months, V. Giurgiutiu (PI), W. Ranson (co-PI), A. E. Bayoumi (co-PI), J. Vargas (co-PI), J. Lynch (co-PI), J. Grego (co-PI), W. Drane (co-PI), November 22, 2000, DOD through South Carolina National Guard
58. "Smart Fin for Missile Control – Supplemental Work", \$12,683 over 24 months, November 13, 2000, Analysis and Design Consultants (ADC), Ltd., V. Giurgiutiu (PI)
59. "Mechanical Diagnostics and Prognostics Based on Accelerated Test Data and In-flight Recordings", \$90,000 for 9 months, V. Giurgiutiu (PI), A. E. Bayoumi (co-PI), October 2000, FAA through Goodrich Aerospace
60. "The Use of Electromechanical Impedance Techniques for Assessing the Integrity of Riveted Lap Joints Typical of Aircraft Structures -- Year III: 10/1/00-9/30/01", \$25,000 for 12 months, V. Giurgiutiu (PI), October 5, 2000, DOE through Sandia National Laboratory

61. "Field-Portable NDE Equipment Concepts for Tagged Smart Composite Applications – Supplementary Work", \$15,000 for 12 months, V. Giurgiutiu (PI), September 29, 2000, DOD US Army Corps of Engineers CERL
62. "Active Sensors for Health Monitoring of Rotating Machinery", \$14,000 for 2 years, V. Giurgiutiu (PI) Leonid M. Gelman (co-PI), August 3, 2000, NAS-NRC (OCEE)
63. "Seed funds for the Development of a Research Cluster for Measuring and Modeling of Nano Materials and Electronic Components", \$25,000, Stephen McNeill (PI), Michael Sutton (co-PI), Timir Datta (co-PI), V. Giurgiutiu (co-PI) June 16, 2000, NASA Space Grant Consortium
64. "Smart-Materials Actuated Missile Flight Control Surface Feasibility Study", \$20,000 for 1/2 year, February 2000, DOD Army Research Office (ARO)
65. "The use of Electromechanical Impedance Techniques for Assessing the Integrity of Riveted Lap Joints Typical of Aircraft Structures -- Year II: 2/1/00-9/30/00", \$20,000 for 8 months, V. Giurgiutiu (PI), December 1999, DOE through Sandia National Laboratory
66. "Cost and Effectiveness Analysis of the AH64A/UH60L Onboard Vibrations Monitoring (VM) System for SC Army National Guard – Year II", \$319,884 for 12 months, V. Giurgiutiu (PI), W. Ranson (co-PI), A. E. Bayoumi (co-PI), J. Lynch (co-PI), J. Grego (co-PI), W. Drane (co-PI), November 22, 1999, DOD through South Carolina National Guard
67. "Smart Fin for Missile Control", \$12,652 over 12 months, V. Giurgiutiu (PI), October 27, 1999, Analysis and Design Consultants (ADC) Ltd.
68. "Durability of the Bond between Concrete and Fiber-Reinforced Polymer Composites", \$221,000 over 3 years, M. Petrou (PI), and K. A. Harries (co-PI), J. Lyons (co-PI), V. Giurgiutiu (co-PI), T. Papathanassiou (co-PI), NSF #CMS-9908293, March 31, 1999
69. "CECMT Center for Composites Technology at USC", \$15,000 for 1 year, V. Giurgiutiu (PI), A. E. Bayoumi (co-PI), January 1999, DOD Navy GLCC
70. "Smart Composite Materials for Monitoring Structural Damage" \$49,932 for 2 years, NSF proposal #NSF-INT-9904493, V. Giurgiutiu (PI), A. E. Bayoumi (co-PI), January 1999, NSF Division of International Programs
71. "Cost and Effectiveness Analysis of the AH64A/UH60L Onboard Vibrations Monitoring (VM) System for SC Army National Guard -- Year I", \$300,000 for 12 months, V. Giurgiutiu (PI), W. Ranson (co-PI), A. E. Bayoumi (co-PI), J. Lynch (co-PI), J. Grego (co-PI), W. Drane (co-PI), December 31, 1998, DOD through South Carolina National Guard
72. "The Use of Electromechanical Impedance Techniques for Assessing the Integrity of Riveted Lap Joints Typical of Aircraft Structures", \$20,000 for 12 months, V. Giurgiutiu (PI), December 1998, DOE through Sandia National Laboratory
73. "Review of Existing Work on 'Smart' Control Surfaces", \$12,365 over 12 months, November 11, 1998, V. Giurgiutiu (PI), Analysis and Design Consultants (ADC) Ltd.
74. "Field-Portable NDE Equipment Concepts for Tagged Smart Composite Applications", \$61,643 for 24 months, September 1998, V. Giurgiutiu (PI), DOD US Army Corps of Engineers CERL
75. "Development and Testing of Fiber Reinforced Composite Overlays", \$49,998 for 1 year, M. Petrou (PI), V. Giurgiutiu (co-PI), August 5, 1998, DOE-SCUREF
76. "Exploratory Assessment of AH64 VMEP Evaluation Needs for SC Army National Guard", \$29,995 for 6 months, V. Giurgiutiu (PI), W. Ranson (co-PI), July 27, 1998, DOD through South Carolina National Guard
77. "Project Exactly Delivery Device (PEDD)", \$100,000 for 6 months, D. Rocheleau (PI), V. Giurgiutiu (co-PI), May 25, 1998, Lockheed Martin Aircraft Center
78. "Techniques for Structural Health Monitoring Travel Award", \$600, Army Research Office, April 27-28, 1998, V. Giurgiutiu (PI), DOD ARO/ARL
79. "Application of Smart Materials Technology to APT Program", South Carolina EPSCoR Office, \$59,956 for 1 year, V. Giurgiutiu (PI), M. A. Sutton (co-PI), February 23, 1998, DOE-APT
80. Travel Award, \$200, February 19, 1998, V. Giurgiutiu (PI), South Carolina EPSCoR Office

81. "A South Carolina Consortium for Infrastructure Repair: Structural Repairs Using Fiber Reinforced Polymer (FRP) Composites", \$80,000 for 12 months, J. Lyons (PI), V. Giurgiutiu (co-PI), M. Petrou (co-PI), May 1997, USC Provost Office

4.4 GRADUATE STUDENTS ADVISED SINCE MOVING TO US

4.4.1 PhD Students (alphabetic listing)

Graduated PhD Students

1. ABDELRAHMAN KAMAL, Ayman, “Ultrasonic Transduction in Metallic and Composite Structures for Structural Health Monitoring using Extensional and Shear Horizontal Piezoelectric Wafer Active Sensors”, Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Summer 2014; currently employed** at MIRATECH Co., Tulsa, OK 74108
2. BAO, Jingjing (Jack), “Lamb Wave Generation and Detection with Piezoelectric Wafer Active Sensors”, Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Summer 2003; currently postdoc at USC**
3. BARAZANCHY, Darun, “Non-destructive Evaluation of Composites: Predictive Ultrasonic Guided-Wave Modeling, Non-destructive Material characterization, and the Application to Aerospace Structures”, University of South Carolina, Dept. of Mechanical Engineering, **graduated Fall 2017; currently postdoc in McNair Aerospace Center, University of South Carolina**, Columbia, SC 29208
4. BHUIYAN, Md Yeasin, “Physics-based Approaches for Structural Health Monitoring and Nondestructive Evaluation with Ultrasonic Guided Waves”, University of South Carolina, Dept. of Mechanical Engineering, **graduated Spring 2018, currently postdoc at USC, LAMSS**
5. CUC, Adrian, "Structural Health Monitoring of Adhesively Bonded Joints with Piezoelectric Wafer Active Sensors”, Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Summer 2010, currently employed** at Volvo 3P, Greensboro, NC, and Adjunct Assistant Professor at NC A&T State Univ., Mechanical Engr., Greensboro, NC
6. FRANKFORTER, Erik, “Fiber Optic Guided Wave Sensors for Structural Health Monitoring”, Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Fall 2017, currently employed at NASA Langley Research Center**, Langley, VA
7. KAMAS, Tuncay, “Fluid-Coupled Piezoelectric Wafer Active Sensors” (provisional title) , Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Fall 2014; currently tenure-track Assistant Professor at Osmangazi University**, Turkey
8. LIN, Bin, “Power and energy transduction in piezoelectric wafer active sensors for structural health monitoring: modeling and applications”, Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Spring 2010; currently Post doc at USC**
9. PODDAR, Banibrata, “Physics Based Modeling of Guided Waves for Detection and Characterization of Structural Damage in NDE and SHM”, Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Summer 2016; currently employed** at Intelligent Automation Inc., Rockville, MD
10. POMIRLEANU, Radu, "Flow-induced Vibrations of Nuclear Reactor Tubes", Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Spring 2006; currently Senior Scientist at Westinghouse Corporate Research Center in Pittsburgh, PA**
11. ROMAN, Catalin, “Structural Health Monitoring of Composite Laminates Using Piezoelectric and Fiber Optics Sensors”, Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Spring 2013, currently Mechanical Design Engineer, Princeton Plasma Physics, Princeton, NJ**
12. ROTH, William, “Nondestructive Evaluation and Health Monitoring of Adhesively Bonded Composite Structures”, Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Summer 2017 currently employed in Greenville, SC**
13. SANTONI-BOTTAI, Giola, “Fundamental Studies in the Lamb-Wave Interaction between Piezoelectric Wafer Active Sensor and Host Structure During Structure Health Monitoring”,

- Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Spring 2010; currently at University of Stockholm, Sweden**
14. SHEN, Yanfeng, “Structural Health Monitoring using Linear and Nonlinear Ultrasonic Guided Waves”, Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Summer 2014, currently tenure-track Assistant Professor, University of Michigan - Shanghai Jiao Tong University Joint Institute**, Shanghai, China
 15. XU, Buli, “Structural Health Monitoring Instrumentation, Signal Processing and Interpretation With Piezoelectric Wafer Active Sensors”, Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Spring 2009; currently Electrical Engineer with KEMET Electronics Corp., in Greenville, SC**
 16. YU, Lingyu (Lucy), " In-Situ Structural Health Monitoring with Piezoelectric Wafer Active Sensor Guided-Wave Phased Array”, Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Spring 2006; currently tenured Associate Professor at USC**
 17. ZAGRAI, Andrei, "Piezoelectric Wafer Active Sensors Electro-Mechanical Impedance Technique Structural Health Monitoring", Univ. of South Carolina, Dept. of Mechanical Engineering, **graduated Spring 2002; currently Full Professor and Chair of the Department of Mechanical Engineering at New Mexico Institute of Technology, Socorro, NM; recipient of the Achenbach Medal 2011.**

Current PhD Students

18. FAISAL HAIDER, Mohammad, “Temperature and Radiation Effects in Piezoelectric Materials” (provisional title), Univ. of South Carolina, Dept. of Mechanical Engineering, Fall 2015-present
19. JAMES, Robin, “Structural Health Monitoring and Nondestructive Evaluation of Composite Joints” (provisional title), Fall 2017-present
20. JOSEPH, Roshan, “Structural Health Monitoring of Nuclear Facilities” (provisional title), Univ. of South Carolina, Dept. of Mechanical Engineering, Fall 2015-present
21. MEI, Hanfei, “Structural Health Monitoring of Aerospace Composites with Piezoelectric Wafer Active Sensors (provisional title) Spring 2016-present.
22. MITCHELL, Robert, “Acoustic Emission Structural Health Monitoring and Nondestructive Evaluation (provisional title)”, Spring 2016-present (APOGEE).
23. MIGOT, Asaad, “Structural Health Monitoring of Aerospace Composite Structures” (provisional title), University of South Carolina, Dept. of Mechanical Engineering, Fall 2014-present

Interrupted PhD Students

- LIU, Weiping, “Mechatronics Aspects of Structural Health Monitoring with Piezoelectric Wafer Active Sensors” (provisional title), Univ. of South Carolina, Dept. of Mechanical Engineering, Fall 2003-Fall 2010 (interrupted)
- ZOUHRI, Khalid, “Structural Health Monitoring” (provisional title), Univ. of South Carolina, Dept. of Mechanical Engineering, APOGEE, Fall 2012-Spring 2013 (interrupted)

4.4.2 Master's Students (alphabetic listing)

Graduated Master's Students

1. BHUIYAN, Md. Yeasin, "Guided Wave Inspection of Crack in the Rivet Hole of an Aerospace Lap Joint Using Analytical-FEM Approach", Univ. of South Carolina, Dept. of Mechanical Engineering, **MS completed Fall 2016**, currently USC ME PhD student
2. BOLES, Travis, APOGEE Master of Engineering, Univ. of South Carolina, Dept. of Mechanical Engineering, **ME completed Spring 2013**, currently employed by the US Navy.
3. CUC, Adrian, "Vibrations-Based Techniques for Damage Detection and Health Monitoring of Mechanical Systems", Univ. of South Carolina, Dept. of Mechanical Engineering, **MS completed Spring 2002**, currently employed at Volvo 3P, Greensboro, NC, and Adjunct Assistant Professor at NC A&T State Univ., Mechanical Engr., Greensboro, NC
4. DOANE, James, "Behavior of Piezoelectric Wafer Active Sensors Under Large Strain and Fatigue Loading Conditions", Univ. of South Carolina, Dept. of Mechanical Engineering, **MS completed Fall 2004**, currently **Associate Professor and Chair of the Department of Engineering**, University of Jamestown, ND 58405
5. GRAFFEO, Jeffrey, "Mathematical Modeling of an Adhesive Layer Crack Utilizing Integral Equation Methods", Dept. of Engineering Science and Mechanics, Virginia Polytechnic Institute and State Univ., **MS completed Summer 1995**
6. JENKINS, Christopher, "PWAS Tuning on Thick Structures and the Ability of PWAS to Detect Crack Growth on a Thin Fatiguing Plate", Univ. of South Carolina, Dept. of Mechanical Engineering, **MS completed Fall 2004**, currently employed at Spirax Sarco in Columbia, SC
7. JICHI, Florin, "Theoretical and Experimental Investigation of Magnetostrictive Tagged Composite Beams", Univ. of South Carolina, Dept. of Mech. Engineering, **MS completed Fall 2000**
8. MOHAMMED, Saad, "NDT and SHM of Damage Detection in Welded Structures", Univ. of South Carolina, Dept. of Mechanical Engineering, **MS completed Fall 2016**, employed in Iraq.
9. POLLOCK, Patrick, "Composites Structural Health Monitoring with Piezoelectric Wafer Active Sensors", **MS completed Spring 2011**, currently employed in industry at Acellent Technologies, Inc., Palo Alto, CA
10. POMIRLEANU, Radu, "Induced Strain Actuators for Smart Structures Applications", Univ. of South Carolina, Dept. of Mechanical Engineering, **MS completed Summer 2001**

Current Master's Students

Interrupted Master's Students

- CRACHIOLO, Gregory, "Piezoelectric Wafer Active Sensors for Biomedical Applications" (provisional title) (interrupted), Univ. of South Carolina, Dept. of Mechanical Engineering, Fall 2004-Spring 2008 (interrupted)
- NALL, Greg, "Mechatronics Applications of Active Materials Sensors and Actuators", Fall 1998-Fall 2000 (interrupted)

4.4.3 Visiting Scholars (recent years)

- BAGHALIAN, Amin, Florida International University, Miami, FL 33199, Visiting Student at USC LAMSS, February 2017
- CALOMFIRESU, Mircea: Faser FIBRE Institute, Bremen, Germany, Visiting Scholar at USC LAMSS, Feb-April 2007 – **own funding**
- ENCIU, Daniela, INCAS, Bucharest, Romania, Visiting Student at USC LAMSS, Fall 2014
- FAN, Jinbiao: North University of China, Visiting Associate Professor, Feb. 2016 – Feb. 2017, **own funding**
- GIULIANI, David: Institute of Engineering Sciences of Toulon and the Var – ISITV, France, Visiting Student at USC LAMSS, June-Aug. 2013 – **own funding**
- GLUSHKOV, Evgeny and GLUSHKOVA, Natalia: Professors, Institute for Mathematics, Mechanics, and Informatics, Kuban State University, Russia, Visiting Professors at USC LAMSS, Feb-April 2013
- HELFEN, Thomas: Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren, Saarbrücken, Germany, Visiting Scholar at USC LAMSS, Nov.-Dec. 2012
- HODZIC, Alma: University of Sheffield, UK, Visiting Professor under the auspices of the USC Institute for Visiting Scholars, Nov. 2013
- LIESKE, Uwe: Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren, Dresden, Germany, Visiting Scholar at USC LAMSS, March-April 2013
- LI, Xiao: Associate Professor, Wuhan University, China, China Scholarship Council Fellow, Visiting Professor at USC LAMSS, Aug. 2011-July 2012 – **own funding**
- OLLMANN, Henrik: University of Saarland, Saarbrücken, Germany, Visiting Student at USC LAMSS, Nov.-Dec. 2012
- SERRANO, Marina: Institut des Sciences de l'Ingénieur de Toulon et du Var, France, Visiting Student at USC LAMSS, June-Aug. 2012 – **own funding**
- SOUTIS, Constantinos: University of Manchester, UK, Visiting Professor under the auspices of the USC Institute for Visiting Scholars, Oct. 2013, March 2014, Sept. 2014
- TANCREDI, Simone: Università degli Studi di Napoli "Federico II", DIAS - Dipartimento di Ingegneria Aerospaziale, Napoli, Italy, Visiting Scholar at USC LAMSS, April-June 2011 – **own funding**
- ZENG, Liang: Xi'an Jiaotong University, China, Visiting Assistant Professor, September 2015 – August 2016 – **own funding**

4.4.4 Underrepresented Minority Students

Female engineering students

1. Megan COONEY, Fall 2015-Spring 2017, UG
2. Nicole RANKIN, Fall 2014-Spring 2015, UG
3. Ashley VALOVCIN, 2014, UG
4. Daniela ENCIU, Fall 2014, visiting graduate student
5. Miranda Nicole DUNCAN, 2012-2014, UG
6. Marina SERRANO, summer 2012, visiting UG
7. Giola SANTONI-BOTTAL, PhD graduated Spring 2010
8. Lingyu (Lucy) YU, PhD graduated Spring 2006
9. Amanda BLACK, 2003-2004, UG
10. Shannon WHITLEY, 1998, UG
11. Anita BHALLA, 1997-1998
12. Dorothy LAUB, 1997-1998
13. Anita AJWANI, 1993-1994, MS completed Fall 1994

African-American engineering students

1. Dennis Malik THOMPSON, 2014-current.
2. Christopher JENKINS, 2003-2004, MS completed Fall 2004
3. Michael BOONE, 2003, UG

4. Christopher JENKINS, 1999-2002, UG
5. Reginald NESBITT, 1999-2001, UG
6. Andre Gibson, summer 2000, UG

Pacific Islander American engineering students

1. Miranda Nicole DUNCAN, 2012-2014, UG

4.4.5 Postdoctoral Fellows

1. JingJing (Jack) Bao, 2009-present
2. Bin Lin, 2010-present

4.5 PUBLICATIONS



4.5.1 Books

- B8 Giurgiutiu, V. (2016) *Structural Health Monitoring of Aerospace Composites*, Elsevier Academic Press, 480 pages, ISBN 9780124096059, 2016 <http://store.elsevier.com/Structural-Health-Monitoring-of-Aerospace-Composites/Victor-Giurgiutiu/isbn-9780124096059/>
- B7 Giurgiutiu, V. (2014) *Structural Health Monitoring with Piezoelectric Wafer Active Sensors*, 2nd Edition, Elsevier Academic Press, 1032 pages, ISBN 9780124186910, 2014 <http://store.elsevier.com/product.jsp?isbn=9780124186910>
- B6 Giurgiutiu, V.; Lyshevski, S. E. (2009) *Micromechatronics: Modeling, Analysis, and Design with MATLAB*, 2nd Edition, Taylor & Francis CRC Press, ~900 pages, ISBN 978-1420065626, 2009 http://www.amazon.com/Micromechatronics-Modeling-Analysis-Design-MATLAB/dp/1420065629/ref=sr_1_3?ie=UTF8&s=books&qid=1218545440&sr=1-3
- B5 Giurgiutiu, V. (2008) *Structural Health Monitoring with Piezoelectric Wafer Active Sensors*, Elsevier Academic Press, 760 pages, ISBN 978-0120887606, 2008, http://www.amazon.com/Structural-Health-Monitoring-Piezoelectric-Sensors/dp/0120887606/ref=sr_1_1?ie=UTF8&s=books&qid=1218545440&sr=1-1
- B4 Zerbst, U.; Giurgiutiu, V.; Fahy, F. J.; Yang, B.; Ravi-Chandar, K. (2008) “Structures and Fracture eBook Collection”, Elsevier Academic Press, CD-ROM, ISBN 978-0123746375, 2008 http://www.amazon.com/Structures-Fracture-ebook-Collection-Ultimate/dp/012374637X/ref=sr_1_2?ie=UTF8&s=books&qid=1218543537&sr=1-2
- B3 Giurgiutiu, V.; Lyshevski, S. E. (2004) *Micromechatronics: Modeling, Analysis, and Design with MATLAB*, CRC Press, 856 pages, ISBN 084931593X, 2004 http://www.amazon.com/Micromechatronics-Modeling-Microscience-Engineering-Technology/dp/084931593X/ref=sr_1_4?ie=UTF8&s=books&qid=1218545440&sr=1-4
- B2 Vasiliev, G.; Giurgiutiu, V. (1990) *Stability of Aeronautical Structures* (in Romanian), ISBN 973-31-0126-5, Technical Press, Bucharest, Romania, 213 pages, 1990
- B1 Giurgiutiu, V. (1982) *Elements of Helicopter Aeroelasticity - Blade Studies* (in Romanian), Technical Press, Bucharest, Romania, 282 pages, 1982

4.5.2 Book Chapters

- BC17 Giurgiutiu, V. (2018) “Smart Materials and Health Monitoring of Composites”, Chapter 7.19 in Beaumont, P.W.R. and Zweben, C.H. (eds.), *Comprehensive Composite Materials II*. vol. 7, pp. 364–381. Oxford: Academic Press, Elsevier.

