# CURRICULUM VITAE

# Victor Birman

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## CURRENT POSITION AND ADDRESS

Professor Emeritus of Mechanical Engineering
Missouri University of Science and Technology
(Formerly, University of Missouri-Rolla)
Toomey Hall, Rolla, Missouri 65409

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**CITIZENSHIP** United States of America

**MARITAL STATUS** Married, two children

## EDUCATION

Ph.D. Aeronautical Engineering, Technion – Israel Institute of Technology, Haifa, Israel, 1983.

Dissertation Title: "Static Displacements and Natural Frequencies of Axially Loaded Imperfect Cylindrical Panels," Advisors: Professors J. Singer and I. Elishakoff.

B.S./M.S. Naval Architecture, Shipbuilding Institute, Leningrad, Russia (USSR), 1973.

Thesis: "Influence of Transverse Vibrations on Stability of Rectangular Plates," Advisor: Professor V. Kalinin.

## I. WORK EXPERIENCE (Academic and industrial)

Professor Emeritus of Mechanical Engineering, Missouri University of Science and Technology. 2019-present.

Adjunct Professor, Rutgers University, New Jersey, 2020.

Director, Missouri S&T Global - St. Louis, Missouri University of Science and Technology (formerly, Engineering Education Center). Responsible for ten graduate programs (distance learning and instructions for local St. Louis students). 2000-2019.

Professor of Mechanical Engineering, Missouri University of Science and Technology (formerly, University of Missouri-Rolla). 1996-2019.

Associate Professor of Mechanical Engineering, Missouri University of Science and Technology (formerly, University of Missouri-Rolla). 1989-1996.

Associate Professor, School of Naval Architecture and Marine Engineering, University of New Orleans, Louisiana. 1987-1988.

Assistant Professor, School of Naval Architecture and Marine Engineering, University of New Orleans, Louisiana. 1984-1987.

Engineer, Israel Aircraft Industries, Lod, Israel. 1984.

Research Fellow, Department of Aeronautical Eng., Technion, Haifa, Israel. 1983-1984.

Graduate Teaching Assistant/Instructor, Department of Aeronautical Eng., Technion, Haifa, Israel. 1979-1983.

Engineer, Structures Design Institute, Leningrad, Russia (USSR). 1973-1978.

**Visiting positions (short-time appointments)**

AFOSR Summer Faculty Program. Wright-Patterson Air Force Base, Dayton, Ohio. 1992 and 1997.

Visiting Scientist. NASA Lewis Research Center (presently, NASA Glenn RC) Cleveland, Ohio. 1993, 1994.

Visiting Scientist, Air Force Institute of Technology. Wright-Patterson Air Force Base, Dayton, Ohio. 1993.

Visiting Scientist, University of Natal, Durban, South Africa. 1992/93.

## II. HONORS AND AWARDS

2017 Appreciation Certificate awarded by the Board of Governors of ASME for the service on the ASME Congress Steering Committee.

2016 Commendation letter on excellence in teaching, Missouri University of Science and Technology (2015-2016).

2016 Outstanding Teaching Award, Global Learning, Missouri University of Science and Technology

2016 ASME Certificate of Appreciation for organizing a session at the 2016 ASME International Mechanical Engineering Congress & Exposition, Phoenix, AZ, November 11-16, 2016.

2016 Appreciation Letter for serving as an external reviewer. European Research Council.

2015 Certificate for Outstanding Contribution in Reviewing. Elsevier. Awarded in May 2015.

2015 Outstanding Teaching Award of Excellence, Global Learning, Missouri University of Science and Technology, April 2015.

2015 Certificate of Appreciation, SPIE (The International Society for Optics and Photonics), Journal: Optical Engineering.

2014 Commendation letter on excellence in teaching, Missouri University of Science and Technology (2013-2014).

2013 The 2013 Faculty Research Award, Missouri University of Science and Technology.

2013 Nominated and elected to the ASME Congress Steering Committee (Steering Committee for the ASME International Mechanical Engineers Congress and Exhibition; three-year appointment).

2013 Commendation letter for excellence in teaching, Missouri University of Science and Technology.

2013 Outstanding Teaching Commendation Award (School of Global Learning, Missouri University of Science and Technology).

2012 Commendation letter for excellence in teaching, Missouri University of Science and Technology.

2012 Outstanding Teaching Award of Excellence (School of Global Learning, Missouri University of Science and Technology).

2011 Commendation letter for excellence in teaching, Missouri University of Science and Technology.

2011 Commendation Award for Outstanding Teaching (School of Global Learning, Missouri University of Science and Technology).

2010 Commendation Award for Outstanding Teaching (School of Global Learning, Missouri University of Science and Technology).