- BC16 Giurgiutiu, V (2014) “Structural Health Monitoring of Aerospace Composites”, Chapter 16, pp. 448–507, in *Polymer Composites in the Aerospace Industry*, P E Irving and C Soutis (Eds.), Elsevier -- Woodhead Pub., UK, ISBN 9780857095237, June 2014
- BC15 Bossi, R H; Giurgiutiu, V (2014) “Nondestructive Testing of Damage in Aerospace Composites” Chapter 15, pp. 413-449, in *Polymer Composites in the Aerospace Industry*, P E Irving and C Soutis (Eds.), Elsevier -- Woodhead Pub., UK, ISBN 9780857095237, June 2014
- BC14 Giurgiutiu, V (2013) “Predictive Modeling of Smart Structures with In-situ Sensing Capabilities” in *New Trends in Smart Technologies*, C. Boller and H. Janocha (Eds.), Fraunhofer Verlag, Stuttgart, Germany, ISBN 978-3-8396-0577-6, pp. 1-9
- BC13 Giurgiutiu, V. (2011) “Active Materials and Smart Structures’ in *McGraw-Hill Yearbook of Science and Technology 2011*, McGraw-Hill, NY, ISBN 978-007-176371-4, pp. 1-4
- BC12 Giurgiutiu, V.; Soutis, C. (2010) “Guided Wave Methods for Structural Health Monitoring”, chapter in *Encyclopedia of Aerospace Engineering*, R. Blockley and W. Shyy (Eds.), Wiley, Chichester, UK in collaboration with AIAA and RAeS, Vol. 3, Part 17, Ch. 166, pp. 1975-1994, ISBN 978-0—470-075440-5
http://www.amazon.com/Encyclopedia-Aerospace-Engineering-R-Blockley/dp/0470754400/ref=sr_1_1?ie=UTF8&qid=1292947754&sr=8-1
- BC11 Giurgiutiu, V. (2009) “Piezoelectricity Principles and Materials”, Chapter 52, pp. 1–11, in *Encyclopedia of Structural Health Monitoring*, Boller, C.; Chang, F-K ; Fujino Y. (Editors), Wiley, 2009, http://www.amazon.com/Encyclopedia-Structural-Health-Monitoring-Christian/dp/0470058226/ref=sr_1_1?ie=UTF8&s=books&qid=1269899882&sr=1-1
- BC10 Yu, L.; Giurgiutiu, V. (2009) “Piezoelectric Wafer Active Sensors”, Chapter 55, pp. 1-15, in *Encyclopedia of Structural Health Monitoring*, Boller, C.; Chang, F-K ; Fujino Y. (Editors), Wiley, 2009, http://www.amazon.com/Encyclopedia-Structural-Health-Monitoring-Christian/dp/0470058226/ref=sr_1_1?ie=UTF8&s=books&qid=1269899882&sr=1-1
- BC9 Zagrai, A. N.; Giurgiutiu, V (2009) “Electromechanical Impedance Modeling”, Chapter 5, pp. 1–19, in *Encyclopedia of Structural Health Monitoring*, Boller, C.; Chang, F-K ; Fujino Y. (Editors), Wiley, 2009, http://www.amazon.com/Encyclopedia-Structural-Health-Monitoring-Christian/dp/0470058226/ref=sr_1_1?ie=UTF8&s=books&qid=1269899882&sr=1-1
- BC8 Giurgiutiu, V. (2007) "Concepts of Adaptronic Structures" chapter in *Adaptronics and Smart Structures*, H. Janocha (Editor), 2nd Edition, Springer Verlag GmbH, 2007, pp. 9-28, http://www.amazon.com/Adaptronics-Smart-Structures-Materials-Applications/dp/3540719652/ref=sr_1_1?ie=UTF8&s=books&qid=1269899935&sr=1-1
- BC7 Giurgiutiu, V. (2007) “Embedded Ultrasonic NDE with Piezoelectric Wafer Active Sensors”, in *Advanced Ultrasonic Methods for Material and Structure Inspection*, T. Kundu (Editor), ISTA Pub. Ltd., London, UK, 2007, http://www.amazon.com/Ultrasonic-Structure-Inspection-Instrumentation-Measurement/dp/190520969X/ref=sr_1_1?ie=UTF8&s=books&qid=1269899981&sr=1-1
- BC6 Giurgiutiu, V.; Liu, W. (2006) “The Use of Functional Modules in the Mechatronics Education of non-Electrical Engineering Students”, Chapter 19 in *INNOVATIONS 2006 - World Innovations in Engineering Education and Research*, ISBN 0-9741252-5-3, Begell House Pub., pp. 233-246, http://www.ineer.org/iNEERpapers/INNOVATIONS_2006_Front-Materials_3.pdf
- BC5 Giurgiutiu, V.; Lyshevski, S. E. (2006) “Micromechatronics” in *Sensors, Nanoscience, Biomedical Engineering, and Instruments*, R. C. Dorf (Editor), The Electrical Engineering Handbook Series, CRC Press, Boca Raton, FL, Taylor and Francis Group, ISBN 0849373468, 2006, http://www.amazon.com/Sensors-Nanoscience-Biomedical-Engineering-Instruments/dp/0849373468/ref=sr_1_1?ie=UTF8&s=books&qid=1269900026&sr=1-1
- BC4 Giurgiutiu, V. (2005) “Mechatronics and Smart Structures Design Techniques for Intelligent Products, Processes, and Systems”, Chapter 8, Vol. 4 of *Intelligent Knowledge-Based Systems*, Cornelius T. Leondes (Ed.), Kluwer Academic Publishers, ISBN 1-40207-827-7, 2005, http://www.amazon.com/Intelligent-Knowledge-Based-Systems-Technology-Millennium/dp/1402077467/ref=sr_1_4?ie=UTF8&s=books&qid=1269900067&sr=1-4

- BC3 Giurgiutiu, V. (2001) "Actuators and Smart Structures" in *Encyclopedia of Vibrations*, S. G. Braun (Editor-in-Chief), ISBN 0-12-227085-1, Academic Press, 2001, pp. 58-81
- BC2 Rogers, C. A.; Giurgiutiu, V.; Leung, C. K. Y. (2000) "Smart Materials for Civil Engineering Applications", chapter in *Emerging Materials for Civil Infrastructure - State of the Art*, R. Lopez-Anido and T. R. Naik (Editors), ISBN 0-7844-0538-7, ASCE Press, 2000, pp. 1-40
- BC1 Rogers C. A.; Giurgiutiu, V. (1999) "Concepts of Adaptronic Structures" chapter in *Adaptronic and Smart Structures*, Hartmut Janocha (Editor), Springer Verlag GmbH, 1999, pp. 13-34

4.5.3 Journal Articles in Peer-Review Archival Journals¹

- J126 Faisal Haider, Md; Bhuiyan, Y; Poddar, B; Lin, B; Giurgiutiu, V (2018) "Analytical and experimental investigation of the interaction of Lamb waves in a stiffened aluminum plate with a horizontal crack at the root of the stiffener" *Journal of Sound and Vibration*, Vol. 231 (2018) pp 212-225, Sept. 2018, DOI: 10.1016/j.jsv.2018.06.018
- J125 Schubert Kabban, C; Uber, R; Lin, K; Lin, B; Bhuiyan, Md Y; Giurgiutiu, V (2018) "Uncertainty evaluation in the design of structural health monitoring systems for damage detection", *Aerospace* 2018, 5, 45; doi:10.3390/aerospace5020045, <http://www.mdpi.com/journal/aerospace>
- J124 Mei, H; Giurgiutiu, V (2018) "Guided wave excitation and propagation in damped composite plates", *Structural Health Monitoring – International Journal*, pp.1-25, <http://journals.sagepub.com/doi/10.1177/1475921718765955>
- J123 Mei, H; Giurgiutiu, V (2018) "Effect of structural damping on the tuning between piezoelectric wafer active sensors and Lamb waves", *Journal of Intelligent Material Systems and Structures*, pp. 1-15, <http://journals.sagepub.com/doi/abs/10.1177/1045389X18758188>
- J122 Faisal Haider, Md; Giurgiutiu, V (2018) "Analysis of axis symmetric circular crested elastic wave generated during crack propagation in a plate: A Helmholtz potential technique", *Int. Journal of Solids and Structures*, Vol. 134, pp.130-150
- J121 Barazanchy, D.; Roth, W.; Giurgiutiu, V. (2018) "A non-destructive material characterization framework for retrieving a stiffness matrix using bulk waves", *Composite Structures*, 185 (2018) 27-37, <https://doi.org/10.1016/j.compstruct.2017.10.071>
- J120 Bhuiyan, Md. Y.; Giurgiutiu, V. (2018) "The signatures of acoustic emission waveforms from fatigue crack advancing in thin metallic plates", *Smart Materials and Structures*, Vol. 27, No. 1, <https://doi.org/10.1088/1361-665X/aa9bc2>
- J119 Faisal Haider, Md.; Giurgiutiu, V. (2018) "A Helmholtz potential approach to the analysis of guided wave generation during acoustic emission events", *ASME Journal of Nondestructive Evaluation, Diagnostics, and Prognostics of Engineering Systems*, Vol. 1, No. 2, May 2018, 1(2):021002-021002-11, DOI: 10.1115/1.4038116, pp. 1-11
- J118 Bhuiyan, Md. Y.; Giurgiutiu, V. (2017) "Acoustic emission sensor effect and waveform evolution during fatigue crack growth in thin metallic plates", *Journal of Intelligent Material Systems and Structures*, DOI: 10.1177/1045389X17730930, pp. 1-10
- J117 Bhuiyan, Md. Y.; Giurgiutiu, V. (2017) "Multiphysics Simulation of Low-Amplitude Acoustic Wave Detection by Piezoelectric Wafer Active Sensors Validated by In-situ AE-Fatigue Experiment", *Materials*, 2017, 10, 962, doi: 10.3390/ma10080962, www.mdpi.com/journal/materials
- J116 Smithard, J.; Rajic, N.; Velden, S.; Norman, P.; Rosalie, C.; Galea, S.; Mei, H.; Lin, B.; Giurgiutiu, V. (2017) "An Advanced Multi-Sensor Acousto-Ultrasonic Structural Health Monitoring System: Development and Aerospace Demonstration" *Materials*, 2017, 10(7), 832; doi:10.3390/ma10070832

¹ The number of published papers and conference presentations in the period 1977-1989 does not properly reflect the research activity for that period, due to publication restrictions of the Romania government of the day. However the research activity in that period is reflected in the over 100 refereed reports written for the Aviation Research Institute in Bucharest, Romania.

- J115 Faisal Haider Md.; Giurgiutiu, V. (2017) “Irreversibility Effects in Piezoelectric Wafer Active Sensors after Exposure to High Temperature”, *Smart Materials and Structures*, Vol. 26, No. 9, 095019 (14 pp) 9 August 2017, <https://doi.org/10.1088/1361-665X/aa785f>, DOI: 10.1088/1361-665X/aa785f
- J114 Poddar, B.; Giurgiutiu, V. (2017) “Detectability of Crack Length from Acoustic Emissions Using Physics of Wave Propagation in Plate Structures”, *Journal of Nondestructive Evaluation*, Vol. 36:41, June 2017, DOI: 10.1007/s10921-017-0392-x
- J113 Bhuiyan, Md Y; Bao, J; Poddar, B.; Giurgiutiu, V. (2017) “Towards identifying crack-length-related resonances in acoustic emission waveforms for structural health monitoring applications”, *Structural Health Monitoring – International Journal*, DOI: 10.1177/1475921717707356, May 2017
- J112 Barazanchy, D; Giurgiutiu, V. (2017) “A comparative convergence and accuracy study of composite guided-ultrasonic wave solution methods: comparing the unified analytic method (UAM), SAFE method, and DISPERSE”, *Journal of Mechanical Engineering Science*, Sage Publications, March 2017, doi: 10.1177/0954406217700928
- J111 Bhuiyan, Md Y; Shen, Y; Giurgiutiu, V (2017) “Interaction of Lamb waves with rivet hole cracks from multiple directions”, *Proc IMechE Part C: J Mechanical Engineering Science*, DOI: 10.1177/0954406216686996, March 2017
- J110 Barazanchy, D; Giurgiutiu, V (2016) “A unified formulation for predictive modeling of guided-ultrasonic wave dispersion curves in metallic and composite materials” *Journal of Intelligent Material Systems and Structures*, Sept. 2016, doi: 10.1177/1045389X16667559
- J109 Poddar, B.; Giurgiutiu, V. (2016) “Complex modes expansion with vector projection using power flow to simulate Lamb waves scattering from horizontal cracks and disbonds”, *Journal of the Acoustical Society of America*, Vol. 140, No. 3, pp. 2123-2133, September 2016
- J108 Bhuiyan, M. Y.; Giurgiutiu, V. (2016) ‘Using the Gauge Condition to Simplify The Elastodynamic Analysis of Guided Wave Propagation’, *INCAS Bulletin*, Vol. 8, No. 3, pp 11-26, ISSN 2066-8201, http://bulletin.incas.ro/volume_8_issue_32016.html
- J107 Bhuiyan, M. Y.; Shen, Y.; Giurgiutiu, V. (2016) “Guided Wave Based Crack Detection in the Rivet Hole Using Global Analytical with Local FEM Approach”, *Materials*, 2016, Vol. 9, Issue 7, paper No. 602, doi:10.3390/ma9070602
- J106 Poddar, B.; Giurgiutiu, V. (2016) “Scattering of Lamb waves from a discontinuity: An improved analytical approach”, *Wave Motion*, Vol. 65 (2016), pp. 79-91
- J105 Shen, Y.; Giurgiutiu, V. (2016) “Combined analytical FEM approach for efficient simulation of Lamb wave damage detection”, *Ultrasonics*, Vol. 69, pp. 116-128
- J104 Frankforter, E.; Lin, B.; Giurgiutiu, V. (2016) “Characterization and optimization of an ultrasonic piezo-optical ring sensor”, *Smart Materials and Structures*, Volume 25, No. 4, April 2016, doi:10.1088/0964-1726/25/4/045006
- J103 Giurgiutiu, V.; Postolache, C; Tudose, M. (2016) “Radiation, temperature, and vacuum effects on piezoelectric wafer active sensors”, *Smart Materials and Structures*, Volume 25, No. 3, March 2016, 035024
- J102 Kamas, T.; Giurgiutiu, V.; Lin, B. (2015) “Thickness mode EMIS of constrained proof-mass piezoelectric wafer active sensors”, *Smart Materials and Structures*, Volume 24, Number 11, 115040
- J101 Kamas, T.; Giurgiutiu, V.; Lin, B. (2015) “E/M impedance modeling and experimentation for the piezoelectric wafer active sensor”, *Smart Materials and Structures*, Volume 24, Number 11, 115035
- J100 Shen, Y.; Giurgiutiu, V. (2015) “Effective non-reflective boundary for Lamb waves: theory, finite element implementation, and applications”, *Wave Motion*, Vol. 58, pp. 22-41
- J99 Glushkov, E.; Glushkova, N.; Eremin, A.; Giurgiutiu, V. (2015) “Low-cost simulation of guided wave propagation in notched plate-like structures”, *Journal of Sound and Vibration*, May 2015, Vol. 352, pp. 80-91
- J98 Giurgiutiu, V.; Roman, C.; Lin, B.; Frankforter, E. (2015) “Omnidirectional Piezo-optical Ring Sensor for Enhanced Guided Wave Structural Health Monitoring”, *Smart Materials and Structures*, Vol. 24, No. 1, #015008, January 2015, featured article <http://iopscience.iop.org/0964-1726/page/Cover%20gallery>

- J97 Lin, B.; Gresil, M.; Cuc, A.; Giurgiutiu, V. (2014) "Predictive Modeling of Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *Ferroelectrics*, 470:1, 168-182, DOI: 10.1080/00150193.2014.923251
- J96 Gresil, M.; Giurgiutiu, V. (2014) "Prediction of attenuated guided waves propagation in carbon fiber composites using Rayleigh damping", *Journal of Intelligent Material Systems and Structures*, online first 8 Sept. 2014, doi 1045389X14549870
- J95 Kamal, A.; Giurgiutiu, V. (2014) "Shear horizontal wave excitation and reception with shear horizontal piezoelectric wafer active sensor (SH-PWAS)" *Smart Materials and Structures*, Vol. 23, No. 8, (2014) 085019 (17 pp)
- J94 Shen, Y.; Giurgiutiu, V. (2014) "WaveFormRevealer: An analytical framework and predictive tool for the simulation of multi-modal guided wave propagation and interaction with damage" *Structural Health Monitoring – An International Journal*, Vol. 13, No. 5, pp. 491-511, online May 2014, doi: 10.1177/1475921714532986
- J93 Shen, Y.; Giurgiutiu, V. (2014) "Predictive Modeling of Nonlinear Wave Propagation for Structural Health Monitoring with Piezoelectric Wafer Active Sensors", *Journal of Intelligent Material Systems and Structures*, Aug. 2013 online DOI 10.1177/1045389X13500572, Jan 2014 in print Vol. 25, No. 4, pp. 506-520
- J92 Kamal, A. M.; Lin, B.; Giurgiutiu, V. (2014) "Exact Analytic Modeling of Power and Energy for Multimode Lamb Waves Excited by Piezoelectric Wafer Active Sensors", *Journal of Intelligent Material Systems and Structures*, Aug. 2013 online DOI: 10.1177/1045389X13498310, Jan. 2014 in print Vol. 25, No. 4, pp. 452-471
- J91 Gresil, M.; Giurgiutiu, V. (2013) "Guided Wave Propagation in Composite Laminates Using Piezoelectric Wafer Active Sensors", *Aeronautical Journal*, Oct. 2013, Vol. 117, No. 1196, pp. 971-995, Royal Aeronautical Society, London UK
- J90 Gresil, M.; Yu, L.; Shen, Y.; Giurgiutiu, V. (2013) "Predictive Model of Fatigue Crack Detection in Thick Bridge Steel Structures with Piezoelectric Wafer Active Sensors", *Smart Structures and Systems*, Vol. 12, No. 2, pp. 097-119
- J89 Gresil, M.; Giurgiutiu, V. (2013) "Time-Domain Global-Local Prediction of Guided Waves Interaction with Damage", *Key Engineering Materials*, Vol. 558 (2013), pp. 116-127
- J88 Gresil, M.; Giurgiutiu, V. (2013) "Time-Domain Hybrid Global-Local Concept for Guided-Wave Propagation with Piezoelectric Wafer Active Sensors", *Journal of Intelligent Material Systems and Structures*, Vol. 24, No. 15, pp. 1897-1911, 2013, doi: 10.1177/1045389x13486712
- J87 Yu, L.; Giurgiutiu, V. (2012) "Piezoelectric Wafer Active Sensors in Lamb Wave Based Structural Health Monitoring", *Journal of Materials*, Springer, Vol. 64, No. 7, pp. 814-822
- J86 Santoni-Bottai, G.; Giurgiutiu, V. (2012) "Exact Shear-lag Solution for Guided Waves Tuning with Piezoelectric Wafer Active Sensors", *AIAA Journal*, Vol. 50, No. 11, Nov. 2012, pp. 2285-2294
- J85 Giurgiutiu, V. (2012) "Introduction to Structural Health Monitoring with Piezoelectric Wafer Active Sensors", *Welding and Material Testing*, ISSN 1453-0392, year XXI, No. 2, 2012, pp. 15-20
- J84 Gresil, M.; Yu, L.; Giurgiutiu, V.; Sutton, M. (2012) "Predictive Modeling of Electromechanical Impedance Spectroscopy for Composite Materials", *Structural Health Monitoring – an International Journal*, Vol. 11, No. 6, pp. 671-683
- J83 Santoni-Bottai, G.; Giurgiutiu, V. (2012) "Damage Detection at Cryogenic Temperatures in Composites using Piezoelectric Wafer Active Sensors", *Structural Health Monitoring – an International Journal*, Vol. 11, online first 28 June 2012, doi:10.1177/1475921712442441
- J82 Giurgiutiu, V.; Gresil, M.; Lin, B.; Cuc, A.; Shen, Y.; Roman, C. (2012) "Predictive Modeling of Piezoelectric Wafer Active Sensors Interaction with High-frequency Structural Waves and Vibration" *Acta Mechanica*, March 2012, No. 223, pp. 1681-1691, online first 10.1007/s00707-012-0633-0
- J81 Giurgiutiu, V.; Soutis, C. (2012) "Enhanced Composite Integrity through Structural Health Monitoring", *Applied Composite Materials*, February 2012, online first DOI 10.1007/s10443-011-9247-2
- J80 Yu, L.; Giurgiutiu, V.; Wang, J.; Shin, Y.-J. (2012) "Corrosion Detection with Piezoelectric Wafer Active Sensors using Pitch-Catch Waves and Cross Time-Frequency Analysis", *Structural Health Monitoring – an International Journal*, Vol. 11, No. 1, pp. 83-89, Jan 2012

- J79 Yu, L.; Momeni, S.; Godinez, V.; Giurgiutiu, V.; Ziehl, P.; Yu, J. (2012) "Dual Mode Sensing with Low-Profile Piezoelectric Thin Wafer Sensors for Steel Bridge Crack Detection and Diagnosis", *Advances in Civil Engineering*, Vol. 2012, Article ID 402179, 2012, doi:10.1155/2012/402179
- J78 Lin, B.; Giurgiutiu, V. (2012) "Power and Energy Transduction Analysis of Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *Structural Health Monitoring – an International Journal*, Vol. 11, No. 1, pp. 109-121, Jan 2012
- J77 Giurgiutiu, V.; Santoni-Bottai, G. (2011) "Structural Health Monitoring of Composite Structures with Piezoelectric Wafer Active Sensors", *AIAA Journal*, Vol. 49, No. 3, pp. 565-581, March 2011
- J76 Giurgiutiu, V.; Lin, B.; Santoni-Bottai, G.; Cuc, A. (2011) "Space Application of Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *Journal of Intelligent Material Systems and Structures*, Vol. 22, No. 8, pp. 1359-1370, August 2011
- J75 Giurgiutiu, V. (2011) "Piezoelectric Wafer Active Sensors for Structural Health Monitoring of Composite Structures Using Tuned Guided Waves", *J. Eng. Mater. Technol.*, Vol. 133, No. 4, pp. 041012.1-6, Oct. 2011 (6 pages)
- J74 Yu, L.; Bottai-Santoni, G.; Giurgiutiu, V. (2010) "Shear Lag Solution for Tuning Ultrasonic Piezoelectric Wafer Active Sensors with Applications to Lamb Wave Array Imaging", *International Journal of Engineering Science*, Vol. 48, Issue 10, pp. 848-861, Oct. 2010
- J73 Lin, B.; Giurgiutiu, V.; Pollock, P.; Xu, B.; Doane, J.; (2010) "Durability and Survivability of Piezoelectric Wafer Active Sensors on Metallic Structures", *AIAA Journal*, Vol. 48, No. 3, pp. 635-643, March 2010
- J72 He, J.; Jiang, J. C.; Liu, J.; Collins, G.; Chen, C. L.; Lin, B.; Giurgiutiu, V.; Guo, R. Y.; Bhalla, A.; Meletis, E. I. (2010) "Ferroelectric BaTiO₃ Thin Films on Ti Substrate Fabricated Using Pulsed-Laser Deposition", *Journal of Nanoscience and Nanotechnology*, Vol. 10, No. 9, pp. 6245-6250, 2010. doi: DOI 10.1166/jnn.2010.2567
- J71 Giurgiutiu, V.; Xu, B., Liu, W., (2010) "Development and Testing of High-Temperature Piezoelectric Wafer Active Sensors for Extreme Environments", *Structural Health Monitoring – an International Journal*, Vol. 9, No. 6, pp. 513-525, 2010
- J70 Giurgiutiu, V. (2010) "Structural Health Monitoring with Piezoelectric Wafer Active Sensors – Predictive Modeling and Simulation", *INCAS Bulletin*, Vol. 2, No. 3, 2010, pp. 31-44, Sept. 2010
- J69 Giurgiutiu, V. (2010) "Damage Assessment of Structures – an US Air Force Office of Scientific Research Structural Mechanics Perspective", *Smart Structures and Systems*, Vol. 6, No. 2, pp. 135-146, March 2010
- J68 Yu, L.; Giurgiutiu, V. (2009) "Multi-Mode Damage Detection Methods with Piezoelectric Wafer Active Sensors", *Journal of Intelligent Material Systems and Structures*, Vol. 20, No. 11, July 2009, pp.1329-1341
- J67 Giurgiutiu, V.; Santoni-Bottai, G. (2009) "Extension of the Shear-Lag Solution for Structurally Attached Ultrasonic Active Sensors", *AIAA Journal*, Vol. 47, No. 8, pp. 1980-1983, Aug. 2009
- J66 Giurgiutiu, V. (2009) "Flight Structures Fundamental Research Trends and Directions" *Aeronautical Journal of RAeS*, Vol. 113, No. 1144, pp. 331-337, June 2009
- J65 Yu, L.; Santoni-Bottai, G.; Xu, B.; Liu, W.; Giurgiutiu, V., (2008) "Piezoelectric Wafer Active Sensors for In Situ Ultrasonic-Guided Wave SHM", *Journal of Fatigue & Fracture of Engineering Materials & Structures*, Vol.31, No. 8, pp.611-628, Aug. 2008
- J64 Yu, L.; Giurgiutiu, V. (2008) "In situ 2-D piezoelectric wafer active sensors arrays for guides wave damage detection", *Ultrasonics*, Vol. 48, No. 2, pp. 117-134, April 2008, Elsevier Press
- J63 Weaver, J.; Yuan, Z.; Liu, J.; Collins, G.; Chen, C. L.; Jiang, J. C.; He, J.; Meletis, E. I.; Guo, R. Y.; Bhalla, A.; Lin, B.; Giurgiutiu, V.; Cole, M. W. (2008) "Integration of Ferroelectric BaTiO₃ Thin Films Directly on Ni and Ti Metallic Tapes for Structural Health Monitoring Systems and Energy Harvesting Applications", *Integrated Ferroelectrics*, Vol. 100, pp. 61-71, 2008, doi: Pii 906862671, Doi 10.1080/10584580802540355
- J62 Jiang, J.C.; Meletis, E.I.; Yuan, Z.; Liu, J.; Chen, C. L.; Lin, B. Giurgiutiu, V.; Guo, R. Y.; Bhalla, A. S.; Liu, D.; White, K. W. (2008) "Orientation Preferred Structures in BaTiO₃ Thin Films on Ni Substrates" *Journal of Nano Research*, Vol. 1 (2008) pp. 59-63

- J61 Friedman, H. I.; Giurgiutiu, V.; Bender, J. W.; Crachiolo, G.; Yost, M. J. (2007) "A Biomechanical and Morphologic Analysis of Capsule Formation around Implanted PWAS sensors in Rats Treated with COX-2 Inhibitor", *Annals of Plastic Surgery*, Vol. 60, No. 2, pp. 198-203, 2007
- J60 Yuan, Z.; Liu, J.; Weaver, J.; Chen, C. L.; Jiang, J. C.; Lin, B.; Giurgiutiu, V.; Bhalla, A., Guo, R. Y. (2007) "Ferroelectric BaTiO₃ thin films on Ni metal tapes using NiO as buffer layer", *Applied Physics Letters*, vol. 90, p. 202901 (2007)
- J59. Yu, L.; Giurgiutiu, V. (2007) "In-situ Optimized PWAS Phased Arrays for Lamb Wave Structural Health Monitoring", *Journal of Mechanics of Materials and Structures*, Vol.2, No.3, pp. 459-488, 2007, <http://pjm.math.berkeley.edu/jomms/2007/2-3/p04.xhtml>
- J58. Xu, B.; Giurgiutiu, V. (2007) "Single Mode Tuning Effects on Lamb Wave Time Reversal with Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *Journal of Nondestructive Evaluation*, Vol. 26, No. 2-4, pp. 123-134, Dec. 2007, Springer Verlag
- J57. Santoni, G. B.; Yu, L.; Xu, B.; Giurgiutiu, V. (2007) "Lamb Wave Mode Tuning of Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *ASME Journal of Vibration and Acoustics*, Vol. 129, No. 6, pp. 752-762, Dec. 2007
- J56. Giurgiutiu, V.; Yu, L.; Kendall, J.; Jenkins, C. (2007) "In situ imaging of crack growth with piezoelectric wafer active sensors", *AIAA Journal*, Vol. 45, No. 11, pp. 2758-2769, Nov. 2007
- J55. Cuc, A.; Giurgiutiu, V.; Joshi, S.; Tidwell, Z. (2007) "Structural health monitoring with piezoelectric wafer active sensors for space applications", *AIAA Journal*, Vol. 45, No. 12, pp. 2838-2850, Dec. 2007
- J54 Nothwang, W. D.; Hirsch, S. G.; Demaree, J. D.; Hubbard, C. W.; Cole, M. W.; Lin, B.; Giurgiutiu, V. (2006) "Direct Integration of Thin Film Piezoelectric Sensors with Structural Materials for Structural Health Monitoring" *Integrated Ferroelectrics*, Vol. 83, pp. 139-148, doi: Doi 10.1080/10584580600950756
- J53. Matthews, L.; Giurgiutiu, V.; Sundaresan, V. B.; Leo, D. (2006) "Bioenergetic and Mechanical Actuation Analysis with Membrane Transport Experiments for Use in Biomimetic Nastic Structures", *Journal of Materials Research*, Vol. 21, No. 8, Aug. 2006
- J52. Lin, B.; Giurgiutiu, V. (2006) "Modeling and Testing of PZT and PVDF Piezoelectric Wafer Active Sensors", *Smart Materials and Structures*, Vol. 15, No. 4, pp. 1085-1093, Aug. 2006
- J51. Giurgiutiu, V.; Xu, B.; Chao, Y.; Liu, S.; Gaddam, R. (2006) "Smart Sensors for Monitoring Crack Growth under Fatigue Loading Conditions", *Smart Structures and Systems – an International Journal of Mechatronics, Sensors, Monitoring, Control, Diagnosis, and Maintenance*, Vol. 2, No. 2, pp. 101-113, April 2006, Techno-Press, R. o. Korea
- J50. Giurgiutiu, V. (2006) "Concept of Adaptronic Structures", *at-Automatisierungstechnik 2006*, Volume 54, Issue 6, pp. 251-258 (<http://www.at-automatisierungstechnik.de>)
- J49. Bender, J. W.; Friedman, H. I.; Giurgiutiu, V.; Watson, C.; Fitzmaurice, M. (2006) "The Use of Biomedical Sensors to Monitor Capsule Formation around Soft Tissue Implants", *Annals of Plastic Surgery*, Vol. 56, No. 1, pp. 72-77, Jan. 2006
- J48. Yu, L.; Giurgiutiu, V. (2005) "Advanced Signal Processing for Enhanced Damage Detection with Piezoelectric Wafer Active Sensors" *Smart Structures & Systems – an International Journal of Mechatronics, Sensors, Monitoring, Control, Diagnosis, and Maintenance*, Vol. 1, No. 2, pp. 185-215, April 2005, Techno-Press, R. o. Korea
- J47. Giurgiutiu V.; Zagrai, A. (2005) "Damage Detection in Thin Plates and Aerospace Structures with the Electro-Mechanical Impedance Method", *Structural Health Monitoring – an International Journal*, Sage Pub., Vol. 4, No. 2, pp. 99-118, June 2005 Ranked #2 among "Most-Cited Articles of Structural Health Monitoring, International Journal as of September 2010" <http://shm.sagepub.com/reports/most-cited>
- J46. Giurgiutiu, V.; Lyons, J.; Rocheleau, D.; Liu, W. (2005) "Mechatronics/Microcontroller Education for Mechanical Engineering Students at the University of South Carolina", *Mechatronics*, Pergamon Press, Vol. 15, No. 9, pp. 1025-1036, 2005
- J45. Giurgiutiu, V.; Cuc, A. (2005) "Embedded Nondestructive Evaluation for Structural Health Monitoring, Damage Detection, and Failure Prevention", *Shock and Vibration Digest*, Sage Pub., Vol. 37, No. 2, pp. 83-105, March 2005

- J44. Giurgiutiu, V. (2005) "Tuned Lamb-Wave Excitation and Detection with Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *Journal of Intelligent Material Systems and Structures*, Vol. 16, No. 4, pp. 291-306, April 2005
- J43. Gelman, L.; Giurgiutiu, V.; Bayoumi, A. (2005) "Statistical Analysis of the Dynamic Mean Excitation for a Spur Gear", *ASME Journal of Vibration and Acoustics*, Vol. 127, No. 2, pp. 204-207, April 2005
- J42. Pomirleanu, R.; Giurgiutiu, V. (2004) "High-Field Characterization of Piezoelectric and Magnetostrictive Actuators", *Journal of Intelligent Material Systems and Structures*, Sage Pub, Vol. 15, No. 3, pp. 161-180, March 2004
- J41. Giurgiutiu, V.; Zagrai, A.; Bao, J. (2004) "Damage Identification in Aging Aircraft Structures with Piezoelectric Wafer Active Sensors", *Journal of Intelligent Material Systems and Structures*, Sage Pub., Vol. 15, No. 6, pp. 673-687, Sept-Oct. 2004
- J40. Giurgiutiu, V.; Friedman, H.; Bender, J.; Borg, T.; Yost, M. J.; Newcomb, W.; Black, A.; Bost, J.; Stewart, C. D. (2004) "Electromechanical Impedance Sensor for In-Vivo Monitoring the Body Reaction to Implants", *Journal of Investigative Surgery*, Vol. 17, No. 5, pp. 257-270, Sept-Oct. 2004
- J39. Giurgiutiu, V.; Bao, J. (2004) "Embedded-Ultrasonics Structural Radar for In-Situ Structural Health Monitoring of Thin-Wall Structures", *Structural Health Monitoring – an International Journal*, Vol. 3, Number 2, pp. 121-140, June 2004
- J38. Gelman, L.; Giurgiutiu, V.; Petrunin, I. (2004) "Advantage of Using the Fourier Components Pair instead of Power Spectral Density for Fatigue Crack Detection", *International Journal of Condition Monitoring and Diagnostics Engineering Management*, UK, Vol. 7, No. 2, pp. 23-32, April 2004
- J37. Giurgiutiu, V.; Zagrai, A. N.; Bao J.; Redmond, J.; Roach, D.; Rackow, K. (2003) "Active Sensors for Health Monitoring of Aging Aerospace Structures", *International Journal of the Condition Monitoring and Diagnostic Engineering Management*, UK, Vol. 6, No. 1, pp. 3-21, Jan. 2003
- J36. Giurgiutiu, V.; Harries, K.; Petrou, M.; Bost, J.; Quattlebaum, J. B. (2003) "Disbond Detection with Piezoelectric Wafer Active Sensors in RC Structures Strengthened with FRP Composite Overlays", *Earthquake Engineering and Engineering Vibration*, Vol. 2, No. 2, pp. 213-224, Dec. 2003
- J35. Giurgiutiu, V.; Bao, J.; Zhao, W. (2003) "Piezoelectric-Wafer Active-Sensor Embedded Ultrasonics in Beams and Plates", *Experimental Mechanics*, Vol. 43, No. 4, pp. 428-449, Dec. 2003, Sage Pub.
- J34. Giurgiutiu, V. (2003) "Embedded NDE with Piezoelectric Wafer Active Sensors in Aerospace Applications", *Journal of Materials (JOM) – Special Online Issue on NDE*, January 2003, <http://www.tms.org/pubs/journals/JOM/0301/Giurgiutiu/Giurgiutiu-0301.html>
- J33. Giurgiutiu, V. (2003) "Embedded Ultrasonics NDE with Piezoelectric Wafer Active Sensors", *Journal Instrumentation, Mesure, Metrologie*, RS series 12M, Vol. 3, No. 3-4, pp. 149-180, 2003, Lavoisier Pub., Paris, France
- J32. Giurgiutiu, V.; Zagrai, A. N.; Bao, J. (2002) "Embedded Active Sensors for In-Situ Structural Health Monitoring of Thin-Wall Structures", *ASME Journal of Pressure Vessel Technology*, Vol. 124, No. 3, pp. 293-302, Aug. 2002
- J31. Lyons, J.; Laub, D.; Giurgiutiu, V.; Petrou, M.; Salem, H. (2002) "Effect of Hygrothermal Aging on the Fracture of Composite Overlays on Concrete", *Journal of Reinforced Plastics and Composites*, Vol. 21, No. 4, pp. 293-309, 2002, Sage Pub.
- J30. Giurgiutiu, V.; Zagrai, A. N.; Bao, J. (2002) "Piezoelectric Wafer Embedded Active Sensors for Aging Aircraft Structural Health Monitoring", *Structural Health Monitoring – an International Journal*, Vol. 1, No. 1, pp. 41-6, July 2002, Sage Pub.
- J29. Giurgiutiu, V.; Zagrai, A. N. (2002) "Embedded Self-Sensing Piezoelectric Active Sensors for Online Structural Identification", *ASME Journal of Vibration and Acoustics*, Vol. 124, pp. 116-125, Jan. 2002
- J28. Pomirleanu, R.; Giurgiutiu, V. (2002) "Full Stroke Static and Dynamic Analysis of High-Power Piezoelectric Actuators", *Journal of Intelligent Material Systems and Structures*, Vol. 13, No. 5, May 2002
- J27. Giurgiutiu, V.; Bayoumi, A. E.; Nall, G. (2002) "Mechatronics and Smart Structures: Emerging Engineering Disciplines of the New Millennium", *Journal of Mechatronics*, Pergamon Press, UK, Vol. 12, No. 2, pp. 169-181, March 2002

- J26. Zagrai, A.; Giurgiutiu, V. (2001) "Electro-Mechanical Impedance Method for Crack Detection in Thin Plates", *Journal of Intelligent Material Systems and Structures*, Vol. 12, No. 10, pp. 709-718, Oct. 2001
- J25. Giurgiutiu, V.; Lyons, J.; Petrou, M.; Laub, D.; Whitley, S. (2001) "Fracture Mechanics Testing of the Bond between Composite Overlays and Concrete Substrate", *Journal of Adhesive Science and Technology*, Vol. 15, No. 11, pp. 1351-1371, 2001, VSP International Science Pub., The Netherlands
- J24. Giurgiutiu, V.; Jichi, F.; Berman, J.; Kamphaus, J. (2001) "Theoretical and Experimental Investigation of Magnetostrictive Composite Beams", *Smart Materials and Structures*, IOP Publishers, UK, Vol. 10, No. 5, pp. 934-945, Oct. 2001
- J23. Giurgiutiu, V.; Grant, L.; Grabill, P.; Wroblewski, D. (2001) "Helicopter Health Monitoring and Failure Prevention through Vibration Monitoring Enhancement Program", *International Journal of Condition Monitoring and Diagnostic Engineering Management*, UK, 2001 Vol. 4, No. 4, pp. 33-40, 2001
- J22. Giurgiutiu, V.; Zagrai, A. (2000) "Characterization of Piezoelectric Wafer Active Sensors", *Journal of Intelligent Material Systems and Structures*, Sage Pub., UK, Vol. 11, No. 12, pp. 959-976, Dec. 2000
- J21. Giurgiutiu, V. (2000) "Active-Materials Induced-Strain Actuation for Aeroelastic Vibration Control", *Shock and Vibration Digest*, Sage Pub., UK, Vol. 32, No. 5, pp. 355-368, Sept. 2000
- J20. Giurgiutiu, V. (2000) "Review of Smart Materials Actuation Solutions for Aeroelastic and Vibration Control", *Journal of Intelligent Material Systems and Structures*, Technomic Pub., USA, Vol. 11, No. 7, July 2000, pp. 525-544
- J19. Giurgiutiu, V.; Reynolds, A.; Rogers, C. A. (1999) "Experimental Investigation of E/M Impedance Health Monitoring of Spot-Welded Structural Joints", *Journal of Intelligent Material Systems and Structures*, Technomic Pub., USA, Vol. 10, No. 10, pp. 802-812, Oct. 1999
- J18. Giurgiutiu, V.; Ionita, A.; Dillard, D. A. (1998) "Details of the Integral Equation Method Applied to the Analysis of an Adhesive Layer Crack", *International Journal of Solids and Structures*, Pergamon Press, UK, Vol. 35, No. 11, pp. 1099-1130, Jan. 1998
- J17. Giurgiutiu, V.; Rogers, C.A.; and McNeil, S. (1997), "Static and Dynamic Testing of Large-Amplitude Rotary Induced-Strain (LARIS Mk 2) Actuator", *Journal of Intelligent Material Systems and Structures*, Technomic Pub. Co. Vol.8, pp. 502-512, April 1997
- J16. Giurgiutiu, V.; Rogers, C.A.; Chaudhry, Z. (1997) "Design of Displacement Amplified Induced Strain Actuators for Maximum Energy Output", *ASME Journal of Mechanical Design*, Vol. 119, No. 4, pp. 421-524, Dec. 1997
- J15. Giurgiutiu, V. and Rogers, C.A. (1997) "Large-Amplitude Rotary Induced-Strain (LARIS) Actuator", *Journal of Intelligent Material Systems and Structures*, Vol. 8, No. 1, pp.41-50, Jan. 1997, Technomic Pub. Co.
- J14. Giurgiutiu, V.; Rogers, C. A. (1997) "Power and Energy Characteristics of Solid-State Induced-Strain Actuators for Static and Dynamic Applications", *Journal of Intelligent Material Systems and Structures*, Vol. 8, No. 9, pp. 738-750, Sep. 1997
- J13. Giurgiutiu, V., Rogers, C.A., and Rusovici, R. (1996) "Solid-State Actuation of Rotor-Blade Servo-Flap for Active Vibration Control", *Journal of Intelligent Material Systems and Structures*, Vol. 7, No. 2, pp. 192-202, March 1996, Technomic Pub. Co.
- J12. Giurgiutiu, V., Chaudhry, Z. and Rogers, C.A. (1996) "Energy-Based Comparison of Solid-State Induced-Strain Actuators ", *Journal of Intelligent Material Systems and Structures*, Vol. 7, No. 1, pp. 4-14, January 1996, Technomic Pub. Co.
- J11. Giurgiutiu, V. and Rogers, C.A. (1996) "Dynamic Power and Energy Capabilities of Commercially-Available Induced-Strain Actuators", *Journal of Intelligent Material Systems and Structures*, pp. 656-667, Nov. 1996, Technomic Pub. Co.
- J10. Giurgiutiu, V., Z. Chen, Lalande, F., and Rogers, C.A., Quattrone, R., and Berman, J. (1996) "Passive and Active Tagging of Reinforced Composite Samples for In-Process and In-Field Non-Destructive Evaluation", *Journal of Intelligent Material Systems and Structures*, Vol. 7, No. 1, pp. 623-634, Nov. 1996, Technomic Pub. Co.
- J9. Giurgiutiu, V., Chaudhry, Z. and Rogers, C.A. (1995) "Engineering Feasibility of Induced-Strain Actuators for Rotor Blade Active Vibration Control", *Journal of Intelligent Material Systems and Structures*, Vol. 6, No. 5., pp. 583-597, September 1995, Technomic Pub. Co