2008 Commendation letter for excellence in teaching, Missouri University of Science and Technology.

2007 Included in Who's Who in Science and Engineering (2008-9, $10^{th}$ Anniversary Edition).

2007 Commendation letter for excellence in teaching, University of Missouri-Rolla.

2007 Outstanding Teaching Commendation Award (School of Extended Learning, University of Missouri-Rolla)

2006 Academy of Mechanical and Aerospace Engineering Excellence Award (University of Missouri-Rolla)

2006 Outstanding Teaching Award of Excellence (School of Extended Learning, University of Missouri-Rolla)

2006 Included in Who's Who in America (2006, 61st edition).

2006 Included in Who's Who in the World (2006, 24th edition).

2006 Included in Who's Who in Science and Engineering (2006-7, 9th edition).

2005 Outstanding Teaching Award of Excellence (the School of Extended Learning, University of Missouri-Rolla).

2005 Included in the 7th Edition of Who's Who in American Education.

2004 Commendation letter on excellence in teaching (University of Missouri-Rolla).

2003 Commendation letter on excellence in teaching (University of Missouri-Rolla, 2002-2003).

2003 Included in the 6th Edition of Who's Who in American Education.

2003 Included in Who's Who in America, 58th Edition.

2003 Outstanding Engineer of the Year Award. St. Louis Chapter of the Missouri Society of Professional Engineers.

2002 Commendation letter on excellence in teaching (University of Missouri-Rolla).

2002 Included in Who's Who in America, 57th Edition.

2002 Included into Who's Who in America, 56th Edition.

2002 Included in Who's Who in Science and Engineering (6th Edition).

2001 Commendation letter on excellence in teaching (University of Missouri-Rolla, 2000-2001).

2001 Included into Who's Who in America, 55th Edition.

2000 Included in Who's Who in America, 54th Edition.

1999 Included into Who's Who in the World (2000).

1999 Included in Who's Who In America (Science and Engineering, 5th Edition, 2000).

1999 University of Missouri-Rolla Faculty Excellence Award.

1999 Commendation letter on excellence in teaching (University of Missouri-Rolla).

1998 Included into Who's Who in the Midwest (26th Edition).

1998 Included into Who's Who in America.

1997 Faculty Excellence Award, University of Missouri-Rolla.

1997 Included into American Men and Women of Science.

1997 Certificate of Recognition "For the creative development of a technical innovation...", from NASA.

1995-96 McDonnell Douglas Faculty Excellence Award.

1996 Included into Who's Who Among America's Teachers.

1995 Invited to join Control Group (executive body) of the Advanced Composites Committee of the Aerospace Division of ASCE.

1995 University of Missouri-Rolla Commendation Letter on Excellence in Teaching (academic year 1994-95).

1995 Certificate of Recognition for Outstanding Research Contributions and Service from the International Community for Composites Engineering (ICCE).

1995 Included in *Men of Achievement* (Biographic reference work), Seventeenth Edition.

1994-95 McDonnell Douglas Faculty Excellence Award.

1994-98 Listed in Who's Who in Science and Engineering.

1993-94 McDonnell Douglas Faculty Excellence Award.

1992-93 University of Missouri-Rolla Commendation Letter on Exceptional Teaching Effectiveness.

1987 University of New Orleans Alumni Association Award for Excellence in Research.

1986 The Summer Scholar Award (University of New Orleans).1980-81 Faculty Award

for distinction in teaching (Technion, Israel).

## III. RESEARCH

**Research Interests:** Composite structures and materials, sandwich structures, biomechanics, smart materials and structures, functionally graded materials, shape memory alloy composites, energy harvesting, piezoelectric transducers, structures subject to fire and other environmental effects, buckling, vibrations and dynamics, plates and shells.

## III-1. BOOKS

V. Birman, Plate Structures, Springer, Dordrecht, Heidelberg, London, New York. (ISBN 978-94-007-1714-5; DOI: 10.1007/978-94-007-1715-2), 2011.

S. Thomopoulos, V. Birman and G.M. Genin, Structural Attachments and Interfaces in Biology, Springer, New York, Heidelberg, Dordrecht, London (ISBN 978-1-4614-3316-3 ISBN 978-1-4614-3317-0 (eBook)), DOI 10.1007/978-1-4614-3317-0), 2013.

## III-2. EDITORSHIP OF BOOKS AND COLLECTIONS OF PAPERS

### Book Editorship

1. Co-editor of the book "Buckling of Structures", ASME, New York, 1989.
2. Co-editor of the book "Thermal Effects on Structures and Materials", ASME, New York, 1990.
3. Co-editor of the book "Topics in Composite Materials and Structures", ASME, New York, 1992.
4. Co-editor of the book "Composite Materials and Structures", ASME, New York, 1993.
5. Co-Editor of the book "Analysis and Design Issues for Modern Aerospace Vehicles", ASME, New York, 1997.
6. Co-Editor of the book “Mechanics of Sandwich Structures,” ASME, New York, 2000.
7. Co-Editor of the book “Contemporary Research in Engineering Mechanics,” ASME, New York, 2001.

### Editorship of Electronic Collections of Papers

1. Co-editor of Collections of Papers presented at the Workshop on Intelligent and Adaptive Systems for Dynamic Load Mitigation, May 27-28, 2010. Co-organized by the Army Research Office (Dr. B. LaMattina and COL R. Young) and Missouri University of Science and Technology (V. Birman). DVD disc.

2. Co-editor of Collections of Papers presented at the Workshop on Revolutionary Research in Energy Harvesting, April 7, 2011. Co-organized by the Army Research Office (COL R. Young) and Missouri University of Science and Technology (V. Birman). DVD disc.