- J8. Popescu, B., Giurgiutiu, V. (1994) "Several Considerations Regarding the Variable Length Blade Rotor", *Journal of Aircraft*, Vol. 31, No. 4, pp. 975-977, July-August 1994
- J7. Giurgiutiu, V., and Reifsnider, K. L. (1994) "Development of Strength Theories for Random Fiber Composites", *Journal of Composites Technology and Research*, Vol. 16, No. 2, pp. 103-114, April 1994
- J6. Giurgiutiu, V., Onescu, F., Gaita, L. (1990) "New Developments in the Dynamic Aeroelastic Stability Study of Rotor Blades", *Revue Roumain Science Technique - Mécanique Appliquée*, Vol. 35, No. 2, p.p. 137-146, 1990, Romanian Academy Press, Bucharest, Romania
- J5. Giurgiutiu, V., Kalmutchi, P. (1989) "Mode-Shape Calculation for Helicopter Blades with Various Hub Conditions" (in Romanian), *Applied Mechanics Research*, Vol. 48, No. 1, pp. 21-33, 1989, Romanian Academy Press, Bucharest, Romania
- J4. Giurgiutiu, V., Stafford, R. O. (1977) "Semi-Analytic Methods for Frequencies and Mode-Shapes of Rotor Blades", *Vertica*, Vol. 1, pp. 291-306, 1977, Pergamon Press, UK
- J3. Giurgiutiu, V. (1976) "The Use of Finite Element Methods in the Analysis of Geometrically Nonlinear Structures, Part II: Dynamic Regime" (in Romanian), *Applied Mechanics Research*, Vol. 35, No. 1, pp. 147-156, 1976, Romanian Academy Press, Bucharest, Romania
- J2. Stafford, R. O., Giurgiutiu, V. (1975) "Semi-Analytic Method for Rotating Timoshenko Beams", *Int. J. Mech. Sci.*, Vol. 17, pp. 719-727, 1975, Pergamon Press, UK
- J1. Giurgiutiu, V. (1975) "The Use of Finite Element Method in the Analysis of Geometrically Nonlinear Structures, Part I: Static Regime" (in Romanian), *Applied Mechanics Research*, Vol. 34, No. 2, Romanian Academy Press, Bucharest, Romania, 1975, pp. 185-200

4.5.4 Journal Articles Submitted, Under Review, in Preparation

(several)

4.5.5 Papers in Major National and International Conference Proceedings

- C280 Giurgiutiu, V (2018) "Predictive simulation of guide wave structural health monitoring in metallic and composite structures", 9th *European Workshop on Structural Health Monitoring EWSHM 2018*, Hilton Manchester, Deansgate, Manchester, UK
- C279 Bhuiyan, Md Y; Faisal Haider, Md; Poddar, B; Giurgiutiu, V (2018) "Guided wave crack detection and size estimation in stiffened structures", *SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring*, 27 March 2018, Denver, Colorado, Proc. SPIE 10599, #105991Y, doi: 10.1117/12.2309975
- C278 Faisal Haider, Md; Mei, M; Lin, B; Yu, L; Giurgiutiu, V; Lam, P-S; Verst, C (2018) "Piezoelectric wafer active sensors under gamma radiation exposure toward applications for structural health monitoring of nuclear dry cask storage systems", *SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring*, 27 March 2018, Denver, Colorado, Proc. SPIE 10599, #105992F, doi: 10.1117/12.2297390
- C277 Mei, H; Giurgiutiu, V (2018) "Predictive 1D and 2D guided-wave propagation in composite plates using the SAFE approach", *SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring*, 27 March 2018, Denver, Colorado, Proc. SPIE 10600, #106000P, doi: 10.1117/12.2296566
- C276 Howden, S; Lin, B; Yu, L; Giurgiutiu, V (2018) "Acoustic emission and active sensing capabilities on full-scale nuclear dry cask storage structures", *SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring*, 27 March 2018, Denver, Colorado, Proc. SPIE 10601, #1060109, doi: 10.1117/12.2297441
- C275 Joseph, R; Howden, S; Lin, B; Yu, L; Giurgiutiu, V (2018) "Active health monitoring of TN32 dry cask using a scaled down model", *SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring*, 27 March 2018, Denver, Colorado, Proc. SPIE 10600, #106000B, doi: 10.1117/12.2297278

- C274 Schubert Kabban, C. M.; Lin, B.; Bhuiyan, Y.; Edelmann, C. P.; Giurgiutiu, V. (2017) "Sensitivity analysis and uncertainty evaluation in the design of structural health monitoring systems", 11th International Workshop on Structural Health Monitoring, Sept. 12-14, 2017, Stanford, CA, paper # 3099
- C273 Bhuiyan, Md. Y.; Giurgiutiu, V. (2017) "Experimental and computational analysis of acoustic emission waveforms for SHM applications", 11th International Workshop on Structural Health Monitoring, Sept. 12-14, 2017, Stanford, CA, paper # 1185
- C272 Barazanchy, D.; Roth, W.; Giurgiutiu, V. (2017) "A new ultrasonic immersion technique to retrieve anisotropic stiffness matrix for dispersion curve algorithms", 11th International Workshop on Structural Health Monitoring, Sept. 12-14, 2017, Stanford, CA, paper # 0545
- C271 Migot, A.; Giurgiutiu, V. (2017) "Impact localization using sparse PWAS networks and wavelet transform", 11th *International Workshop on Structural Health Monitoring*, Sept. 12-14, 2017, Stanford, CA, paper # 0391
- C270 Giurgiutiu, V. (2017) "Predictive simulation of structural health monitoring", 2017 *Smart Structures and NDE*, 25-29 March 2017, Portland, OR, **invited keynote speaker**, paper 10170-500, *Proc. SPIE 10170, Health Monitoring of Structural and Biological Systems 2017*, 1017002 doi:10.1117/12.2263325
- C269 Joseph, R.; Bhuiyan, M. Y.; Giurgiutiu, V. (2017) "Acoustic emission source modeling in a plate using buried moment tensors" 2017 *Smart Structures and NDE*, 25-29 March 2017, Portland, OR, *Proc. SPIE 10170, Health Monitoring of Structural and Biological Systems 2017*, 1017028; doi:10.1117/12.2260167
- C268 Faisal Haider, M., Lin, B.; Yu, Y.; Giurgiutiu, V. (2017) "Sensing capabilities of piezoelectric wafer active sensors in extreme nuclear environment", 2017 *Smart Structures and NDE*, 25-29 March 2017, Portland, OR, *Proc. SPIE 10169, Nondestructive Characterization and Monitoring of Advanced Materials, Aerospace, and Civil Infrastructure 2017*, 101691Z; doi:10.1117/12.2260162
- C267 Bhuiyan, M. Y.; Bao, J.; Poddar, B.; Giurgiutiu, V. (2017) "Analysis of acoustic emission waveforms from fatigue cracks", 2017 *Smart Structures and NDE*, 25-29 March 2017, Portland, OR, *Proc. SPIE 10170, Health Monitoring of Structural and Biological Systems 2017*, 101702A; doi:10.1117/12.2258337
- C266 Giurgiutiu, V.; Poddar, B.; Bao, JJ. (2016) "Can One Hear the Length of a Crack?" 6th *Asia-Pacific Workshop on Structural Health Monitoring*, 7-9 Dec. 2016, Hobart, Tasmania, Australia
- C265 Faisal Haider, M.; Lin, B.; Yu, L.; Giurgiutiu, V. (2016) "Characterization of Piezo Electric Wafer Active Sensors After Exposure to High Temperature", *ASME 2016 Pressure Vessels & Piping Conference*, July 17, 2016, Vancouver BC, Canada, PVP2016-63663
- C264 Giurgiutiu, V. (2016) "Predictive simulation of guided wave SHM with piezoelectric wafer active sensors", 8th *European Workshop On Structural Health Monitoring (EWSHM 2016)*, 5-8 July 2016, Spain, Bilbao
- C263 Bao, J.; Giurgiutiu, V. (2016) "Fatigue Crack Geometric Feature Extraction from AE Waveforms using Physics of Materials Based Approach" 58th *Acoustic Emission Working Group AEWG-58*, Philadelphia, PA, USA, May 22 - 25, 2016, S5-3
- C262 Frankforter, E.; Giurgiutiu, V. (2016) "Development of a Resonant-Type Fiber Bragg Grating Acoustic Emission Sensor" 58th *Acoustic Emission Working Group AEWG-58*, Philadelphia, PA, USA, May 22 - 25, 2016, S1-3
- C261 Bao, J.; Poddar, B.; Giurgiutiu, V. (2016) "Identifying Fatigue Crack Geometric Features from Acoustic Emission Signals", 2016 *Smart Structures and NDE*, 20-24 March 2016, Las Vegas, NV, 98051J, doi:10.1117/12.2219307
- C260 Bhuiyan, Y.; Shen, Y.; Giurgiutiu, V. (2016) "Ultrasonic inspection of multiple-rivet-hole lap joint cracks using global analysis with local finite element approach", 2016 *Smart Structures and NDE*, 20-24 March 2016, Las Vegas, NV, 98051Z, doi: 10.1117/12.2235645
- C259 Barazanchy, D.; Giurgiutiu, V. (2016) "A unified formulation for guided-wave propagation in multi-layered mixed anisotropic-isotropic hybrid aerospace composites", 2016 *Smart Structures and NDE*, 20-24 March 2016, Las Vegas, NV, 98040A, doi: 10.1117/12.2218141

- C258 Poddar, B.; Giurgiutiu, V. (2016) “Fast and accurate analytical model to solve inverse problem in SHM using Lamb wave propagation”, *2016 Smart Structures and NDE*, 20-24 March 2016, Las Vegas, NV, 98041J, doi:10.1117/12.2218143
- C257 Lin, B.; Bao, J.; Yu, L.; Giurgiutiu, V. (2016) “Acoustic emission detection with fiber optical sensors for dry cask storage health monitoring”, *2016 Smart Structures and NDE*, 20-24 March 2016, Las Vegas, NV, 98031H, doi: 10.1117/12.2219337
- C256 Giurgiutiu, V (2015) “SHM of Aerospace Composites – Challenges and Opportunities”, *CAMX 2015 The Composites and Advanced Materials Expo.*, Oct. 26-29, 2015, Dallas, TX
- C255 Poddar, B; Giurgiutiu, V (2015) “Detection and characterization of cracks using Lamb wave propagation”, *10th International Workshop on Structural Health Monitoring*, Sept. 1-3, 2015, Stanford University, CA
- C254 Barazanchy, D.; Giurgiutiu, V (2015) “Towards an unified approach for guided ultrasonic wave dispersion curves in metallic and composite materials”, *10th International Workshop on Structural Health Monitoring*, Sept. 1-3, 2015, Stanford University, CA
- C253 Kamas, T; Giurgiutiu, V (2015) “Analytical and Coupled Field FEA Modeling for E/M Impedance of Shear Horizontal Piezoelectric Wafer Active Sensors to Measure Liquid Properties”, *ACM 2015 International Conference on Advances in Applied and Computational Mechanics*, August 5-7, 2015, Izmir, Turkey
- C252 Lin, B.; Yu, L.; Giurgiutiu, V. (2015) “Temperature Effects on Fiber Optical Sensors for Dry Cast Storage Health Monitoring”, *Proceedings of the ASME 2015 Pressure Vessels & Piping Division Conference*, PVP 2015-45623, July 19-23, 2015, Boston, MA
- C251 Kamas, T.; Poddar, B.; Lin, B.; Yu, L.; Giurgiutiu, V. (2015) “Experimentation and Adaptive Modeling for Temperature Effect Quantification in PVP Structural Health Monitoring with PWAS”, *Proceedings of the ASME 2015 Pressure Vessels & Piping Division Conference*, PVP 2015-45595, July 19-23, 2015, Boston, MA
- C250 Bao, JJ; Giurgiutiu, V.; Droghini, M.; Ezernack, N. (2016) “Acoustic Emission Events Characterization during Low Cycle Fatigue Experiments”, *57th Acoustic Emission Working Group AEWG-57*, May 14, 2015, Chicago, IL
- C249 Poddar, B.; Giurgiutiu, V. (2015) “Experimental Validation of Analytical Model for Lamb Wave Interaction with Geometric Discontinuity”, *2015 Smart Structures and NDE*, 8-12 March 2015, San Diego, CA, 94371Y 9437-69
- C248 Roth, W.; Giurgiutiu, V. (2015) “Adhesive Disbond Detection Using Piezoelectric Wafer Active Sensors”, *2015 Smart Structures and NDE*, 8-12 March 2015, San Diego, CA, 9437-28
- SC247 Sun, X.; Lin, B.; Bao, J.; Giurgiutiu, V.; Knight, T.; Lam, P.S.; Yu, L. (2015) “Developing a Structural Health Monitoring System for Nuclear Dry Cask Storage Canister”, *2015 Smart Structures and NDE*, 8-12 March 2015, San Diego, CA, 94390N 9439-22
- C246 Frankforter, E.; Bao, J.; Lin, B.; Giurgiutiu, V. (2015) “Modeling, Optimization, and Experimental Validation of a Resonant Piezo-Optical Ring Sensor for Enhanced Active and Passive Structural Health Monitoring”, *2015 Smart Structures and NDE*, 8-12 March 2015, San Diego, CA, 94360B 9436-10
- C245 Kamas, T.; Frankforter, E.; Lin, B.; Yu, Lingyu; Giurgiutiu, V., (2015) “Thermal Effect on E/M Impedance Spectroscopy (EMIS) of Piezoelectric Wafer Active Sensors”, *2015 Smart Structures and NDE*, 8-12 March 2015, San Diego, CA, 943500 9435-23
- C244 Gresil, M.; Lin, B.; Yu, L.; Giurgiutiu, V. (2014) “Predictive Model Validation of Guided Wave Interaction with Notch Using Scanning Vibrometer Measurements”, *ASME 2014 Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, Newport, Rhode Island, Sep 8-10, 2014 SMASIS2014-7643 (technical presentation only)
- C243 Lin, B.; Giurgiutiu, V. (2014) “Piezo-Optical Active Sensing with PWAS And FBG Sensors For Structural Health Monitoring” *ASME 2014 Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, Newport, Rhode Island, Sep 8-10, 2014 SMASIS2014-7581
- C242 Kamas, T.; Giurgiutiu, V.; Lin, B. (2014) “Modeling and Experimentation of Thickness Mode E/M Impedance And Rayleigh Wave Propagation For Piezoelectric Wafer Active Sensors On Thick Plates”

- ASME 2014 Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, Newport, Rhode Island, Sep 8-10, 2014 SMASIS2014-7571
- C241 Poddar, B.; Giurgiutiu, V. (2014) "Interaction of Lamb Waves with Geometric Discontinuities: An Analytical Approach", *2014 Review of Progress in Quantitative Nondestructive Evaluation*, Boise, Idaho, July 20-25, 2014
- C240 Shen, Y.; Giurgiutiu, V. (2014) "Excitability of Guided Waves in Composites with PWAS Transducers", *2014 Review of Progress in Quantitative Nondestructive Evaluation*, Boise, Idaho, July 20-25, 2014
- C239 Wu, W.; Qu, W.; Xiao, L.; Shen, Y.; Giurgiutiu, V. (2014) "Fatigue Crack Detection Using Subharmonic Component with Nonlinear Boundary Conditions", *2014 Review of Progress in Quantitative Nondestructive Evaluation*, Boise, Idaho, July 20-25, 2014
- C238 Kamas, T.; Giurgiutiu, V.; Lin, B. (2014) "Quasi-Rayleigh Waves in Butt-Welded Thick Steel Plate", *2014 Review of Progress in Quantitative Nondestructive Evaluation*, Boise, Idaho, July 20-25, 2014
- C237 Lin, B.; Yu, L.; Giurgiutiu, V.; (2014) "Analytical Model of Nuclear Environmental Effects With Piezoelectric Wafer Active Sensors", *Proceedings of the ASME 2014 Pressure Vessels & Piping Division Conference*, PVP 2014-28887, July 20-24, 2014, Anaheim, CA.
- C236 Giurgiutiu, V. (2014) "Challenges and Opportunities for Structural Health Monitoring in PVP Applications", *Proceedings of the ASME 2014 Pressure Vessels & Piping Division Conference*, PVP 2014-28010, July 20-24, 2014, Anaheim, CA.
- C235 Kamal, A.; Giurgiutiu, V. (2014) "Characterization of Shear Horizontal-Piezoelectric Wafer Active Sensor (SH-PWAS)", *SEM 2014 Annual Conference & Exposition on Experimental and Applied Mechanics*, Hyatt Regency Greenville, Greenville, SC USA, June 2-5, 2014, paper #334
- C234 Giurgiutiu, V. (2014) "Piezoelectric Wafer Active Sensors for Structural Health Monitoring with Aerospace Applications" *5th International Symposium on Aircraft Materials (ACMA)*, Marrakech, Morocco, 23-26 April 2014
- C233 Kamas, T.; Giurgiutiu, V.; Lin, B.; (2014) "Modeling and Experimentation of Proof-Mass Piezoelectric Wafer Active Sensor Thickness Mode E/M Impedance Spectroscopy"; *AIAA Region II Student Conference*, April 7-8, 2014, Memphis, TN
- C232 Lin, B.; Gresil, M.; Giurgiutiu, V.; Knight, T.; Mendez-Torres, A.; Yu, L. (2014) "Nuclear environmental effects on piezoelectric wafer active sensors based acousto-ultrasonic sensing system" *ICAPP 2014 International Congress on Advances in Nuclear Power Plants*, April 6-9, 2014, Charlotte, NC
- C231 Kamal, A.; Giurgiutiu, V. (2014) "Analytical Study Guideline for Structural Health Monitoring of Steel Canister in Dry Cask Storage System by Using Multimodal Ultrasonic Lamb Waves" *ICAPP 2014 International Congress on Advances in Nuclear Power Plants*, April 6-9, 2014, Charlotte, NC
- C230 Lin, B.; Giurgiutiu, V. (2014) "Development of optical equipment for ultrasonic guided wave structural health monitoring", *SPIE Vol. 9062*, paper number 9062-27
- C229 Frankforter, E.; Lin, B.; Giurgiutiu, V. (2014) "Piezo-optical measurements for guided wave and acoustic emission structural health monitoring", *SPIE Vol. 9062*, paper number 9062-06
- C228 Kamal, A. M.; Giurgiutiu, V. (2014) "Predictive modeling of power and energy of guided waves in anisotropic composites excited by PWAS", *SPIE Vol. 9064*, paper number 9064-39
- C227 Shen, Y.; Giurgiutiu, V. (2014) "WFR-2D: an analytical model for PWAS-generated 2D ultrasonic guided wave propagation", *SPIE Vol. 9064*, paper number 9064-40
- C226 Giurgiutiu, V.; Mendez Torres, A. (2013) "Opportunities and Challenges for Structural Health Monitoring of Radioactive Waste Systems and Structures", *15th ASME International Conference on Environmental Remediation and Radioactive Waste Management*, Sep 8-12, 2013, Brussels, Belgium, ICEM2013-96195
- C225 Shen, Y.; Bao, J.; Giurgiutiu, V. (2013) "Health Monitoring of Aerospace Bolted Lap Joints Using Nonlinear Ultrasonic Spectroscopy: Theory and Experiments", *9th International Workshop on Structural Health Monitoring, IWSHM*, Sept. 10-12 2013, Stanford University, CA, pp. 2333-2340
- C224 Lin, B.; Giurgiutiu, V. (2013) "Exploration of Ultrasonic Guided Wave Detection with Optical Fiber Sensors and Piezoelectric Transducers", *9th International Workshop on Structural Health Monitoring, IWSHM*, Sept. 10-12 2013, Stanford University, CA, pp. 1559-1566

- C223 Kamas, T.; Giurgiutiu, V.; Lin, B. (2013) “Analytical Modeling of Proof-Mass Piezoelectric Wafer Active Sensor for Symmetric Lamb Waves Tuning”, *9th International Workshop on Structural Health Monitoring, IWSHM*, Sept. 10-12, 2013, Stanford University, CA, pp. 1494-1501
- C222 Kamal, A.; Lin, B.; Giurgiutiu, V. (2013) “Optimizing Mode Tuning of Guided Waves and PWAS Electromechanical Impedance for Power Efficient SHM systems”, *9th International Workshop on Structural Health Monitoring, IWSHM*, Sept. 10-12 2013, Stanford University, CA, pp. 1479-1486
- C221 Giurgiutiu, V. (2013) “Recent PWAS-SHM Developments in the Laboratory for Active Materials and Smart Structures”, *ASME pressure vessels and piping conference*, July 14-18, 2013, Paris, France, PVP2013-97523
- C220 Gresil, M.; Giurgiutiu, V. (2013) “Prediction of attenuated guided wave propagation in carbon fiber composites”, *19th International Conference on Composite Materials*, 81737, Montreal, Canada, July 2013
- C219 Kamal, A.; Gresil, M.; Giurgiutiu, V. (2013) “Shear Horizontal Guided Waves in Laminated Composite Plates Using SH-PWAS”, *NDT of Composites*, Seattle, WA, May 13-14, 2013
- C218 Kamal A.; Gresil, M.; Giurgiutiu, V.; (2013) “Comparative Study of Several Methods for the Calculation of Ultrasonic Guided Waves in Composites”, *54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, April 8-11, 2013, Boston, Massachusetts, Chapter DOI: 10.2514/6.2013-1901
- C217 Bao, J.; Shen, Y.; Giurgiutiu, V. (2013) “Linear and Nonlinear Finite Element Simulation of Wave Propagation through Bolted Lap Joint”, *54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, April 8-11, 2013, Boston, Massachusetts, Chapter DOI: 10.2514/6.2013-1902
- C216 Gresil, M.; Giurgiutiu, V. (2013) “Guided wave propagation in carbon composite laminate using piezoelectric wafer active sensors”, *SPIE 2013 Smart Structures and NDE*, 10-14 March 2013, San Diego, CA, SPIE Vol. 8695, 8695-77
- C215 Bao, J.; Giurgiutiu, V. (2013) “Effects of fastener load on wave propagation through lap joint” *SPIE 2013 Smart Structures and NDE*, 10-14 March 2013, San Diego, CA, SPIE Vol. 8695, 8695-73
- C214 Shen, Y.; Giurgiutiu, V. (2013) “Modeling of guided waves for detection of linear and nonlinear structural damage” *SPIE 2013 Smart Structures and NDE*, 10-14 March 2013, San Diego, CA, SPIE Vol. 8695, 8695-64
- C213 Kamal, A.; Lin, B.; Giurgiutiu, V. (2013) “Predictive Modeling of PWAS-Coupled Shear Horizontal Waves” *SPIE 2013 Smart Structures and NDE*, 10-14 March 2013, San Diego, CA, SPIE Vol. 8695, paper 8695-16
- C212 Yu, L.; Wu, H.; Giurgiutiu, V.; Ziehl, P. (2013) “In-situ health monitoring on steel bridges with dual mode piezoelectric sensors” *SPIE 2013 Smart Structures and NDE*, 10-14 March 2013, San Diego, CA, SPIE Vol. 8694, paper 8694-38
- C211 Kamas, T.; Lin, B.; Giurgiutiu, V. (2013) “Analytical modeling of PWAS in-plane and out-of-plane electromechanical impedance spectroscopy (EMIS)” *SPIE 2013 Smart Structures and NDE*, 10-14 March 2013, San Diego, CA, SPIE Vol. 8692, paper 8692-74
- C210 Gresil, M.; Giurgiutiu, V.; (2012) “Time-domain hybrid global-local prediction of guided waves”, *Asia-Pacific Workshop on Structural Health Monitoring*, Melbourne, Australia, December 2012
- C209 Yu, L.; Zhao, L.; Tian, Z.; Giurgiutiu, V.; Ziehl, P. (2012) “Dual Mode Sensing of Crack Growth in Steel Bridge Structures” *ASME 2012 Conference on Smart Materials, Adaptive Structures, and Intelligent Systems SMASIS*, Sept. 19-21, 2012, Stone Mountain, GA, paper SMASIS2012-8096
- C208 Lin, B.; Kamal, A.; Giurgiutiu, V.; Kamas, T. (2012) “Multimodal Lamb Waves Power and Transfer Function Analysis of Structurally-bonded PWAS” *ASME 2012 Conference on Smart Materials, Adaptive Structures, and Intelligent Systems SMASIS*, Sept. 19-21, 2012, Stone Mountain, GA, paper SMASIS2012-8061
- C207 Shen, Y.; Giurgiutiu, V.; (2012) “Simulation of Interaction between Lamb Waves and Cracks for Structural Health Monitoring with Piezoelectric Wafer Active Sensors” *ASME 2012 Conference on Smart Materials, Adaptive Structures, and Intelligent Systems SMASIS*, Sept. 19-21, 2012, Stone Mountain, GA, paper SMASIS2012-7917

- C206 Kamal, A.; Lin, B.; Giurgiutiu, V (2012), “Energy and Power Modeling of Multi-Mode Lamb Waves Propagating in Structures with Bonded Piezoelectric Wafer Active Sensors” 2012 *QNDE Conference*, 15-20 July 2012, Denver, Colorado
- C205 Kamal, A.; Lin, B.; Giurgiutiu, V (2012) “Lamb Waves Power and Energy Transfer between Structure and Bonded Piezoelectric Wafer Active Sensors for Structural Health Monitoring”, NSF CMMI Engineering Research and Innovation Conference, 9-12 July, 2012, Boston, MA
- C204 Giurgiutiu, V.; Lin, B. (2012) “Exact Modeling of Power and Energy Transduction for Optimum Design of Structurally-Integrated Thin-Film Active Sensors”, NSF CMMI Engineering Research and Innovation Conference, 9-12 July, 2012, Boston, MA
- C203 Yamagata, N.; Lin, B.; Giurgiutiu, V.; Marcal, P. (2012) “Application Examples of Structural Health Monitoring using Piezoelectric Wafer Active Sensors”, Proceedings of the Japan Society for Computational Engineering and Science (JSCES) Conference, Vol. 17, #100117.
- C202 Lin, B.; Mendez-Torres, A. E.; Gresil, M.; Giurgiutiu, V. (2012) “Structural Health Monitoring with Piezoelectric Wafer Active Sensors Exposed to Irradiation Effects”, *ASME 2012 Pressure Vessels and Piping Division Conference*, 15-19 July 2012, Toronto, Ontario, Canada, paper PVP2012-78848
- C201 Gresil, M.; Giurgiutiu, V.; Shen, Y.; Poddar, B (2012) “Guidelines for Using the Finite Element Method for Modeling Guided Lamb Wave Propagation in SHM Processes”, *6th European Workshop on Structural Health Monitoring*, 3-6 July 2012, Dresden, Germany, paper # Tu.2.E.1
- C200 Gresil, M.; Giurgiutiu, V.; Shen, Y (2012), “Predictive Simulation of Structural Sensing”, *53rd AIAA Structures, Structural Dynamics, and Materials Conference*, 23 April 2012, Honolulu, Hawaii, CID: 1215950
- C199 Lin B.; Giurgiutiu, V.; Kamal, A. M. (2012) “The Use of Exact Lamb Wave Modes for Modeling the Power and Energy Transduction of Structurally-Bonded Piezoelectric Wafer Active Sensors”, 2012 *Smart Structures and NDE*, 11-15 March 2012, San Diego, CA, SPIE Vol. 8345, paper 8345-08
- C198 Yu, L.; Giurgiutiu, V. Yu, J.; Ziehl, P.; Zhao, L. (2012) “Comparative Study of Active and Passive Sensing with AE and PWAS Transducers”, 2012 *Smart Structures and NDE*, 11-15 March 2012, San Diego, CA, SPIE Vol. 8347, paper 8347-73
- C197 Godinez-Azcuaga, V. F.; Farmer, J. R.; Ziehl, P.; Giurgiutiu, V.; Nanni, A.; Inman, D. J. (2012) “Status in the Development of Self-Powered Wireless Sensor Node for Structural Health Monitoring and Prognosis”, 2012 *Smart Structures and NDE*, 11-15 March 2012, San Diego, CA, SPIE Vol. 8347, paper 8347-68
- C196 Shen, Y.; Giurgiutiu, V. (2012) “Predictive Simulation of Nonlinear Ultrasonics”, 2012 *Smart Structures and NDE*, 11-15 March 2012, San Diego, CA, SPIE Vol. 8348, paper 8348-86
- C195 Giurgiutiu, V. (2011) “Structural Health Monitoring and Damage Detection with Piezoelectric Wafer Active Sensors”, *14th Asia Pacific Vibration Conference (14th APVC)*, 5-8 Dec. 2011, Hong Kong Polytechnic University, Hong Kong
- C194 Gresil, M.; Lin, B.; Shen, Y.; Giurgiutiu, V. (2011) ‘Predictive Modeling of Space Structures for SHM with PWAS Transducers’ *ASME 2011 Conference on Smart Materials, Adaptive Structures, and Intelligent Systems SMASIS 2011*”, Sept. 18-21, 2011m Phoenix, AZ
- C193 Lin, B.; Giurgiutiu, V. (2011) 1-D and 2-D Modeling of Power and Energy Transduction of Piezoelectric Wafer Active Sensors for Structural Health Monitoring”, *8th International Workshop on Structural Health Monitoring IWSHM 2011*, 13-15 Sept. 2011, Stanford University, CA
- C192 Gresil, M.; Shen, Y.; Giurgiutiu, V. (2011) “Predictive Modeling of Ultrasonic SHM with PWAS Transducers”, *8th International Workshop on Structural Health Monitoring IWSHM 2011*, 13-15 Sept. 2011, Stanford University, CA
- C191 V. Godínez, V.; Pollock, A.; Gonzalez, M.; Momeni, S.; Gostautas, R.; Fustos, R.; Newlin, B.; Inman, D.; Farmer, J.; Priya, S.; Ziehl, P.; Caicedo, J.; Zarate, B.; Yu, L.; Giurgiutiu, V.; Nanni, A. (2011) “Self Powered Wireless Sensor Network for Structural Bridge Health Prognosis: Achievements in the First Two Years”, *8th International Workshop on Structural Health Monitoring IWSHM 2011*, 13-15 Sept. 2011, Stanford University, CA

- C190 Olariu, V.; Gnadinger, A.; Bao, J.; Giurgiutiu, V. (2011) "Autonomous Nonbattery Wireless Strain Gage for Structural Health Monitoring", 8th *International Workshop on Structural Health Monitoring IWSHM 2011*, 13-15 Sept. 2011, Stanford University, CA
- C189 Gresil, M.; Shen, Y.; Giurgiutiu, V. (2011) "Benchmark Problems for Predictive FEM Simulation of 1-D and 2-D Guided Waves for SHM with Piezoelectric Wafer Active Sensors", *Review of Progress in Quantitative Nondestructive Evaluation QNDE 2011*, July 17-22, 2011, University of Vermont, Burlington, VT
- C188 Giurgiutiu, V. (2011) "Predictive Simulation in Structural Health Monitoring with Piezoelectric Wafer Active Sensors for Risk-Informed In-service Inspection" *ASME 2011 Pressure Vessels and Piping Division/K-PVP Conference PVP-2011*, July 17-22, 2011, Baltimore, MD
- C187 Giurgiutiu, V. (2011) "Structural Damage Detection with Piezoelectric Wafer Active Sensors", 9th *International Conference on Damage Assessment of Structures*, 11-13 July 2011, St. Anne's College, Oxford, UK
- C186 Giurgiutiu, V. (2011) "Predictive Modeling of Smart Structures with In-Situ Sensing Capability", 5th *ECCOMAS Thematic Conference on Smart Structures and Materials SMART 11*, July 06-08, 2011, Saarbrücken, Germany (**invited keynote presentation**)
- C185 Gresil, M.; Yu, L.; Giurgiutiu, V.; Sutton, M. (2011) "Finite Element Modeling of Electromechanical Impedance Spectroscopy for Damage Detection in Composite Materials", 16th *International Conference on Composite Structures ICCS 16*, Porto, Portugal, 28-30 June 2011
- C184 Giurgiutiu, V. (2011) "Embedded NDT with Piezoelectric Wafer Active Sensors", *International Symposium on Nondestructive Testing of Materials and Structures, NDTMS-2011*, May 15-18, 2011, Istanbul, Turkey
- C183 Giurgiutiu, V. (2011) "Structural Health Monitoring of Composite Structures with Piezoelectric Wafer Active Sensors", *Joint Sheffield-Cambridge Conference on Deformation and Fracture of Composites (DFC-11) and Structural Integrity and Multi-scale Modelling (SI-5)*, Queens' College, Cambridge, UK, 13-15 April 2011 (**invited keynote presentation**)
- C182 Godinez-Azcuaga, V. F.; Inman, D.; Ziehl, P. H.; Giurgiutiu, V.; Nanni, A. (2011) "Recent Advances in the Development of Self-Powered Wireless Sensor Network for Structural Health Prognosis", *SPIE Int. Symp. on Smart Structures and NDE*, 6-10 March 2011, San Diego, CA, Conf. 7983, paper 7983-72
- C181 Yu, L.; Momeni, S.; Godinez-Azcuaga, V. F.; Giurgiutiu, V. (2011) "Adaptation of PWAS Transducers as Acoustic Emission Sensors", *SPIE Int. Symp. on Smart Structures and NDE*, 6-10 March 2011, San Diego, CA, Conf. 7983, paper 7983-74
- C180 Lin, B.; Giurgiutiu, V. (2011) "Simplified 2-D Modeling of Power and Energy Transduction of Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *SPIE Int. Symp. on Smart Structures and NDE*, 6-10 March 2011, San Diego, CA, Conf. 7981, paper 7981-96
- C179 Gresil, M.; Giurgiutiu, V. (2011) "Fatigue Crack Detection in Thick Steel Structures with Piezoelectric Wafer Active Sensors", *SPIE Int. Symp. on Smart Structures and NDE*, 6-10 March 2011, San Diego, CA, Conf., paper 7983-101
- C178 Bao, J.; Giurgiutiu, V.; Rubel, G. O.; Peterson, G. W.; Ball, T. (2011) "Active Carbon Filter Health Condition Detection with Piezoelectric Wafer Active Sensors", *SPIE Int. Symp. on Smart Structures and NDE*, 6-10 March 2011, San Diego, CA, Conf. 7981, paper 7981-47
- C177 Giurgiutiu, V. (2010) "Predictive Simulation of Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *APWSHM-2010 3rd Asia Pacific Workshop on Structural Health Monitoring*, Nov. 30-Dec. 2, 2010, Tokyo, Japan
- C176 Giurgiutiu, V. (2010) "Structural Health Monitoring of Composite Structures with Piezoelectric Wafer Active Sensors", *IMECE2010 ASME International Mechanical Engineering Congress & Exposition*, Nov. 12-18, 2010, Vancouver, BC, Canada, paper #IMECE2010-40363
- C175 Giurgiutiu, V. (2010) "Structural Health Monitoring of Aerospace Structures with Piezoelectric Wafer Active Sensors", *Aerospatial 2010*, 20-21 Oct. 2010, Bucharest, Romania (presentation only).
- C174 Giurgiutiu, V.; Santoni-Bottai, G.; Lin, B.; Cuc, A. (2010) "Space Applications of Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *SMASIS2010 -- ASME Conference on Smart*

- Materials, Adaptive Structures, and Intelligent Systems*, Sep.28-Oct.1, 2010, Philadelphia, PA, paper #SMASIS2010-3811
- C173 Giurgiutiu, V. (2010) "Piezoelectric Wafer Active Sensors for Structural Health Monitoring – Recent Developments", *5th European Workshop on Structural Health Monitoring*, 29 June-02 July 2010, Sorrento, Naples, Italy, paper #EWSHM2010-F09
- C172 Giurgiutiu, V. (2010) "Piezoelectric Wafer Active Sensors for Structural Health Monitoring – State of the Art and Future Directions", *PVP2010 ASME Pressure Vessels & Piping Division Conference*, July 18-22, 2010, Bellevue, WA, paper #PVP2010-25292
- C171 Giurgiutiu, V.; Bao, J. J. (2010) "Piezoelectric Wafer Active Sensors for Structural Health Monitoring – State of the Art and Future Directions", *16th ASME US National Congress of Theoretical and Applied Mechanics*, June 27-July 2, 2010, State College, PA, paper # USNCTAM2010-498
- C170 Giurgiutiu, V.; Santoni-Bottai, G. (2010) "Piezoelectric Wafer Active Sensors for Structural Health Monitoring of Composite Structures", *SDM-2010 51st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conf.*, 12-15 Apr. 2010, Orlando, FL, paper #AIAA2010-2661
- C169 Caicedo, J. M.; Zarate, B. A.; Giurgiutiu, V.; Yu, L.; Ziehl, P. (2010) "Bayesian Finite Element Model Updating for Crack Growth" *SME IMAC-XXVIII*, Feb. 1-4, 2010, Jacksonville, FL
- C168 Yu, L.; Giurgiutiu, V. (2010) "Piezoelectric Wafer Active Sensor Guided Wave Imaging", *SPIE Conference on Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, 7-11 March 2010, San Diego, CA, SPIE Vol. 7648, Paper #7648-31
- C167 Yu, J.; Ziehl, P.; Zaratea, B.; Caicedo, J.; Yu, L.; Giurgiutiu, V.; Matta, F.; Metrovich, B. (2010) "Quantification of Fatigue Cracking in CT Specimens with Passive and Active Piezo-Electric Sensing", *SPIE Conference on Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, Vol. 7649, Paper #7649-25
- C166 Yu, L.; Giurgiutiu, V.; Ziehl, P.; Ozevin, D.; Pollock, P.(2010) "Steel bridge fatigue crack detection with piezoelectric wafer active sensors", *SPIE Conference on Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, SPIE Vol. 7647, Paper #7647-70
- C165 Santoni-Bottai, G.; Giurgiutiu, V. (2010) "Shear Lag Solution for Structurally Attached Active Sensors", *SPIE Conference on Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, 7-11 March 2010, San Diego, CA, SPIE Vol. 7647, Paper #7647-98
- C164 Lin, B.; Giurgiutiu, V. (2010) "Modeling of Power and Energy Transduction of Embedded Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *SPIE Conference on Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, 7-11 March 2010, San Diego, CA, SPIE Vol. 7647, Paper #7647-97
- C163 Yu, L.; Giurgiutiu, V.; Wang, J. J.; Shin, Y. J. (2009) "Corrosion Detection/Quantification on Thin-Wall Structures Using Multi-Mode Sensing Combined with Statistical and Time-Frequency Analysis", *2009 ASME International Mechanical Engineering Congress*, Nov. 13-19, Lake Buena Vista, Florida
- C162 Giurgiutiu, V. (2009) "Piezoelectric Wafer Active Sensors for Structural Health Monitoring: State of the Art and Future Directions", *SMASIS 2009 -- Smart Materials, Adaptive Structures & Intelligent Systems Conference*, 21-23 Sept. 2009, Oxnard, CA (invited paper)
- C161 Xu, B.; Yu, L.; Giurgiutiu, V. (2009) "Advanced Methods for Time-of-Flight Estimation with Application to Lamb Wave Structural Health Monitoring", *7th International Workshop on Structural Health Monitoring*, Sept. 2009, Stanford, CA
- C160 Santoni-Bottai G.; Giurgiutiu V., "Shear lag solutions for solid-state actuators bonded to structures in SHM applications", *Proceedings of the 7th International Workshop on Structural Health Monitoring* Sept 9-11 2009
- C159 Giurgiutiu, V.; Yu, L. (2009) "Predictive Methodologies for the Design of Lamb Wave Piezoelectric Wafer Active Sensors for Structural Health Monitoring, Damage Detection, and Failure Prevention", *Proc. of 2009 NSF Engineering Research and Innovation Conference*, Honolulu, Hawaii
- C158 Giurgiutiu, V.; Lin, B.; Bhalla, A. S; Chen, C. L.; Guo, R. Y; Jiang, J. C., (2009) "Ferroelectric Thin-film Active Sensor Array for Structural Health Monitoring", *Proc. of 2009 NSF Engineering Research and Innovation Conference*, Honolulu, Hawaii

- C157 Lin, B.; Giurgiutiu, V.; Bhalla, A. S.; Chen, C. L.; Guo, R. Y.; Jiang, J. C., “Thin-Film Active Nano-PWAS for Structural Health Monitoring”, *Proc. of SPIE*, Vol. 7292, 72921M
- C156 Xu, B.; Giurgiutiu, V.; Yu, L. (2009) “Lamb waves decomposition using matching pursuit method”, *SPIE Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems Conference*, March 2009, San Diego, CA, Paper #7292-18
- C155 Xu, B.; Yu, L.; Giurgiutiu, V. (2009) “Lamb wave dispersion compensation in piezoelectric wafer active sensor phased-array applications”, *SPIE Health Monitoring of Structural and Biological Systems III conference*, March 2009, San Diego, CA, Paper #7295-74
- C154 Bottai, G. S.; Pollock, P. J.; Behling, T.; Giurgiutiu, V., Bland, S. M.; Joshi, S. P. (2008) “Damage Detection in Cryogenic Composites for Space Applications Using Piezoelectric Wafer Active Sensors”, *49th AIAA Structures, Structural Dynamics, and Materials Conference, 16th Adaptive Structures Conference*, 7-10 April 2008, Schaumburg, IL, paper # AIAA-2008-1968
- C153 Yu, L.; Giurgiutiu, V.; Pollock, P. J. (2008) “A multimode sensing system for corrosion detection using piezoelectric wafer active sensors”, *Proc. of SPIE* Vol. 6932, paper #6932-91
- C152 Yu, L.; Giurgiutiu, V.; Chao, Y.; Pollock, P. J. (2007) “In situ multi-mode sensing with embedded piezoelectric wafer active sensors for critical pipeline health monitoring”, *Proceedings of the 2007 ASME International Mechanical Engineering Congress*, November 11-15, 2007, Seattle, WA, paper #IMECE2007-43234
- C151 Liu, W.; Giurgiutiu, V. (2007) “Finite Element Simulation of Piezoelectric Wafer Active Sensors for Structural Health Monitoring with Coupled Field Elements”. *6th International Workshop on Structural Health Monitoring*, Stanford, CA, Sept. 11-13, 2007
- C150 Giurgiutiu, V.; Yu, L.; Santoni, G. B.; Xu, B. (2007) “Lamb Wave Tuning for Piezoelectric Wafer Active Sensor Applications in In-Situ Structural Health Monitoring”, *Review of Progress in Quantitative Nondestructive Evaluation, QNDE 2007*, Golden, Colorado, July 22-27, 2007
- C149 Giurgiutiu, V. (2007) “Damage Assessment of Structures – An Air Force Office of Scientific Research Structural Mechanics Perspective”, *III ECCOMAS Thematic Conference on Smart Structures and Materials*, 9-11 July 2007, Gdansk, Poland
- C148 Giurgiutiu, V. (2007) “Damage Assessment of Structures – An Air Force Office of Scientific Research Structural Mechanics Perspective”, *7th International Conference on Damage Assessment of Structures*, 25-27 June 2007, Torino, Italy
- C147 Yu, L.; Giurgiutiu, V. (2007) “Guided wave piezoelectric wafer active sensors arrays for damage detection”, *World Forum on Smart Materials and Smart Structures Technologies*, Chongqing and Nanjing, China, May 22-27, 2007, paper SMSST07-360
- C146 Bottai, S. G.; Chrysochoidis, N. A.; Giurgiutiu, V.; Saravanos, A. D. (2007) “Analytical and Experimental Evaluation of Piezoelectric Wafer Active Sensors Performances for Lamb Waves based Structural Health Monitoring in Composite Laminates”, *SPIE Smart Structures/NDE Conference 2007*, 19-22 March 2007, San Diego, CA, paper #6532-22
- C145 Lin, B.; Giurgiutiu, V.; Yuan, Zh.; Liu, J.; Chen, Ch.; Bhalla, A. S.; Guo, R. (2007) “Ferroelectric Thin-Film Active Sensors for Structural Health Monitoring”, *Proc. of SPIE* Vol. 6529, paper #6529-16
- C144 Liu, W. and Giurgiutiu, V. (2007) “Finite Element Simulation of Piezoelectric Wafer Active Sensors for Structural Health Monitoring with Coupled-Field Elements”, *Proc. of SPIE* Vol. 6529, paper #6529-125
- C143 Xu, B. and Giurgiutiu, V. (2007) “Lamb Waves Time-reversal Method Using Frequency Tuning Technique for Structural Health Monitoring”, *Proc. of SPIE* Vol. 6529, paper #6529-25
- C142 Yu, L.; Giurgiutiu, V.; Kendall, J. R. (2007) “Omnidirectional Guided Wave PWAS Phased Array for Thin-wall Structure Damage Detection”, *Proc. of SPIE* Vol. 6529, paper #6529-107
- C141 Bottai, G.; Giurgiutiu, V. (2006) “Lamb Wave Tuning Between Piezoelectric Wafer Active Sensors and Host Structure: Experiments and Modeling”, *Proceedings of IMECE2006, 2006 ASME International Mechanical Engineering Congress and Exposition*, November 5-10, 2006, Chicago, Illinois, paper# IMECE2006-13533