**III-3. PAPERS IN ARCHIVAL JOURNALS AND BOOK CHAPTERS**

1. V. Birman, "Transverse Vibration and Stability of Nonlinear Systems", Scientific Proceedings, Shipbuilding Institute, No. 105, pp. 3-5, Leningrad, 1976 (in Russian).

2. V. Birman, "Change of Stability of Hydrostatically Compressed Cylindrical Shells Undergoing Transverse Vibration", Mechanics of Bar Systems and Continuous Bodies, Vol. 10, pp. 71-76, Leningrad, 1977 (in Russian).

3. V. Birman, "Note on the Stability of Vibrations of Rectangular Plates with Initial Imperfections", Israel Journal of Technology, Vol. 17, pp. 354-359, 1979.

4. D. Durban and V. Birman, "On the Elasto-Plastic Stress Concentration at a Circular Hole in an Anisotropic Sheet", Acta Mechanica, Vol. 43, pp. 73-84, 1982.

5. V. Birman, I. Elishakoff and J. Singer, "On the Effect of Axial Compression on the Bounds of Simple Harmonic Motion", Israel Journal of Technology, Vol. 20, pp. 254-258, 1982.

6. D. Durban and V. Birman, "Elasto-Plastic Analysis of an Anisotropic Rotating Disc", Acta Mechanica, Vol. 49, pp. 1-10, 1983.

7. I. Elishakoff, V. Birman and J. Singer, "Effect of Imperfections on the Vibrations of Loaded Structures", ASME Journal of Applied Mechanics, Vol. 51, No. 1, pp. 191-193, 1984.

8. I. Elishakoff, V. Birman and J. Singer, "Influence of Initial Imperfections on Nonlinear Free Vibration of Elastic Bars", Acta Mechanica, Vol. 55, pp. 191-202, 1985.

9. V. Birman and R. Latorre, "The Application of Hertz's Contact Theory to the Problem of an Offshore Structure Entering the Sea Bed", Ocean Engineering, Vol. 12, pp. 369-373, 1985.

10. V. Birman, "Dynamic Stability of Unsymmetrically Laminated Rectangular Plates", Mechanics Research Communications, Vol. 12, pp. 81-86, 1985.

11. V. Birman, "Free Vibration of Statically Compressed Clamped Beams on Nonlinear Elastic Foundation", Mechanics Research Communications, Vol. 12, pp. 303-308, 1985.

12. V. Birman, "On the Effect of Nonlinear Elastic Foundation on Free Vibration of Beams", ASME Journal of Applied Mechanics, Vol. 53, No. 2, pp. 471-473, 1986.

13. R. Latorre and V. Birman, "Note on Post-Welded Hull Plate Load-Displacement Behavior", Journal of Ship Production, Vol. 2, No. 2, pp. 69-73, 1986.

14. C.W. Bert and V. Birman, "Postbuckling Behavior of Pressurized Long Circular Cylindrical Shells", Journal of Ship Research, Vol. 30, No. 3, pp. 172-176, 1986.

15. V. Birman, "On the Nonlinear Uncoupled Roll and Pitch of Submerged Vehicles", Ocean Engineering, Vol. 13, No. 6, pp. 621-625, 1986.

16. V. Birman and C.W. Bert, "Nonlinear Beam-Type Vibrations of Long Cylindrical Shells", International Journal of Non-Linear Mechanics, Vol. 17, pp. 327-334, 1987.

17. I. Elishakoff, V. Birman and J. Singer, "Small Vibrations of an Imperfect Panel in the Vicinity of a Nonlinear Static State", Journal of Sound and Vibration, Vol. 114, No. 1, pp. 57-63, 1987.

18. C.W. Bert and V. Birman, "Dynamic Instability of Shear Deformable Antisymmetric Angle-Ply Plates", International Journal of Solids and Structures, Vol. 23, pp. 1053-1061, 1987.

19. V. Birman, "Dynamic Stability of Thick Rectangular Plates", Mechanics Research Communications, Vol. 14, pp. 37-42, 1987.

20. V. Birman, "On Stability of Axisymmetric Forced Vibrations of Imperfect Cylindrical Shells", Journal of Applied Mathematics and Physics (ZAMP), Vol. 38, pp. 129-136, 1987.

21. V. Birman, "Effect of Shear Deformation and Rotatory Inertia on Dynamic Buckling of Elastic Plates", ASME Journal of Offshore Mechanics and Arctic Engineering, Vol. 110, pp. 282-286, 1987.

22. V. Birman and C.W. Bert, "Behavior of Laminated Plates Subjected to Conventional Blast", International Journal of Impact Engineering, Vol. 6, No. 3, pp. 145-155, 1987.

23. V. Birman and C.W. Bert, "Nonlinear Parametric Instability of Antisymmetrically Laminated Angle-Ply Plates", Dynamics and Stability of Systems, Vol. 3, No. 1 & 2, pp. 57-68, 1988.

24. C.W. Bert and V. Birman, "Parametric Instability of Thick Orthotropic Circular Cylindrical Shells", Acta Mechanica, Vol. 71, pp. 61-76, 1988.

25. V. Birman, "Parametric Vibrations of Long Cylindrical Shells Subject to Transverse Static Load", International Journal of Mechanical Sciences, Vol. 30, No. 9, pp. 613-623, 1988.

26. V. Birman, "Axisymmetric Divergence of Ring-Stiffened Composite Cylindrical Shells Subject to Axial Compression", ASME Journal of Applied Mechanics, Vol. 55, pp. 984-985, 1988.

27. V. Birman and P. Twinprawate, "Free Nonlinear Vibration of Statically Loaded Long Cylindrical Shells", Journal of Applied Mathematics and Physics (ZAMP), Vol. 39, pp. 768-775, 1988.

28. V Birman, "Problems of Dynamic Buckling of Antisymmetric Rectangular Laminates", Composite Structures, Vol. 12, pp. 1-15, 1989.

29. D. Durban and V. Birman, "Elasto-Plastic Strain Concentration at a Circular Hole Embedded in an Anisotropic Sheet", Quarterly of Applied Mathematics, Vol. XLVII, No. 3, pp. 385-394, 1989.

30. V. Birman and G.J. Simitses, "Axisymmetric Vibrations of Reinforced Orthotropic Shallow Spherical Caps", ASCE Journal of Aerospace Engineering, Vol. 2, No. 3, pp. 155-165, 1989.

31. V. Birman and H. Zahed, "Non-Linear Problems of Parametric Vibrations of Imperfect Laminated Plates", Composite Structures, Vol. 12, pp. 181-191, 1989.

32. V. Birman and R. Latorre, "Soviet Technique for Estimating Post-Welded Deflections: Case of Butt Welding", Journal of Ship Production, Vol. 5, pp. 10-15, 1989.

33. V. Birman, C.W. Bert and I. Elishakoff, "Effect of Aerodynamic Heating on Flutter of a Laminated Composite Plate", Composite Structures, Vol. 15, pp. 259-273, 1990.

34. V. Birman, “Divergence Instability of Reinforced Composite Cylindrical Shells”, International Journal of Solids and Structures, Vol. 16, pp. 571-580, 1990.

35. V. Birman, “On the Post-Buckling Behavior of Reinforced Composite Shells”, Journal of Ship Research, Vol. 34, pp. 207-211, 1990.

36. V. Birman and L. Librescu, “Supersonic Flutter of Shear Deformable Laminated Composite Flat Plates”, Journal of Sound and Vibration, Vol. 139, pp. 265-275, 1990.

37. V. Birman, “Buckling and Bending of Beams Subject to a Nonuniform Thermal Field”, Mechanics Research Communications, Vol. 17, pp. 41-45, 1990.

38. V. Birman, “Thermoelastic Problem of a Thick Orthotropic Beam on Two-Dimensional Elastic Foundation”, ASME Journal of Electronic Packaging, Vol. 112, No. 1, pp. 47-51, 1990.

39. V. Birman, “Thermal Dynamic Problems of Reinforced Composite Cylinders”, ASME Journal of Applied Mechanics, Vol. 57, pp. 941-947, 1990.

40. V. Birman and C.W. Bert, “Dynamic Stability of Reinforced Composite Cylindrical Shells in Thermal Fields”, Journal of Sound and Vibration, Vol. 142, pp. 183-190, 1990.

41. V. Birman, "Thermal Bending of Shear Deformable Orthotropic Cylindrical Shells Reinforced by Cylindrically Orthotropic Rings", International Journal of Solids and Structures, Vol. 28, pp. 819-830, 1991.

42. V. Birman, "Temperature Effect on Shear Correction Factor", Mechanics Research Communications, Vol. 18, pp. 207-212, 1991.

43. V. Birman, "Thermoelastic Problems of Reinforced Rectangular Panels", ASME Journal of Applied Mechanics, Vol. 58, pp. 1095-1098, 1991.

44. V. Birman and G.J. Simitses, "Buckling and Bending of Cylindrically Orthotropic Annular Plates", Composites Engineering, Vol. 1, pp. 41-47, 1991.

45. V. Birman and M.G. Magid, "Closed-form Solutions of Static and Dynamic Problems of Long Composite Cylindrical Shells", Composites Engineering, Vol. 1, pp. 225-233, 1991.

46. I. Elishakoff, V. Birman and C.W. Bert, "Modified Panovko's Method for Vibration Analysis of a Structural Element with Different Tension and Compression Behavior", Journal of Sound and Vibration, Vol. 148, pp. 215-222, 1991.

47. V. Birman, "Extension of Vlasov's Semi-Membrane Theory to Reinforced Composite Shells", ASME Journal of Applied Mechanics, Vol. 59, pp. 462-464, 1992.

48. V. Birman, "Exact Solution of Axisymmetric Problems of Laminated Cylindrical Shells with Arbitrary Boundary Conditions - High-Order Theory", Mechanics Research Communications, Vol. 19, pp. 219-225, 1992.

49. V. Birman and C.W. Bert, "Buckling and Postbuckling of Composite Plates and Shells Subjected to Elevated Temperatures", ASME Journal of Applied Mechanics, Vol. 60, pp. 514-519, 1993.