- C140 Giurgiutiu, V. (2006) “New Developments in the Use of Piezoelectric Wafer Active Sensors for Structural Health Monitoring”, *Proceedings of the 3rd European Workshop on Structural Health Monitoring*, July 5-7, 2006, Granada, Spain
- C139 Giurgiutiu, V.; Jenkins, C.; Kendall, J.; Yu, L. (2006) “In-situ Imaging of Crack Growth with Piezoelectric Wafer Active Sensors”, *47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference and 14th AIAA/ASME/AHS Adaptive Structures Conference*, Newport, RI, 1-5 May, 2006, paper # AIAA-2006-21141
- C138 Cuc, A.; Giurgiutiu, V. (2006) “Propagation of guided Lamb waves in bonded specimens using piezoelectric wafer active sensors” *SPIE 13th International Symposium on Smart Structures and Materials and 11th International Symposium on NDE for Health Monitoring and Diagnostics*, San Diego, CA, 26 February–2 March, 2006, paper #6174-40
- C137 Lin, B.; Giurgiutiu, V. (2006) “Piezoelectric wafer active sensor impedance analysis for structural health monitoring”, *SPIE 13th International Symposium on Smart Structures and Materials and 11th International Symposium on NDE for Health Monitoring and Diagnostics*, San Diego, CA, 26 February–2 March, 2006, paper #6174-08
- C136 Liu, W.; Giurgiutiu, V. (2006) “Finite element modeling and simulation of piezoelectric wafer active sensors interaction with the host structure for structural health monitoring”, *SPIE 13th International Symposium on Smart Structures and Materials and 11th International Symposium on NDE for Health Monitoring and Diagnostics*, San Diego, CA, 26 February–2 March, 2006, paper #6174-107
- C135 Matthews, L.; Giurgiutiu, V. (2006) “Modeling Actuation Forces and Strains in Nastic Structures”, *SPIE 13th International Symposium on Smart Structures and Materials and 11th International Symposium on NDE for Health Monitoring and Diagnostics*, San Diego, CA, 26 February–2 March, 2006, paper #6172-62
- C134 Xu, B.; Giurgiutiu, V.; Crachiolo, G. (2006) “Development of Piezoelectric Oscillator Sensor for In-Vivo Monitoring of Capsule Formation around Soft Tissue Implants”, *SPIE 13th International Symposium on Smart Structures and Materials and 11th International Symposium on NDE for Health Monitoring and Diagnostics*, San Diego, CA, 26 February–2 March, 2006, paper #6177-41
- C133 Xu, B.; Giurgiutiu, V. (2006) “Development of DSP-based Electromechanical (E/M) Impedance Analyzer for Active Structural Health Monitoring” *SPIE 13th International Symposium on Smart Structures and Materials and 11th International Symposium on NDE for Health Monitoring and Diagnostics*, San Diego, CA, 26 February–2 March, 2006, paper #6174-26
- C132 Yu, L.; Giurgiutiu, V. (2006) “Design, implementation, and comparison of guided wave phased arrays using embedded piezoelectric wafer active sensors for structural health monitoring”, *SPIE 13th International Symposium on Smart Structures and Materials and 11th International Symposium on NDE for Health Monitoring and Diagnostics*, San Diego, CA, 26 February–2 March, 2006, paper #6173-60
- C131 Yu, L.; Giurgiutiu, V. (2006) “Damage Detection Using Guided Waves and Piezoelectric Wafer Active Sensor Arrays”, *Proceedings of IMAC XXIV*, 30 Jan.-2 Feb. 2006, St. Louis, MO, paper #170 (CD-ROM)
- C130 Cuc, A.; Giurgiutiu, V. Tidwell, Z.; Joshi, S. (2005) “Non-destructive evaluation (NDE) of space application panels using piezoelectric wafer active sensors”, *Proceedings of the ASME IMECE Congress*, Nov. 7-11, 2005, Orlando, FL, paper #IMECE2005-81721, CD-ROM
- C129 Lin, B.; Giurgiutiu, V. (2005) “PVDF and PZT piezoelectric wafer active sensors for structural health monitoring” , *Proceedings of the ASME IMECE Congress*, Nov. 5-11, 2005, Orlando, FL, paper #IMECE 2005-80400, CD-ROM
- C128 Giurgiutiu, V.; Matthews, L.; Leo, D. J.; Sundaresan, V. B. (2005) “Concepts for Power and Energy Analysis in Nastic Structures” *Proceedings of the ASME IMECE Congress*, Nov. 5-11, 2005, Orlando, FL, paper #IMECE 2005-82786, CD-ROM
- C127 Xu, B.; Giurgiutiu, V. (2005) “Optimized excitation signal source for efficient measurement of E/M impedance”, *Proceedings of the ASME IMECE Congress*, Nov. 5-11, 2005, Orlando, FL, paper #IMECE 2005-80229, CD-ROM

- C126 Yu, L.; Giurgiutiu, V. (2005) "Using phased array technology and embedded ultrasonic structural radar for active structural health monitoring and nondestructive evaluation", *Proceedings of the ASME IMECE Congress*, Nov. 5-11, 2005, Orlando, FL, paper #IMECE 2005-80227, CD-ROM
- C125 Giurgiutiu, V. (2005) "Structural Health Monitoring with Piezoelectric Wafer Active Sensors", *16th International Conference of Adaptive Structures and Technologies ICAST-2005*, 10-12 October 2005, Paris, France
- C124 Cuc, A.; Giurgiutiu, V. (2005) "Embedded Non-Destructive Evaluation for Damage Detection using Piezoelectric Wafer Active Sensors", *Proceedings of the 11th International Conference on Vibration Engineering*, Timisoara, Romania, Sept. 27-30, 2005, Vol. 50, pp. 295-300
- C123 Giurgiutiu, V.; Cuc, A. (2005) "Concepts for Using Piezoelectric Wafer Active Sensors in Rotorcraft Health Monitoring" *Proceedings of the 5th International Workshop on Structural Health Monitoring*, 11-14 September 2005, Stanford University, CA, pp. 1173-1182
- C122 Liu, W.; Giurgiutiu, V. (2005) "Signal Acquisition/Conditioning for Automated Data Collection during Structural Health Monitoring with Piezoelectric Wafer Active Sensors", *Proceedings of the 5th International Workshop on Structural Health Monitoring*, 11-14 September 2005, Stanford University, CA, pp. 606-618
- C121 Santoni-Bottai, G.; Giurgiutiu, V. (2005) "Lamb wave interaction between piezoelectric wafer active sensors and host structure in a composite material", *Proceedings of the 5th International Workshop on Structural Health Monitoring*, 11-14 September 2005, Stanford University, CA, pp. 1777-1784
- C120 Xu, B.; Giurgiutiu, V. (2005) "A Low-Cost and Field Portable Electromechanical (E/M) Impedance Analyzer for Active Structural Health Monitoring" *Proceedings of the 5th International Workshop on Structural Health Monitoring*, 11-14 September 2005, Stanford University, CA, pp. 634-644
- C119 Yu, L.; Giurgiutiu, V. (2005) "Improvement of Damage Detection with the Embedded Ultrasonics Structural Radar for Structural Health Monitoring" *Proceedings of the 5th International Workshop on Structural Health Monitoring*, 11-14 September 2005, Stanford University, CA, pp. 1081-1090
- C118 Giurgiutiu, V.; Xu, B.; Chung, J. (2005) "Development of Wireless Active System for TPS Structural Health Monitoring", *QNDE-2005 Conference*, Brunswick, ME, July 31 – August 5, 2005
- C117 Giurgiutiu, V. (2005) "New Results in the Use of Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *2nd International Workshop on Advanced Smart Materials and Smart Structures Technology*, Gyeong-ju, Korea, 21-24 July, 2005
- C116 Giurgiutiu, V. (2005) "New Results in the Use of Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference and 13th AIAA/ASME/AHS Adaptive Structures Conference*, Austin, TX, 18-21 April 2005, paper # AIAA-2005-2191
- C115 Blackshire, J. L.; Giurgiutiu, V.; Cooney, A.; Doane, J. (2005) "Characterization of Sensor Performance and Durability for Structural Health Monitoring", *SPIE 12th International Symposium on Smart Structures and Materials and 10th International Symposium on NDE for Health Monitoring and Diagnostics, Advanced Sensor Technologies for Nondestructive Evaluation and Structural Health Monitoring Conference*, 6-10 March 2005, San Diego, CA, paper # 5770-08
- C114 Bottai, G.; Giurgiutiu, V. (2005) "Simulation of the Lamb Wave Interaction between Piezoelectric Wafer Active Sensors and Host Structure", *SPIE 12th International Symposium on Smart Structures and Materials and 10th International Symposium on NDE for Health Monitoring and Diagnostics, Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems Conference*, San Diego, CA, 6-10 March 2005, San Diego, CA, paper # 5765-29
- C113 Doane, J.; Giurgiutiu, V. (2005) "An Initial Investigation of the Large Strain and Fatigue Loading Behavior of Piezoelectric Wafer Active Sensors", *SPIE 12th International Symposium on Smart Structures and Materials and 10th International Symposium on NDE for Health Monitoring and Diagnostics, Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems Conference*, 6-10 March 2005, San Diego, CA, paper # 5765-130
- C112 Jenkins, C.; Giurgiutiu, V.; Lin, B.; Liu, W. (2005) "Development of Specifications for an Integrated Piezoelectric Wafer Active Sensors System", *SPIE 12th International Symposium on Smart Structures*

- and Materials and 10th International Symposium on NDE for Health Monitoring and Diagnostics, Smart Structures and Integrated Systems Conference, San Diego, CA, 7-10 March, 2005, paper # 5764-59*
- C111 Lin, B.; Giurgiutiu, V. (2005) “Review of In-situ Fabrication Methods of Piezoelectric Wafer Active Sensor for Sensing and Actuation Applications” *SPIE 12th International Symposium on Smart Structures and Materials and 10th International Symposium on NDE for Health Monitoring and Diagnostics, Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems Conference, 6-10 March 2005, San Diego, CA, paper # 5765-04*
- C110 Liu, W.; Giurgiutiu, V. (2005) “Automation of Data Collection for PWAS-based Structural Health Monitoring”, *SPIE 12th International Symposium on Smart Structures and Materials and 10th International Symposium on NDE for Health Monitoring and Diagnostics, Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems Conference, 6-10 March 2005, San Diego, CA, paper # 5765-129*
- C109 Xu, B.; Giurgiutiu, V. (2005) “Efficient Electromechanical (E/M) Impedance Measuring Method for Active Sensor Structural Health Monitoring”, *SPIE 12th International Symposium on Smart Structures and Materials and 10th International Symposium on NDE for Health Monitoring and Diagnostics, Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, San Diego, CA, 6-10 March, 2005, San Diego, CA, paper # 5765-30*
- C108 Yu, L.; Giurgiutiu, V. (2005) “Multi-damage Detection with Embedded Ultrasonic Structural Radar Algorithm using Piezoelectric Wafer Active Sensors through Advanced Signal Processing”, *SPIE 12th International Symposium on Smart Structures and Materials and NDE for Health Monitoring and Diagnostics, Health Monitoring and Smart NDE of Structural and Biological Systems Conference, 6-10 March, 2005, San Diego, CA, paper # 5768-48*
- C107. Giurgiutiu, V.; Xu, B.; Cuc, A. (2005) “Dual Use of Traveling and Standing Lamb Waves for Structural Health Monitoring”, *IMAC XXIII Conference & Exposition on Structural Dynamics, Orlando, Florida, January 31-February 3, 2005, paper # 361*
- C106 Giurgiutiu, V.; Cuc, A. (2004) “Wave Propagation and Dispersion of Lamb Waves in Adhesively-bonded Structures”, *Proceedings of the 2004 ASME International Mechanical Engineering Congress, November 13-19, 2004, Anaheim, CA, paper # IMECE2004-61015*
- C105. Giurgiutiu, V.; LIU, W. (2004) “Automation of Data Collection for PWAS-based Structural Health Monitoring”, *Proceedings of the 2004 ASME International Mechanical Engineering Congress, November 13-19, 2004, Anaheim, CA, paper # IMECE2004-61016*
- C104. Giurgiutiu, V.; LIN, B. (2004) “Durability and Survivability of Piezoelectric Wafer Active Sensors for Structural Health Monitoring using the Electromechanical Impedance Technique”, *Proceedings of the 2004 ASME International Mechanical Engineering Congress, November 13-19, 2004, Anaheim, CA, paper # IMECE2004-60974*
- C103. YU, L.; Giurgiutiu, V. (2004) “Advanced Signal Processing Techniques for Multi-damage Detection with an Improved Embedded Ultrasonic Structural Radar Algorithm and Piezoelectric Wafer Active Sensors”, *Proceedings of the 2004 ASME International Mechanical Engineering Congress, November 13-19, 2004, Anaheim, CA, paper # IMECE2004-60969*
- C102. Giurgiutiu, V.; XU, B. (2004) “Improved Algorithm for Efficient Measurement of Electromechanical (E/M) Impedance for Structural Health Monitoring”, *Proceedings of the 2004 ASME International Mechanical Engineering Congress, November 13-19, 2004, Anaheim, CA, paper # IMECE2004-60967*
- C101. Giurgiutiu, V.; Lin, B. (2004) “In-Situ Fabrication of Composite Piezoelectric Wafer Active Sensors for Structural Health Monitoring”, *Proceedings of the 2004 ASME International Mechanical Engineering Congress, November 13-19, 2004, Anaheim, CA, paper # IMECE2004-60929*
- C100. Giurgiutiu, V. (2004) “Embedded piezoelectric wafer active sensors for material damage diagnosis and prognosis”, *2004 MS&T '04: Materials Science & Technology 2004, Materials Damage Prognosis Symposium, 26-29 September 2004, New Orleans, LA, CD-ROM*
- C99. Giurgiutiu, V. (2004) “Fundamental Studies in Embedded Ultrasonic NDE: Lamb Waves Interaction between Piezoelectric Wafer Active Sensors and Host Structure”, *Air Force Office of Scientific Research Contractors’ Meeting on Structural Mechanics, Wintergreen, Virginia, 18-20 August 2004, CD-ROM*

- C98. Giurgiutiu, V.; Blackshire, J. L.; Thomas, D. T.; Welter, J. T.; Yu, L. (2004) "Recent Advances in the Use of Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *2nd European Workshop on Structural Health Monitoring*, July 7-9, 2004, Amazeum Conference Center at Deutsches Museum, Munich, Germany, pp 1083-1090
- C97. Thomas, D. T.; Welter, J. T.; Giurgiutiu, V. (2004) "Corrosion Damage Detection with Piezoelectric Wafer Active Sensors", *2nd European Workshop on Structural Health Monitoring*, July 7-9, 2004, Amazeum Conference Center at Deutsches Museum, Munich, Germany, pp. 1253-1261
- C96. Giurgiutiu, V.; Liu, W. (2004) "The use of Functional Modules in the Mechatronics Education of non-Electrical Engineering Students", *iCEER-2004 International Conference on Engineering Education and Research "Progress Through Partnership"*, June 27-30, 2004, Omolouc, Czech Republic, CD-ROM
- C95. Giurgiutiu, V.; Lyons, J.; Rocheleau, D. (2004) "Mechatronics/Microcontroller Education for Mechanical Engineering Students at the University of South Carolina, 2004 American Society for Engineering Education Annual Conference & Exposition, June 20-23, 2004, Salt Palace Convention Center, Salt Lake City, Utah, CD-ROM
- C94. Giurgiutiu, V.; Yu, L.; Thomas, D. (2004) "Embedded Ultrasonic Structural Radar with Piezoelectric Wafer Active Sensors for Damage Detection in Cylindrical Shell Structures", *45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference and 12th AIAA/ASME/AHS Adaptive Structures Forum*, Palm Springs, CA, 19-22 Apr. 2004, paper # AIAA-2004-1983
- C93. Cuc, A.; Giurgiutiu, V. (2004) "Disbond detection in adhesively-bonded structures using piezoelectric wafer active sensors", *SPIE 11th Annual International Symposium on Smart Structures and Materials and 9th Annual International Symposium on NDE for Health Monitoring and Diagnostics*, 14-18 March 2004, San Diego, CA, paper # 5394 -09
- C92. Thomas, D.; Welter, J.; Giurgiutiu, V. (2004) "Corrosion Damage Detection with Piezoelectric Wafer Active Sensors", *SPIE 11th Annual International Symposium on Smart Structures and Materials and 9th Annual International Symposium on NDE for Health Monitoring and Diagnostics*, 14-18 March 2004, San Diego, CA, paper # 5394 -02
- C91. Giurgiutiu, V.; Xu, B. (2004) "Development of a Field-Portable Small-Size Impedance Analyzer for Structural Health Monitoring using the Electromechanical Impedance Technique", *SPIE 11th Annual International Symposium on Smart Structures and Materials and 9th Annual International Symposium on NDE for Health Monitoring and Diagnostics*, 14-18 March 2004, San Diego, CA, paper # 5391-92
- C90. Yu, L.; Bao, J.; Giurgiutiu, V. (2004) "Signal Processing Techniques for Damage Detection with Piezoelectric Wafer Active Sensors and Embedded Ultrasonic Structural Radar", *SPIE 11th Annual International Symposium on Smart Structures and Materials and 9th Annual International Symposium on NDE for Health Monitoring and Diagnostics*, 14-18 March 2004, San Diego, CA, paper # 5391-52
- C89. Giurgiutiu, V. (2003) "Embedded Ultrasonics with Piezoelectric Wafer Active Sensors for Structural Health Monitoring of Thin-Wall Structures", *Proceedings of the 2003 ASME International Mechanical Engineering Congress*, November 15-21, 2003, Washington, DC, paper # IMECE2003-43552
- C88. Giurgiutiu, V. (2003) "Piezoelectric Wafer Active Sensors (PWAS) for Structural Health Monitoring and Embedded Ultrasonics" *ESF-NSF Workshop on Advancing Technological Frontiers for Feasibility of Ageless Structures*, 2-4 October, 2003, Strasbourg, France
- C87. Giurgiutiu, V.; Yu, L. (2003) "Comparison of Short-time Fourier Transform and Wavelet Transform of Transient and Tone Burst Wave Propagation Signals For Structural Health Monitoring", *4th International Workshop on Structural Health Monitoring*, September 15-17, 2003, Stanford University, CA, pp. 1267-1274
- C86. Giurgiutiu, V. (2003) "Lamb-Wave Embedded NDE with Piezoelectric Wafer Active Sensors for Structural Health Monitoring of Thin-Wall Structures", *QNDE-2003, Review of Progress in Quantitative Nondestructive Evaluation*, Vol. 23B, July 27 – August 1, 2003, KI Convention Center, Green Bay, WI, pp. 1452-1459
- C85. Giurgiutiu, V.; Mouzon, B. (2003) "Functional Modules for Teaching Mechatronics to non-EE Engineering Students", *Proceedings of the 2003 American Society for Engineering Education Annual Conference & Exposition*, Session #1526 DELOS, June 22-25, Nashville, TN, paper #2003-505