50. V. Birman, "Axisymmetric Bending of Generally Laminated Cylindrical Shells", ASME Journal of Applied Mechanics, Vol. 60, pp. 157-162, 1993.

51. V. Birman, "Active Control of Composite Plates Using Piezoelectric Stiffeners", International Journal of Mechanical Sciences, Vol. 35, pp. 387-396, 1993.

52. C.W. Bert and V. Birman, "Buckling of a Coating Bonded to a Round Bar Subjected to Axial Extension", Mechanics of Materials, Vol. 15, pp. 131-138, 1993.

53. C.W. Bert, C.D. Kim and V. Birman, "Vibration of Composite Material Cylindrical Shells with Ring and Stringer Stiffeners", Composite Structures, Vol. 25, pp. 477-484, 1993.

54. V. Birman and M.G. Magid, "Axisymmetric Vibrations of Generally Laminated Spherical Caps", Journal of Sound and Vibration, Vol. 170, pp. 276-279, 1994.

55. V. Birman, "Life Span of Imperfect Composite Columns Subjected to Creep", Mechanics Research Communications, Vol. 26, pp. 493-499, 1994.

56. V. Birman, "Analytical Models of Sandwich Plates with Piezoelectric Strip-Stiffeners", International Journal of Mechanical Sciences, Vol. 36, pp. 567-578, 1994.

57. V. Birman and A. Simonyan, "Theory and Applications of Cylindrical Sandwich Shells with Piezoelectric Sensors or Actuators", Smart Materials and Structures, Vol. 3, pp. 391-396, 1994.

58. V. Birman, "On Three Dimensional State of Thermal Stresses in a Transversely Isotropic Plate with a Circular Hole", International Journal of Engineering Sciences, Vol. 33, pp. 95-103, 1995.

59. A.N. Palazotto and V. Birman, "Environmental and Viscoelastic Effects in Adhesive Joints", ASCE Journal of Aerospace Engineering, Vol. 8, pp. 107-118, 1995.

60. V. Birman, "Stability of Functionally Graded Hybrid Composite Plates", Composites Engineering, Vol. 5, pp. 913-921, 1995.

61. V. Birman and M.G. Magid, "Design Method for Columns Subjected to Creep", International Journal of Mechanical Sciences, Vol. 37, pp. 831-841, 1995.

62. A.N. Palazotto and V. Birman, "Fracture in Adhesive Joints Considering Rocket Motor Application", AIAA Journal of Spacecraft and Rockets, Vol. 32, pp. 538-544, 1995.

63. V. Birman and A. Simonyan, "Optimum Distribution of Actuators in Smart Sandwich Plates Subjected to Bending or Forced Vibration", Composites Part B: Engineering, Vol. 27, pp. 657-665, 1996.

64. V. Birman, K. Chandrashekhara and S. Sain, "An Approach to Optimization of Shape Memory Alloy Hybrid Composite Plates Subjected to Low-Velocity Impact", Composites Part B: Engineering, Vol. 27B, pp. 439-446, 1996.

65. V. Birman, "Thermal Effects on Measurements of Dynamic Processes in Composite Structures Using Piezoelectric Sensors", Smart Materials and Structures, Vol. 5, pp. 379-385, 1996.

66. V. Birman and S. Adali, "Active Optimum Control of Orthotropic Plates Using Piezoelectric Stiffeners", Composite Structures, Vol. 35, pp. 251-261, 1996.

67. V. Birman, D.A. Saravanos and D.A. Hopkins, “Micromechanics of Composites with Shape Memory Alloy Fibers in Uniform Thermal Fields”, AIAA Journal, Vol. 35, No. 9, pp. 1905-1912, 1996.

68. V. Birman, K. Chandrashekhara and S. Sain, "Global Strength of Hybrid Shape Memory Composite Plates Subjected to Low-Velocity Impact", Journal of Reinforced Plastics and Composites, Vol. 16, pp. 791-809, 1997.

69. V. Birman, "Stress Analysis of a Composite Panel Subjected to the Beam of a High Energy Laser", ASCE Journal of Aerospace Engineering, Vol. 10, pp. 38-42, 1997.

70. V. Birman, "Stability of Functionally Graded Shape Memory Alloy Sandwich Panels", Smart Materials and Structures, Vol. 6, pp. 278-286, 1997.

71. V. Birman, "Review of Mechanics of Shape Memory Alloy Structures", Applied Mechanics Reviews, Vol. 50, pp. 629-645, 1997.

72. V. Birman, "Theory and Comparison of the Effect of Composite and Shape Memory Alloy Stiffeners on Stability of Composite Shells and Plates", International Journal of Mechanical Sciences, Vol. 39, pp. 1139-1149, 1997.

73. V. Birman, "Analysis of Shape Memory Alloy Plate with a Circular Hole Subjected to Biaxial Tension", International Journal of Solids and Structures, Vol. 36, pp. 167-178, 1999.

74. V. Birman, "On Mode I Fracture of Shape Memory Alloys", Smart Materials and Structures, Vol. 7, pp. 433-437, 1998.

75. C.W. Bert and V. Birman, "Effects of Stress and Electric Field on the Coefficients of Piezoelectric Materials: One-Dimensional Formulation", Mechanics Research Communications, Vol. 25, pp. 165-169, 1998.