- C84. Giurgiutiu, V.; Barnes, J. H; Thomas, D. (2003) "Multifunctional Vehicle Structural Health Monitoring Opportunities with Piezoelectric Wafer Active Sensors", *Proceedings of the 11th AIAA/ASME/AHS Adaptive Structures Conference*, 7-10 April, 2003, Norfolk, VA, Paper #AIAA 2003-1567
- C83. Giurgiutiu, V. (2003) "Lamb Wave Generation with Piezoelectric Wafer Active Sensors for Structural Health Monitoring", *SPIE 10th Annual International Symposium on Smart Structures and Materials and 8th Annual International Symposium on NDE for Health Monitoring and Diagnostics*, 2-6 March 2003, San Diego, CA. paper # 5056-17 (151 citations)
- C82. Giurgiutiu, V.; Kropas-Hughes, C. (2003) "Comparative Study of Neural-Network Damage Detection from a Statistical Set of Electro-Mechanical Impedance Spectra", *SPIE 10th Annual International Symposium on Smart Structures and Materials and 8th Annual International Symposium on NDE for Health Monitoring and Diagnostics*, 2-6 March 2003, San Diego, CA. paper # 5047-15
- C81. Giurgiutiu, V.; Bao, J. (2002) "Embedded-Ultrasonics Structural Radar for the Nondestructive Evaluation of Thin-Wall Structures" *Proceedings of the 2002 ASME International Mechanical Engineering Congress*, November 17-22, 2002, New Orleans, LA, paper # IMECE2002-39017
- C80. Giurgiutiu, V. (2002) "Damage Metric Algorithms for Active-Sensor Structural Health Monitoring", *1st European Workshop on Structural Health Monitoring*, July 10-12, 2002, Paris, France, p. 433-441
- C79. Giurgiutiu, V. (2002) "Current Issues in Vibration-Based Fault Diagnostics and Prognostics", *SPIE 7th Annual International Symposium on NDE for Health Monitoring and Diagnostics*, 17-21 March 2002, San Diego, CA, SPIE Vol. 4702, paper #4702-15, pp. 101-112
- C78. Zagrai, A. N.; Giurgiutiu, V. (2002) "Health Monitoring of Aging Aircraft Structures Using the Electro-Mechanical Impedance Method", *SPIE 7th Annual International Symposium on NDE for Health Monitoring and Diagnostics*, 17-21 March 2002, San Diego, CA, SPIE Vol. 4702, paper #4702-34, pp. 289-300
- C77. Zagrai, A. N.; Giurgiutiu, V. (2001) "The Electro-Mechanical Impedance Method for Damage Identification in Circular Plates", 142nd Meeting of the Acoustical Society of America, Fort Lauderdale, Florida, 3-7 December, 2001
- C76. Gelman, L.; Giurgiutiu, V.; Cuc, A. (2001) "Acoustical Crack Detection of the Structure: Wigner-Ville Distribution vs. Short Time Fourier Transform", 142nd Meeting of the Acoustical Society of America, Fort Lauderdale, Florida, 3-7 December, 2001
- C75. Giurgiutiu, V.; Pomirleanu, R. (2001) "Modeling and Characterization of Piezoelectric and Magnetostrictive Induced Strain Actuators", *SPIE Proceedings Smart Material and Integrated Structures*, March 5-8, Newport Beach, California, 2001
- C74. Pomirleanu, R.; Giurgiutiu, V. (2001) "Modeling and Characterization of High-Force High-Stroke Piezoelectric Actuator", Ninth Workshop on Aeroelasticity of Rotorcraft Systems, University of Michigan, Ann Arbor, October 22-24, 2001
- C73. Giurgiutiu, V.; Zagrai, A.; Bao, J.J. (2001) "Damage Identification in Aging Aircraft Structures with Piezoelectric Wafer Active Sensors", 12th International Conference on Adaptive Structures Technology, 15-17 October 2001, University of Maryland, College Park, MD, pp. 178-187
- C72. Zagrai, A. N.; Giurgiutiu, V. (2001) "Electro-Mechanical Impedance Method for Crack Detection in Thin-Wall Structures", *Structural Health Monitoring – The Demands and Challenges 2001*, Proceedings of the 3rd International Workshop of Structural Health Monitoring, September 12-14, 2001, Stanford University, CA, CRC Press, ISBN 1566768810, pp. 177-186
- C71. Gelman, L. M.; Giurgiutiu, V; Petrunin, I. V. (2001) "Crack Diagnostics via Fourier Transform: Real and Imaginary Components vs. Power Spectrum Density", *Structural Health Monitoring – The Demands and Challenges 2001*, Proceedings of the 3rd International Workshop of Structural Health Monitoring, September 12-14, 2001, Stanford University, CA, September 12-14, 2001, Stanford University, CA, CRC Press, ISBN 1566768810, pp. 1382-1389
- C70. Giurgiutiu, V.; Bao, J. J.; Zao, W.; Zagrai, A.; Redmond, J.; Pott, J. (2001) "Active Sensors for Aging Aircraft Structural Health Monitoring", 12th Annual AeroMat Conference & Exposition, 11-14 June 2001, Long Beach Convention Center, Long Beach, CA

- C69. Giurgiutiu, V.; Zagrai, A.; Bao, J. J. (2001) "Embedded Active Sensors for In-situ Structural Health Monitoring of Aging Aircraft Structures", Proceedings of the 7th ASME NDE Topical Conference, April 23-25, 2001, San Antonio, TX, NDE-Vol. 20, pp. 107-116
- C68. Giurgiutiu V.; Cuc, A.; Goodman, P. (2001) "Review of Vibration-Based Helicopters Health and Usage Monitoring Methods", 55th Meeting of the Society for Machinery Failure Prevention Technology, April 2-5, 2001, Virginia Beach, VA, pp. 69-78
- C67. Giurgiutiu, V.; Craciun, G.; Rekers, A. (2001) "Cost Benefit Analysis Models for Evaluation of VMEP-HUMS Project", 55th Meeting of the Society for Machinery Failure Prevention Technology, April 2-5, 2001, Virginia Beach, VA, pp. 285-294
- C66. Giurgiutiu, V.; Pomirleanu, R. (2001) "Modeling and Characterization of Piezoelectric and Magnetostrictive Induced Strain Actuators", SPIE 8th Annual International Symposium on Smart Structures and Materials, 4-8 March 2001, Newport Beach, CA, 4327-73, SPIE Vol. 4327, pp. 610-619
- C65. Giurgiutiu, V.; Bao, J.; Zhao, W. (2001) "Active Sensor Wave Propagation Health Monitoring of Beam and Plate Structures", SPIE 8th Annual International Symposium on Smart Structures and Materials, 4-8 March 2001, Newport Beach, CA, 4327-32, SPIE Vol. 4327, pp. 234-245 (59 citations)
- C64. Giurgiutiu, V.; Zagrai, A. (2001) "Electro-Mechanical Impedance Method for Crack Detection in Metallic Plates", SPIE 8th Annual International Symposium on Smart Structures and Materials and 6th Annual International Symposium on NDE for Health Monitoring and Diagnostics, 4-8 March 2001, Newport Beach, CA, 4335-22, pp. 131-142
- C63. Giurgiutiu, V.; Zagrai, A. (2000) "Damage Detection in Simulated Aging-Aircraft Panels Using the Electro-Mechanical Impedance Technique", Proceedings of the ASME Aerospace and Materials Divisions, November 5-10, 2000, Orlando, FL, pp. 349-358
- C62. Giurgiutiu, V. (2000) "Mechatronics Aspects of Smart Materials Induced Strain Actuation", 7th Mechatronics Forum International Conference, September 6-8 2000, Atlanta, GA, M2000-250, CD-ROM
- C61. Giurgiutiu, V.; Bayoumi, A.-M. E.; Rogers, C. A.; Nall, G. (2000) "Mechatronics and Smart Structures: Emerging Engineering Disciplines for the Next Millennium", 7th Mechatronics Forum International Conference, September 6-8 2000, Atlanta, GA, M2000-002, CD-ROM
- C60. Giurgiutiu, V.; Rogers, C. A. (2000) "Modal Expansion Modeling of the Electro-Mechanical (E/M) Impedance Response of 1-D Structures", European COST F3 Conference on System Identification & Structural Health Monitoring, 6-9 June 2000, Universidad Politecnica de Madrid, Spain, pp. 609-618
- C59. Giurgiutiu, V.; Grabill, P.; Wroblewski, D.; Grant, L. (2000) "Helicopter Health Monitoring and Failure Prevention through Vibration Management Enhancement Program", 54th Meeting of the Society for Machinery Failure Prevention Technology, May 1-4, 2000, Virginia Beach, VA, pp. 593-602
- C58. Giurgiutiu, V. (2000) "Recent Advances in Smart-Material Rotor Control Actuation", 41st AIAA Structures, Structural Dynamics, and Materials Conference, 3-4 April 2000, Atlanta, GA, AIAA-2000-1709-CP, CD-ROM
- C57. Dutta, S.; Giurgiutiu, V. (2000) "Health Monitoring and Quality Assurance for Rotary Micromachines and Active Sensors", 8th Int. Symposium on Transport Phenomena and Dynamics of Rotating Machinery (ISROMAC-8), March 26-30, 2000, Honolulu, Hawaii
- C56. Giurgiutiu, V.; Zagrai, A. (2000) "The Use of Smart Materials Technologies in Radiation Environment and Nuclear Industry", SPIE 7th Annual International Symposium on Smart Structures and Materials, 5-9 March 2000, Newport Beach, CA, 3985-103, pp. 855-865
- C55. Giurgiutiu, V.; Redmond, J.; Roach, D.; Rackow, K. (2000) "Active Sensors for Health Monitoring of Aging Aerospace Structures", SPIE 7th Annual International Symposium on Smart Structures and Materials, 5-9 March 2000, Newport Beach, CA, 3985-32, pp. 294-305 (49 citations)
- C54. Giurgiutiu, V.; Rogers, C. A. (1999) "Modeling of the Electro-Mechanical (E/M) Impedance Response of a Damaged Composite Beam", Proceedings of the ASME Aerospace and Materials Divisions, November 14-19, 1999, Nashville, TN, AD-Vol. 59, MD-Vol. 87, pp. 39-46
- C53. Giurgiutiu, V.; Rogers, C. A. (1999) "Review of Smart-Materials Rotor Control Solutions", Eighth ARO Workshop on Aeroelasticity of Rotorcraft Systems, Oct. 18-20, 1999, Penn State University

- C52. Giurgiutiu, V.; Jichi, F.; Rogers, C. A.; Quattrone, R.; Berman, J. B., "Experimental Study of Magnetostrictive Tagged Composite Strain Sensing Response for Structure Health Monitoring", 2nd International Workshop of Structural Health Monitoring, Sept. 8-10, 1999, Stanford U., CA, pp. 690-699
- C51. Giurgiutiu, V.; Rogers, C. A., "Recent Progress in the Application of E/M Impedance Method to Structural Health Monitoring, Damage Detection and Failure Prevention", 2nd International Workshop of Structural Health Monitoring, Sept. 8-10, 1999, Stanford U., CA, pp. 298-307
- C50. Giurgiutiu, V.; Rogers, C. A., "Review of Smart-Materials Actuation Solutions for Aeroelastic and Vibration Control", International Forum on Aeroelasticity and Structural Dynamics, May 22-25, 1999, Williamsburg, VA
- C49. Giurgiutiu, V.; Lyons, J.; Petrou, M. F.; Laub, D.; Whitley, S., Experimental Fracture Mechanics for the Bond between Composite Overlays and Concrete Substrate, International Composites EXPO'99, May 10-13, 1999, Cincinnati, OH, pp. 4D1-4D6
- C48. Giurgiutiu, V.; Rogers, C. A., "New Results in the Application of E/M Impedance Method to Machinery Health Monitoring and Failure Prevention", 53rd Meeting of the Society for Machinery Failure Prevention Technology, April 19-22, 1999, Virginia Beach, VA, pp. 147-155
- C47. Deng, X.; Giurgiutiu, V., "Impact Monitoring and Fault Detection Using Piezoelectric Transducers and Wavelet Analysis", 54th Meeting of the Society for Machinery Failure Prevention Technology, April 19-22, 1999, Virginia Beach, VA, pp. 167-172
- C46. Dunn, K. A., Louthan, M. R., Iyer, N. C., Giurgiutiu, V., Petrou, M. F., Laub, D. E., "Application of Smart Materials/Technology at the Savannah River Site", SPIE 6th Annual International Symposium on Smart Structures and Materials, 1-5 March 1999, Newport Beach, CA, paper #3671-67, pp. 64-75
- C45. Deng, X., Wang, Q., Giurgiutiu, V., "Structural Health Monitoring Using Active Sensors and Wavelet Transforms", SPIE 6th Annual International Symposium on Smart Structures and Materials, 1-5 March 1999, Newport Beach, CA, paper #3667-35
- C44. Giurgiutiu, V., Reynolds, A. P.; Rogers, C. A., "Details of the Electromechanical Impedance Health Monitoring of Spot Welded Structural Joints", SPIE 6th Annual International Symposium on Smart Structures and Materials, 1-5 March 1999, Newport Beach, CA, paper #3667-34
- C43. Giurgiutiu, V., Reynolds, A., Rogers, C. A., Chao, Y. I., Sutton, M. A. "E/M Impedance Health Monitoring of Spot-welded Structural Joints", Proceedings of the ASME Aerospace and Materials Divisions, November 1998, Anaheim, CA, AD-Vol. 57, MD-Vol. 83, pp. 27-32
- C42. Giurgiutiu, V.; Dutta, S.; Rogers, C. A., "Compact High-Frequency Solid-State Modular Pump for Hydraulic Actuation", ICAST'98 Ninth International Conference on Adaptive Structures and Technologies, October 14-16, 1998, Cambridge, MA, pp. 386-395
- C41. Giurgiutiu, V.; Rogers, C. A., "Adaptive NDE and Health Monitoring Methods for Civil Engineering Structures", 1998 Structural Engineers World Congress, July 18-23, 1998, San Francisco, CA, paper #T176-4, CD-ROM
- C40. Giurgiutiu, V.; Rogers, C. A., "Application of the Electro-Mechanical (E/M) Impedance Method to Machinery Failure Prevention", 52nd Meeting of the Society for Machinery Failure Prevention Technology, March 30 - April 2, 1998, Virginia Beach, VA, pp. 271-280
- C39. Giurgiutiu, V.; Rogers, C. A., "Recent Advancements in the Electro-Mechanical (E/M) Impedance Method for Structural Health Monitoring and NDE", SPIE 5th International Symposium on Smart Structures and Materials, 1-5 March 1998, Catamaran Resort Hotel, San Diego, CA, paper #3329, pp. 536-547 (63 citations).
- C38. Giurgiutiu, V.; Lyons, J.; Petrou, M.; Dutta, S.; Rogers, C. A., "Strength, Durability, and Health Monitoring of Composite Overlays on Civil Engineering Structures", International Composites Expo ICE-98, Nashville, TN, January 19-21, 1998, pp. 13.D.1-13.D.6
- C37. Giurgiutiu, V., Rogers, C. A., Chao, Y. J., Sutton, M. A., and Deng, X., "Adaptive Health Monitoring Concepts for Spot-Welded and Weld-bonded Structural Joints", Proceedings of the ASME Aerospace Division, AD-Vol. 54, ASME, November 1997, pp. 99-104

- C36. Giurgiutiu, V.; Rogers, C. A., “Electro–mechanical (E/M) Impedance Method for Structural Health Monitoring and Nondestructive Evaluation”, International Workshop on Structural Health Monitoring, Stanford University, CA, September 18–20, 1997, pp. 433–444.
- C35. Giurgiutiu, V.; Rogers, C. A.; McNeil S., “Static and Dynamic Testing of Large–Amplitude Rotary Induced–Strain (LARIS) Actuator”, 38th AIAA Structures, Structural Dynamics, and Materials Conference, and Adaptive Structures Forum, Kissimmee, FL, April 7–10, 1997, paper #AIAA-97-1350–CP, pp. 1717–1727
- C34. Giurgiutiu, V.; Rogers, C. A.; Zuidervaart, J., “Incrementally Adjustable Rotor–Blade Tracking Tab Using SMA Composites”, 38th AIAA Structures, Structural Dynamics, and Materials Conference, and Adaptive Structures Forum, Kissimmee, FL, April 7–10, 1997, paper #AIAA-97-1387–CP, pp. 1456–1466
- C33. Giurgiutiu, V.; Rogers, C. A.; Zuidervaart, J., “Design and Preliminary Tests of an SMA Active Composite Tab”, SPIE 4th Annual Symposium on Smart Structures and Materials, San Diego, CA, 2–6 March 1997, paper #3041–17, pp. 206–216
- C32. Giurgiutiu, V.; Rogers, C. A.; McNeil S., “Large–Amplitude Rotary Induced–Strain (LARIS) Actuator Proof–of–Concept Demonstrator”, SPIE 4th Annual Symposium on Smart Structures and Materials, San Diego, CA, 2–6 March 1997, paper #3041–38, pp. 450–460
- C31. Giurgiutiu, V.; Gagliano, J.; Quattrone, R.; Berman, J.; Voyles, J., “Tagged Composites Mechanical Properties Investigation and Correlation with Fractographic Examination”, International Composites EXPO ‘97, January 27–29, 1997, Nashville, TN., pp. 19D/1-6
- C30. Chen, Zao; Giurgiutiu, V.; Rogers, C.A.; Quattrone, R.; Berman, J., “Improved Active Tagging Non–Destructive Evaluation Techniques for Full–Scale Structural Composite Elements”, International Composites EXPO ‘98, January 27–29, 1997, Nashville, TN., pp. 19C/1-6
- C29. Rusovici, R., Giurgiutiu, V., and Rogers, C. A., “Experimental Study of Hydraulically–Amplified Induced Strain Actuator Proof-of-Concept Demonstrator”, Proceedings of the ASME Aerospace Division, AD–Vol. 52, ASME, November 1996
- C28. Zao Chen, Giurgiutiu, V., Rogers, C.A., Quattrone, R., and Berman, J., “Active Tagging Non–Destructive Evaluation Techniques for Full–Scale Structural Composite Elements”, *Proceedings of the ASME Aerospace Division*, AD–Vol. 52, ASME, November 1996
- C27. Giurgiutiu, V.; Rogers, C.A., “Power and Energy Characteristics of Solid–State Actuators”, *7th International Conference on Adaptive Structures Technology*, Sept. 23–25, 1996, Rome, Italy
- C26. Giurgiutiu, V.; Reifsnider, K.; Rogers, C.A., “Rate–Independent Energy Dissipation Mechanisms in Fiber–Matrix Material Systems”, *37th AIAA Structures, Structural Dynamics, and Materials Conference*, Salt–Lake City, UT, April 15–17, 1996, paper #AIAA-96-1420–CP, pp. 897–907
- C25. Giurgiutiu, V.; Rogers, C.A.; Rusovici, R., “Power and Energy Issues in the Induced–Strain Actuation for Aerospace Adaptive Control”, *37th AIAA Structures, Structural Dynamics, and Materials Conference*, Salt–Lake City, UT, April 15–17, 1996, paper #AIAA-96-1300–CP, pp. 301–311
- C24. Giurgiutiu, V.; Rogers, C.A., “Comparison of Solid–State Actuators Based on Power and Energy Criteria”, *SPIE 3rd Symposium on Smart Structures and Materials*, Feb. 26–29, 1996, San Diego, CA, paper #2717–23, pp. 287–300
- C23. Giurgiutiu, V.; Zao, Chen; Lalande, F.; Rogers, C.A.; Quattrone, R.; Berman, J., “Passive and Active Tagging of Reinforced Composites for In–Process and In–Field Non–Destructive Evaluation”, *SPIE 3rd Symposium on Smart Structures and Materials*, Feb. 26–29, 1996, San Diego, CA, paper #2717–31, pp. 361–372
- C22. Giurgiutiu, V.; Rogers, C.A.; Rusovici, R., “Solid–State actuation of Rotor Blade Servo–Flap for Active Vibration Control”, *6th International Conference on Adaptive Structures*, November 13–15, 1995, Key West, FL, Technomic Pub. Co., pp. 217–229
- C21. Giurgiutiu, V.; Rogers, C.A., “Energy–Based Comparison of High–Power Commercially–Available Induced–Strain Actuators”, *6th International Conference on Adaptive Structures*, November 13–15, 1995, Key West, FL, Technomic Pub. Co., pp. 113–130