76. L.W. Byrd and V. Birman, "Theoretical Foundations for Nondestructive Detection of Cracks in Ceramic Matrix Composites Based on Surface Temperature", Composite Structures, Vol. 48, pp. 71-77, 1999.

77. V. Birman, "On the Effect of Cyclic Loading on Material Temperature", Mechanics Research Communications, Vol. 25, pp. 653-660, 1998.

78. C.W. Bert and V. Birman, “Stress Dependency of the Thermoelastic and Piezoelectric Coefficients,” AIAA Journal, Vol. 37, pp. 135-137, 1999.

79. V. Birman and L.W. Byrd, “Analysis of Ceramic Matrix Composites with Bridging Cracks

in the Presence of Creep," Transaction of the Canadian Society of Mechanical Engineers, Vol. 22, pp. 447-456, 1998.

80. V. Birman, G.J. Knowles and J.J. Murray, "Application of Piezoelectric Actuators to Active Control of Composite Spherical Caps", Smart Materials and Structures, Vol. 8, No. 2, pp. 218-222, 1999.

81. V. Birman, "Stiffness of Smart Composites with Shape Memory Alloy Fibers in the Presence of Matrix Cracks," Journal of Intelligent Material Systems and Structures, Vol. 10, pp. 135-140, 1999.

82. V. Birman, S. Griffin and G.J. Knowles, "Axisymmetric Dynamics of Composite Spherical Shells with Active Piezoelectric/Composite Stiffeners", Acta Mechanica, Vol. 141, No. 1/2, 2000.

83. V. Birman and G.J. Simitses, "Theory of Box-Type Sandwich Shells with Dissimilar Facings Subjected to Thermomechanical Loads", AIAA Journal, Vol. 38, pp. 362-367, 2000.

84. V. Birman and G.J. Simitses, "Elliptical and Circular Cylindrical Sandwich Shells with Different Facings," Journal of Sandwich Structures and Materials, Vol. 2, pp. 152-175, 2000.

85. V. Birman and L.W. Byrd, "Applications of Thermography to Detection of Matrix Cracks in Transverse Layers and Yarns of Ceramic Matrix Composites," International Journal of Fracture, Vol. 102, pp. L21-L-26, 2000.

86. V. Birman, "Stiffness of Smart Composites with Shape Memory Alloy Fibers in the Presence of Matrix Cracks," Journal of Intelligent Material Systems and Structures, Vol. 10, pp. 135-140, 2000.

87. V. Birman and L.W. Byrd, "Selected Issues of Mechanics of Ceramic Matrix Composites," Composite Structures, Vol. 51, pp. 181-190, 2001.

88. V. Birman and L.W. Byrd, "Fracture and Fatigue in Ceramic Matrix Composites," Applied Mechanics Reviews, Vol. 53, pp. 147-174, 2000.

89. V. Birman and L.W. Byrd, "Matrix Cracking in Transverse Layers of a Cross-Ply Beam Subjected to Bending and its Effect on Vibration Frequencies," Composites Part B: Engineering, Vol. 32B, pp. 47-55, 2001.

90. L.W. Byrd and V. Birman, "Nondestructive Testing of Thin-Walled Ceramic Matrix Composites Using Thermography," Advances in Mechanics of Plates and Shells," Eds. D. Durban, J.G. Simmonds and D. Givoli, Kluwer Academic Publishers, Dordrecht, pp. 103-118, 2001

91. V. Birman and L.W. Byrd, “Natural Frequencies of Cross-Ply Laminated Panels with Matrix Cracks,” AIAA Journal, Vol. 39, No. 1, pp. 190-193, 2001.

92. V. Birman, G.J. Simitses and L. Shen, "Stability of Short Sandwich Cylindrical Shells with Rib-Reinforced Facings," Recent Advances in Applied Mechanics, Honorary Volume for Professor A.N. Kounadis, Eds. J.T. Katsikadelis, D.E. Beskos and E.E. Gdoutos, National Technical University of Athens, Athens, Greece, pp. 11-21, 2001.

93. V. Birman, "Transverse Matrix Cracking in a Sandwich Beam with Cross-Ply Facings Subject to a Uniform Pressure," Mechanics Research Communications, Vol. 28, No. 2, pp. 187-192, 2001.

94. V. Birman and G.J. Simitses, "Vibration of Sandwich Panels and Beams with Matrix Cracks in the Facings," Composites Science and Technology, Vol. 61, pp. 1605-1613, 2001.

95. V. Birman and L.W. Byrd, "Effect of Matrix Cracking in Cross-Ply Ceramic Matrix Composite Beams on Their Mechanical Properties and Natural Frequencies," International Journal of Non-Linear Mechanics, Vol. 38, pp. 201-212, 2003.

96. V. Birman and C.W. Bert, “On the Choice of Shear Correction Factor in Sandwich Structures,” Journal of Sandwich Structures and Materials, Vol. 4, No. 1, pp. 83-95, Jan. 2002.

97. C. Kocher, W. Watson, M. Gomez, I. Gonzalez and V. Birman, “Integrity of Sandwich Panels and Beams with Truss-Reinforced Cores,” ASCE Journal of Aerospace Engineering, Vol. 15, pp. 111-117, 2002.

98. V. Birman and L.W. Byrd, “Analytical Evaluation of Damping in Composite and Sandwich Structures,” AIAA Journal, Vol. 40, pp. 1638-1643, 2002.

99. V. Birman and L.W. Byrd, “Effect of Matrix Cracks on Damping in Unidirectional and Cross-Ply Ceramic Matrix Composites,” Journal of Composite Materials, Vol. 36, pp. 1859-1877, 2002.

100. L.W. Byrd and V. Birman, “Onset of Matrix Cracking in Angle-Ply Ceramic Matrix Composites,” International Journal of Mechanical Sciences, Vol. 44, pp. 2173-2187, 2002.

101. V. Birman and L.W. Byrd, “Damping in Ceramic Matrix Composites with Matrix Cracks,” International Journal of Solids and Structures, Vol. 40, pp. 4239-4256, 2003.

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**III-4. CONFERENCE PROCEEDINGS**

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113. S.W. Linderman, I. Kormpakis, R.H. Gelberman, V. Birman, U.G.K. Wegst, G.M. Genin and St. Thomopoulos, "Adhesive Sutures," Paper 67522. ASME International

Mechanical Engineering Congress and Exposition (IMECE 2016). November 11-17, 2016, Phoenix, AZ.

114. S.W. Linderman, M. Golman, D. Yoon, V. Birman, G.M. Genin and S. Thomopoulos, "Strengthening Tendon-to-Bone Repair with Mechanically-Optimized Adhesives," The Orthopedic Research Society (ORS), 2017 Annual Meeting, San Diego, California, March 19-22, 2017.

115. Linderman, S.W., Golman, M., Gardner, T.R., Yoon, D., Birman, V., Levine, W.N., Genin, G.M. and Thomopoulos, S., "Adhesive Films for Enhanced Tendon-to-Bone Repair," $SB^3C$, Summer Biomechanics, Bioengineering and Biotransport Conference, June 21-24, 2017, Tucson, AZ, USA.

116. Golman, M., Marshall, B.P., Kurtaliaj, I., Birman, V., Genin, G and Thomopoulos, S., "Failure Modes of Mouse Supraspinatus Tendon-to-Bone Attachment," Orthopaedic Research Society, Annual Meeting, February 2-5, 2019, Austin, Texas.

117. Kurtaliaj, I., Yoon, D.H., Smith, L., Hoppe, E., Birman, V., Genin G. and Thomopoulos, S., "Python-inspired Grasping Teeth for Tendon-to-Bone Repair," Orthopaedic Research Society, Annual Meeting, February 2-5, 2019, Austin, Texas.

118. Kurtaliaj, I., Hoppe, E., Yoon, D.H., Smith, L., Birman, V., Genin, G. and Thomopoulos, S., "Python-Inspired Grasping Teeth for Tendon-to-Bone Repair," $SB^3C$, Summer Biomechanics, Bioengineering and Biotransport Conference, June 25-28, 2019, Seven Springs, PA, USA.

119. Golman, M., Abraham, A.C., Kurtaliaj, I., Marshall, B.P., Genin, G.M., Birman, V. and Thomopoulos, S., "Failure Mechanisms in the Tendon Enthesis under Quasistatic Cyclical, and Pathological Loading," $SB^3C$, Summer Biomechanics, Bioengineering and Biotransport Conference, June 25-28, 2019, Seven Springs, PA, USA.

120. Hoppe, E., Kurtaliaj, I., Birman, V., Luzzi, A., Thomopoulos, S. and Genin, G., "A Hitchhiker's Guide to Orthopedic Repairs: The Mechanism of How *Harpogonella Palmeru* Fruit Hitches onto Fabric, with Application to suture Spacing," $SB^3C2020$, Summer Biomechanics, Bioengineering and Biotransport Conference, June 17-20, 2020, Vail, Colorado.

121. Kurtaliaj, I., Hoppe, E., Tedesco, L., Yoon, D.H., Smith, L., Kovacevic, D., Birman, V., Genin, G., Thomopoulos, S., "Python-Teeth-Inspired Device to Enhance Tendon-to-Bone

Repair," $SB^3C2020$, Summer Biomechanics, Bioengineering and Biotransport Conference, June 17-20, 2020, Vail, Colorado.

122. Golman, M., Birman, V., Thomopoulos, S. and Genin, G.M., "Position-Dependent Recruitment of Collagen Fibers Determines Tendon Enthesis Toughness," ORS 2021, Orthopaedic Research Society, Annual Meeting, February 13-15, 2021, Long Beach, California.

123. Golman, M., Birman, V., Genin G.M., Thomopoulos, S., 'Tendon Enthesis Toughness Depends on Position-Dependent Fiber Recruitment and Bony Attachment Geometry," $SB^3C2021$ Summer Biomechanics, Bioengineering and Biotransport Conference, June 14-18, 2021, Virtual.