- C20. Giurgiutiu, V.; Chaudhry, Z.; Rogers, C.A., “Energy-Based Comparison of Solid-State Actuators”, *SEM Micro-integrated Smart Materials and Structures Conference*, Oct. 11–12, 1995, Williamsburg, VA, pp. 111–128
- C19. Giurgiutiu, V.; Graffeo, J.; Dillard, D.; Ionita, A., “Computational Aspects of Using the Integral Equations Method in the Analysis of Adhesive Layer Cracks”, *ASTM 27th National Symposium on Fatigue and Fracture Mechanics*, June 26–29, 1995, Williamsburg, VA
- C18. Giurgiutiu, V.; Chaudhry, Z.; Rogers, C.A., “Issues in the Design and Experimentation of Induced Strain Actuators for Rotor Blade Aeroelastic Control”, *Tenth VPI&SU Symposium on Structural Dynamics and Control*, May 8–10, 1995, Blacksburg, VA, pp. 227–238
- C17. Giurgiutiu, V.; Reifsnider, K. L.; Kriz, R. D.; Ahn, B. K., “Influence of Fiber Coating and Interphase on Polymeric Composites Strength”, *36th AIAA Structures, Structural Dynamics, and Materials Conference*, April 9–12, 1995, New Orleans, paper #AIAA-95-1212-CP
- C16. Giurgiutiu, V.; Chaudhry, Z.; Rogers, C.A., “Effective Use of Induced Strain Actuators in Static and Dynamic Applications”, *37th AIAA Structures, Structural Dynamics, and Materials Conference*, April 9–12, 1995, New Orleans, paper #AIAA-95-1095
- C15. Giurgiutiu, V.; Chaudhry, Z.; Rogers, C.A., “Stiffness issues in the Design of ISA Displacement Amplification Devices: Case Study of a Hydraulic Displacement Amplifier”, *SPIE North American Conference on Smart Structures and Materials '95*, 26 Feb.–3 March 1995, San Diego, CA, paper #2443–12
- C14. Fowler, L. P.; Cole, D. G.; Robertshaw, H.; Giurgiutiu, V., “Individual Feedforward–Feedback Control of a Flexible Rotor Blade: Comparison of Approaches”, *SPIE North American Conference on Smart Structures and Materials '95*, 26 Feb.–3 March 1995, San Diego, CA, paper #2442–45
- C13. Giurgiutiu, V.; Chaudhry, Z.; Rogers, C.A., “Efficient Use of Induced Strain Actuators in Aeroelastic Active Control”, *Second European Conference on Smart Structures and Materials*, October 12–14, 1994, Glasgow, UK, paper #2361, pp. 273–276
- C12. Giurgiutiu, V.; Chaudhry, Z.; Rogers, C.A., “Analysis of Power Delivery Capability of Induced Strain Actuators for Dynamic Applications”, *2nd International Conference on Intelligent Materials, ICIM'94*, June 5–8, 1994, Williamsburg, VA, pp. 565–576
- C11. Giurgiutiu, V.; Reifsnider, K. L.; Kriz, R. D., “Advanced Models for Strength Prediction of Quasi-Random Fiber Composites”, *35th AIAA Structures, Structural Dynamics, and Materials Conference*, April 18–20, 1994, Hilton Head, S. C., paper #AIAA-94-1529
- C10. Giurgiutiu, V.; Chaudhry, Z.; Rogers, C.A., “Active Control of Helicopter Rotor Blades with Induced Strain Actuators”, *36th AIAA Structures, Structural Dynamics, and Materials Conference*, April 18–20, 1994, Hilton Head, S. C., paper #AIAA-94-1765, pp. 288–298
- C9. Giurgiutiu, V.; Chaudhry, Z.; Rogers, C.A., “Engineering Feasibility of Induced–Strain Actuators for Rotor Blade Active Vibration Control”, *SPIE North American Conference on Smart Structures and Materials '94*, 13–18 February 1994, Orlando, FL, paper #2190–11, pp. 107–122.
- C8. Udrescu, R.; Giurgiutiu, V., “Variable Resistance Transducers for Impact Load Measurements in Experimental Modal Analysis”, *13th International Conference on Force and Mass Measurement*, May 11–14, 1993, Helsinki, Finland
- C7. Giurgiutiu, V.; Traichioiu, O.; Popescu, T.; Ganescu, A., “New Results in Experimental Elasto–Plastic Analysis”, *Conference on Modern Practice in Stress and Vibrations Analysis*, April 20–22, 1993, Sheffield, UK, pp. 379–390
- C6. Gaita, L.; Udrescu, R.; Giurgiutiu, V.; Pavel, M., “Highly Efficient Sensitivity Analysis for Aero–servo–elastic Optimization of Helicopter Rotors”, *18th European Rotorcraft Forum / 10th European Helicopter Symposium*, Sept. 15–18, 1992, Avignon, France, paper #13
- C5. Giurgiutiu, V.; Flutur, V., “Several Aspects regarding the Static Tests of Modern Aircraft” (in Romanian), *5th National Symposium on Strain Gauge Measurements*, 1989, Galati, Romania
- C4. Giurgiutiu, V.; Kalmutchi, V., “Vibration of Rotor Blades with Various Hub Conditions”, *6th Conference on Vibrations of Machinery*, 1988, Timisoara, Romania, pp. 185–194
- C3. Giurgiutiu, V., “Vibrations and Aeroelastic Tests of Modern Aircraft”, in *5th Conference on Vibrations of Machinery*, 1985, Timisoara, Romania

- C2. Giurgiutiu, V.; Stafford, R. O., “Semi-analytic Determination of Frequencies and Mode-Shapes for Propellers and Helicopter Rotors”, *1st European Rotorcraft and Power-Lift Aircraft Forum*, 1975, Southampton University, UK
- C1. Giurgiutiu, V.; Stafford, R. O., “An Improvement on Simultaneous Vectors Iteration”, *3rd Post-Conference on Computational Aspects of the Finite, Element Method*, 1975, Imperial College, London, UK

4.5.6 PhD Dissertation

“Vibrations and Dynamic Stability of Rotor Blades” Ph.D. Dissertation, London University, Imperial College for Science and Technology, Aeronautics Department, Doctor of Philosophy, March 1977, London, UK

4.5.7 Patents

- P7. Giurgiutiu, V.; Gresil, M.; Roman, C. (2015), "Acousto-Ultrasonic Sensor", Patent No. US 9,158,054 B2 of Oct 13, 2015
- P6. Giurgiutiu, V.; Bao, J.; Peterson, G.W.; Rubel, G.; (2014) "Methods and Sensors for the Detection of Active Carbon Filters Degradation with EMIS-ECIS PWAS" Patent No. US 8, 814, 996 B2, Date of Patent Aug. 26, 2014
- P5. Giurgiutiu, V.; Kendall, J. R. (2012) "Piezoelectric Sensor" Patent No. US 8,102,101B2, of Jan. 24, 2012
- P4. Giurgiutiu, V.; Yu, L.; Bottai, G. (2011) "Structural Health Monitoring Apparatus and Methodology" U.S. Patent No. 7,881,881 of Feb. 1, 2011
- P3. Giurgiutiu, V.; Xu, B. (2007) "Self-Processing Integrated Damage Assessment Sensor for Structural Health Monitoring (SPIDAS)" U.S. Patent No. 7,174,255 of Feb. 6, 2007
- P2. Giurgiutiu, V. (2006) "In-situ structural health monitoring, diagnostics, and prognostics system utilizing thin piezoelectric sensors" U.S. Patent No. 7,024,315 of April 8, 2006
- P1. Giurgiutiu, V.; Bao, J.; Zagari, A. N. (2006) "Structural health monitoring system utilizing guided Lamb waves embedded ultrasonic structural radar" U.S. Patent No. 6,996,480 of February 7, 2006

4.5.8 Invention Disclosures to the University Intellectual Property Management Office

31. Giurgiutiu, V.; Faisal Haider, Md.; Poddar, B (2018) "Analytical Global-Local (AGL) Prediction of Guided Wave Scattering from Discontinuities", USC-IPMO, Disclosure ID No. 01324, May 2018
30. Lin, B.; Yu, L.; Giurgiutiu, V.; Faisal Haider, Md. (2018) "In-situ Fiber-optic Temperature Field Measurement during Thermoplastic Composite Welding and other Applications", USC-IPMO, Disclosure ID No. 01310, Feb. 2018
29. Giurgiutiu, V.; Bhuiyan, Md Y; "Fingerprints of Fatigue Crack Generated Acoustic Emission Waveforms", US Patent Application No. 62/531,387, July 12, 2017
28. Giurgiutiu, V.; Bao, JJ; Poddar, B (2017) "Identify Structural Defect Geometric Features from Acoustic Emission Waveforms", USC-IPMO Disclosure ID No. 01199, Provisional Patent USSN 62/470,553, March 16, 2017
27. Giurgiutiu, V.; Frankforter, E. (2016) "Acoustic black hole ABH sensor", USC-IPMO, Disclosure ID No. 01190, Dec. 2015, Provisional Patent USSN 62/506,705 filed May 16, 2017
26. van Tooren, M.; Giurgiutiu, V.; Ziehl, P.; Lin, B. (2015) "Structural health monitoring method and system", USC-IPMO, Disclosure ID No. 01163, Oct. 2015
25. Giurgiutiu, V.; Gresil, M.; Lin, B.; Mendez-Torres, A. (2013) "Low cost multi-mode structural health monitor with radiation sensing functionality" USC-IPMO, Disclosure ID No. 01057, July 2013
24. Giurgiutiu, V.; Gresil, M.; Roman, C. (2011) "Novel Acousto-Ultrasonic Piezoelectric-Fiber Bragg Grating (PFBG) Sensor", USC-IPMO, Disclosure ID No. 00937, provisional filing No. 61/554,716, Nov. 2011
23. Giurgiutiu, V.; Bao, Jingjing; Rubel, Glenn; Peterson, Gregory William (2010) "Method and Sensor for the Detection of Active Carbon Filters Degradation with EMIS-ECIS PWAS", USC-IPMO, Disclosure ID No. 00872, provisional filing No. 61/458,735, Dec. 2010
22. Giurgiutiu, V.; Lin, B.; Bao, J. (2010) "In-Process Monitoring for Composite Parts Quality Control using Piezoelectric Wafer Active Sensors (PWAS) Technologies", USC-IPMO, Disclosure ID No. 00847, June 2010
21. Giurgiutiu, V.; Lin, B.; Friedman, Harold; Kheradvar, Arash (2010) "NEFIG Nano-electric Field Implanted Generator for Modulating Wound Healing Response", USC-IPMO, Disclosure ID No. 00836, May 2010
20. Giurgiutiu, V.; Lin, B. (2008) "Nano-PWAS: Structurally Integrated Thin-Film Active Sensors for Structural Health Monitoring", USC-IPMO, Disclosure ID No. 00759, Oct. 2008
19. Giurgiutiu, V.; Yu, L.; Liu, W.; Xu, B.; Bottai, G. (2008) Structural Health Monitoring Apparatus and Methodology", USC-IPMO, Disclosure ID No. 00730, March 2008

18. Giurgiutiu, V.; Yu, L. (2006) "Optimized Embedded Ultrasonics Structural Radar (EUSR) with Piezoelectric Wafer Active Sensors (PWAS) Phased Arrays for In-situ Wide-area Damage Detection during SHM and NDE", USC-IPMO, Disclosure ID No. 00597, July 2006
18. Giurgiutiu, V.; Xu, B. (2006) "High Temperature Piezoelectric Wafer Active Sensors (HT-PWAS)", USC-IPMO, Disclosure ID No. 00591, June 2006
17. Kendall, J.; Giurgiutiu, V. (2006) "Localized Electric Field Excitation within a Continuous Medium", USC-IPMO, Disclosure ID No. 00588, June 2006
16. Kendall, J.; Giurgiutiu, V. (2006) "Cartesian Approach to Localization of Electric Field Excitation and Harvesting within Continuous Dielectric Medium", USC-IPMO, Disclosure ID No. 00587, June 2006
15. Giurgiutiu, V.; Xu, B. (2004) "FEMIA – Fast Electromechanical Impedance Algorithm" USC-IPMO, Disclosure ID No. 00407 of 09/28/2003
14. Giurgiutiu, V.; Liu, W. (2004) "ASCU-PWAS – Automatic Signal Collection Unit for PWAS-based Structural Health Monitoring" USC-IPMO, Disclosure ID No. 00433 of 4/23/2004
13. Giurgiutiu, V. (2003) "Nano Piezo Active Sensors for Structural Health Monitoring and Embedded NDE", USC-IPMO, Disclosure ID No. 00418 of 12/9/2003
12. Bender, J. W.; Friedman, H.; Giurgiutiu, V. "In Vivo Sensing of Adema, Cellular Response, Fibrosis, and Capsular Contraction" USC-IPMO, Disclosure ID No. 00408 of 10/30/2003
11. Giurgiutiu, V.; Xu, B. (2003) "CEMIA – Compact Electromechanical Impedance Analyzer for Structural Health Monitoring", USC-IPMO, Disclosure ID No. 00407 of 09/28/2003
10. Giurgiutiu, V.; Zagrai, A. N.; Bao, J. J. (2002) "Piezoelectric-Wafer Active Sensors (PWAS)", USC-IPMO, Disclosure ID No. 00330 of 03/08/2002
9. Giurgiutiu, V.; Bao, J. (2002) "Embedded-Ultrasonics Structural Radar (EUSR) with Piezoelectric-Wafer Active Sensors (PWAS) for Wide-Area Nondestructive Evaluation of Thin-Wall Structures", USC-IPMO, Disclosure ID No. 00327 of 02/13/2002
8. Giurgiutiu, V. (2001) "Inexpensive Method for Creating Simulated Cracks (Narrow Slits) in Thin-Walled Structures for NDI/NDT/NDE Calibration", USC-IPMO, Disclosure ID No. 00319 of 12/24/2001
7. Giurgiutiu, V. (2001) "In-situ Structural Health Monitoring, Diagnostics, and Prognostics utilizing Smart Active Sensors with Embedded Intelligence and Wireless Installation", USC-IPMO, Disclosure ID No. 00284, 1/24/2001
6. Deng, X.; Wang, Q.; Giurgiutiu, V. (1998) "A Simple and Accurate Method for Determining Wave Velocities in Solids and Structures", USC-OTT Disclosure ID No. 00187, 9/15/98
5. Giurgiutiu, V., and Rogers, C.A. (1997) "Electro-Mechanical (E/M) Impedance Technique for Structural Health Monitoring and Nondestructive Evaluation", Mechanical Engineering Department, USC-IPMO Disclosure ID No. 00162, 1997
4. Giurgiutiu, V.; Rogers, C.A. (1997) "Active SMA Composite Rotor Blade Tracking Tab Method and System", USC-IPMO Disclosure ID No. 00156, 5/14/97
3. Giurgiutiu, V. Dutta, S., and Rogers, C.A. (1997) "Compact High-Frequency Solid-state Modular Pump for Hydraulic Actuation", Mechanical Engineering Department, USC-IPMO Disclosure ID No. 00152, April 1997
2. Giurgiutiu, V. and Rogers, C.A. (1996) "Large-Amplitude Rotary Induced-Strain Actuator (LARIS Actuator)", CIMSS, Virginia Tech, VTIP Disclosure No. 96-044, 1996
1. Giurgiutiu, V., Chaudhry, Z., and Rogers, C. A. (1994) "Hydraulically-Amplified High-Displacement Induced-Strain Actuator (HAHDIS Actuator)", CIMSS, Virginia Tech, Patent application CIT Docket 581-VPI, VTIP Disclosure No. 94-049, 1994

5 III. PROFESSIONAL AND SCIENTIFIC SERVICE

I hold **Professional Engineer** registration in South Carolina (#19065) and in UK (#429027)

5.1 ADVISORY AND CONSULTING SERVICES TO PRIVATE INDUSTRY AND GOVERNMENT AGENCIES

I have done advising and consulting services to private industry and government agencies such as: DOD South Carolina Army National Guard and US Army TMDE, NASA, BMW Manufacturing Corporation, DOE Savannah River Site, DOD US Army Corps of Engineers Construction Engineering Research Laboratory (CERL), DOE Sandia National Labs, Albuquerque, NM, Clark Schwebel Tech Fab, Anderson, SC, Tiburon Associates, Inc., etc.

5.2 ADMINISTRATIVE AND COMMITTEE DUTIES

I am taking an active role in university life at departmental, college, and university levels. A few noticeable assignments are listed below:

1. Interim Associate Dean for Research and Graduate Education, College of Engineering and Computing, University of South Carolina, Aug. 2009 – Aug. 2013
2. University of South Carolina Committee on Curricula and Courses, **Chair**, July 2003 – June 2006
3. University of South Carolina Intellectual Property Committee, member, July 1998 – June 2000; **Chair**, July 2000 – June 2001
4. University of South Carolina Committee on Admissions, July 2001 – June 2004

5.3 PROFESSIONAL SOCIETIES MEMBERSHIPS

I am fellow of the following professional societies:

1. American Society of Mechanical Engineers (ASME) **Fellow – 2006**, Adaptive Structures and Material Systems TC
2. Royal Aeronautical Society, UK (RAeS) **Fellow – 2006**, Structures TC
3. American Institute of Aeronautics and Astronautics (AIAA), **Associate Fellow–2009**, Adaptive Structures TC

I am also member of several other professional societies and technical committees as follows:

1. American Society of Civil Engineers (ASCE) Emerging Materials sub-TC, 1999-2016
2. American Society for Testing and Materials (ASTM), Committee E08 on Fatigue and Fracture; Committee D30 on Composite Materials
3. Institute of Electrical and Electronic Engineers (IEEE), **Senior Member-2011**, Ultrasonics, Ferroelectrics, and Frequency Control Technical Society
4. Society for Experimental Mechanics (SEM) Smart Structures TC
5. American Helicopter Society (AHS) Rotorcraft Dynamics and Health and Usage Monitoring
6. International Society for Optics and Photonics (SPIE)

5.4 PROPOSALS REVIEWER AND MEMBER OF REVIEW PANELS TO STATE AND FEDERAL AGENCIES

I have asked to review funding proposals for several national and international agencies such as National Science Foundation, Army Research Office, Air Force Office of Scientific Research, Office of Naval Research, SBIR/STTR, South Carolina Space Grant Consortium, National Research Council of Canada, European Science Foundation, etc. I have served at agency evaluation boards such as organized by NASA HQ, National Materials Advisory Board of the National Research Council, etc.

Through a competitive search, I was selected in 2006 to serve as **Program Manager for Structural Mechanics in the Air Force Office of Scientific Research** in suburban Washington, DC under an IPA agreement between my university and the US Air Force. In this capacity, I had reviewed a very number of funding proposals, organize review panels, etc.

5.5 EDITOR TO MAJOR NATIONAL AND INTERNATIONAL JOURNALS





(Please see information listed on page 3)

5.6 REVIEWER TO MAJOR NATIONAL AND INTERNATIONAL JOURNALS

Besides the reviewing duties required by being associate editor to the journals listed on page 3, I am also reviewer for a considerable number of other professional journals of international circulation, which are not list here for sake of brevity.

5.7 CHAIR AND CO-CHAIR AT MAJOR NATIONAL AND INTERNATIONAL CONFERENCES

I take an active role in numerous national and international conferences as conference co-chair, member of the technical/international organizing committee, session chair, session organizer, etc. as for example:

Symposium Chairs	Symposium Cochairs
 Victor Giurgiutiu , Univ. of South Carolina (United States)	 Jayanth N. Kudva , NextGen Aeronautics, Inc.(United States)
 Christopher S. Lynch , Univ. of California, Los Angeles (United States)	 Theodoros E. Matikas , Univ. of Ioannina (Greece)

- Chair of the SPIE *International Symposium on Smart Structures and NDE* that includes 10 concurring conferences, March 2014 and 2015, San Diego, CA <http://spie.org/x12229.xml>

Symposium Chairs	Symposium Co-chairs
 Norbert Meyendorf , Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren (Germany) and Univ. of Dayton (USA)	 Victor Giurgiutiu , Univ. of South Carolina (USA)
 Norman Wereley , Univ. of Maryland, College Park (USA)	 Christopher S. Lynch , Univ. of California, Los Angeles (USA)

- Co-Chair of the SPIE *International Symposium on Smart Structures and NDE* (including 10 conferences), March 2012 and 2013, San Diego, CA
- Session developer at the ASME *Pressure Vessels and Piping Conference* -- MF-23 Advanced Sensor Technologies for Monitoring Structural Integrity of PVP Systems (2013-2016)
- International organizing committee of the *International Workshop on Structural Health Monitoring* (2017-present)
- International scientific committee of *European Workshop on Structural Health Monitoring* -- EWSHM (2000-present)
- International organizing committee of the *Asian-Pacific Workshop on Structural Health Monitoring* (2000-present)
- Program committee of the SPIE Conference on *Smart Structures and Integrated Systems*, San Diego, CA (1998-present)
- Program committee of the SPIE Conference on *Advance NDE for Structural and Biological Health Monitoring*, San Diego, CA (1998-present)
- Co-Chair of the SPIE Conference *Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Structures*, San Diego, CA (2004-2011)
- Chair of the Structural Health Monitoring Person of the Year selection committee (2003-2006)

5.8 INVITED LECTURES AND KEYNOTE SPEAKER

I have been asked to make keynote presentations and present invited papers at several universities and international conferences such as:

- Invited plenary speaker, 2017 *Smart Structures and NDE*, 25-29 March 2017, Portland, OR
- Invited plenary speaker, 5th ECCOMAS Thematic Conference SMART'11, Fraunhofer Institute for Nondestructive Testing, IZFP, Saarbrucken, Germany, 6 July 2011
- Key note speaker, Deformation and Fracture of Composites (DFC-11) and Structural Integrity and Multiscale Modeling joint conferences, Cambridge, UK, 14 April 2011
- Distinguished Lecturer, University of Illinois at Chicago, Department of Civil and Materials Engineering, 15 April 2010
- Invited Graduate Seminar Speaker, Northeastern University, Department of Civil and Environmental Engineering, 14 Jan. 2010
- Keynote speaker at the *III ECCOMAS Thematic Conference on Smart Structures and Materials*, 9-11 July 2007, Gdansk, Poland
- Keynote speaker at the 7th *International Conference on Damage Assessment of Structures*, 25-27 June 2007, Torino, Italy
- Invited speaker for “Features and Classification of Smart Materials and Devices”, Smart Materials Tutorial, 2003 *MRS Fall Meeting*, December 1-5, 2003, Boston, MA
- Invited speaker for the “Smart Structures and Materials Technology Overview –Actuators” at the *SPIE International Symposium on Smart Structures and Materials*, San Diego, CA (recurring years 1999--2005)

5.9 COMMUNITY AND SOCIETY SERVICE

I serve my local community in several ways, such moderator at USC Challenge organized by Alpha Lambda Delta – Academic Honor Society for Freshmen (gaorient@studaff.sa.sc.edu); moderator at Annual South Carolina Quizarama at Irmo High School; recruitment presentations at high schools; Smart Materials and Structures stand for middle school students and USC applicants during the USC Engineer’s Week; involvement with Boy Scout of America Troop 326, etc.