**III-5. PATENTS**

L.W. Byrd and V. Birman, "Replaceable Impact Resistant Thermal Protection System," Patent number 8147943, issue date of 04/03/12.

S. Linderman, G. Genin, S. Thomopoulos, K. Ahn and V. Birman, "Composition and Methods for Tissue Repair," Patent number 10631973, issue date 08/28/2020.

**III-6. TECHNICAL REPORTS**

1. V. Birman, "Crack Arrester Layers Technique in Composite Plates", Report to the Wright-Patterson Air Force Base, September 1992.

2. V. Birman, "Detection of Delaminations in Composite Beams Using Piezoelectric Sensors", Report to the NASA Lewis Research Center, October 1993.

3. V. Birman, "Multimechanics and Stress Analysis of Shape Memory Alloy Fibers/Wires Within a Polymer Matrix Subjected to a Uniform Temperature", Report to the NASA Lewis Research Center, September, 1994.

4. V. Birman, "Theoretical Foundations for Detection of Post-Processing Cracks in Ceramic Matrix Composites Based on Surface Temperature", Report to the Wright-Patterson Air Force Base, July 1997.

5. V. Birman, "Review of Sonic Fatigue in Aircraft Structures," Report to the Air Force Institute of Technology, October 2004.

Reports prepared in the framework of research contracts that were later republished in archival journals, they are not included in this list. Reports to industrial companies and government entities that were a part of consulting activities of Dr. Birman are also excluded.

**III-7. INVITED LECTURES**

Some of the invited lectures listed below as well as some of the conference presentations included in the next section were published in conference proceedings. Therefore, some titles are identical.

1. C.W. Bert and V. Birman, "Dynamic Stability of Thick Orthotropic Circular Cylindrical Shells", 23-rd Annual Meeting, Society of Engineering Science, Buffalo, August 1986.

2. C.W. Bert and V. Birman, "Dynamic Stability of Thick Orthotropic Circular Cylindrical Shells", European Mechanics Colloquium on Refined Dynamic Theories of Beams, Plates and Shells and Their Applications, Kassel, West Germany, Sept. 1986.

3. V. Birman and H. Zahed, "Effect of Initial Imperfections on Nonlinear Dynamic Stability of Antisymmetric Angle-Ply Plates", 20th Midwestern Mechanics Conference, Purdue University, Aug./Sept. 1987.

4. V. Birman and P. Twinprawate, "Free Vibrations of Long Cylindrical Shells Subjected to Static Transverse Load", 20th Midwestern Mechanics Conference, Purdue University, Aug./Sept. 1987.

5. V. Birman, "Thermal Dynamic Buckling of Isotropic and Composite Plates", 24-th Annual Meeting, Society of Engineering Science, Salt Lake City, Sept. 1987.

6. V. Birman, "Resistance of Composite Structures to Impact Loads", the 7th International Conference on Offshore Mechanics and Arctic Engineering, Houston, Feb. 1988.

7. V. Birman, "Response of Symmetrically Laminated Plates to Thermal Dynamic Loading", ASME Pressure Vessels and Piping Conference, Pittsburgh, June 1988.

8. V. Birman, "Divergence Instability of Stiffened Orthotropic Cylindrical Shells", The 1988 ASME Winter Annual Meeting, Chicago, December 1988.

9. V. Birman, "Statics of Reinforced Rectangular Panels in a Thermal Field", The 1989 ASME Winter Annual Meeting, San Francisco, December 1989.

10. V. Birman, "Pseudo-Axisymmetric Bending of Cylindrical Shells Subjected to Pressure, Axial Load and Torsion", Second International Conference on Industrial and Applied Mathematics, Washington D.C., July 1991. Invited by Prof. L. Librescu (Virginia Tech).

11. V. Birman and A. Gonzalez, "Three-Dimensional Thermoelastic Analysis of a Transversely Isotropic Plate with a Circular Hole," Joint ASCE-ASME-SES Mechanics Conference, Charlottesville, Virginia, June 1993. Invited by Prof. L. Librescu (Virginia Tech).

12. V. Birman, "Theory of Sandwich Plates with Piezoelectric Reinforcements", The SPIE 1993 North American Conference on Smart Structures and Materials, Albuquerque, New Mexico, Feb. 1993. Invited by Dr. Gary L. Anderson (US Army Research Office).

13. S. Adali and V. Birman, "Optimal Design of Orthotropic Plates with Piezoelectric Stiffeners Subjected to Uncertain Impulse Loading," Joint ASME-ASCE-SES Mechanics Conference, Charlottesville, Virginia, June 1993. Invited by Professor J.N. Reddy (Texas A & M University).

14. V. Birman, "Problems of Active Control and Optimization of Composite and Sandwich Panels Using Piezoelectric Stiffener Actuators", The First Army Research Office Workshop on Smart Structures, Arlington, Texas, Sept. 1993. Invited by Dr. Gary L. Anderson (US Army Research Office) and Professor S. Joshi (University of Texas - Arlington).

15. V. Birman and S. Adali, "Active Optimum Control of Orthotropic Plates Using Piezoelectric Stiffeners", the 14th ASME Biennial Conference on Mechanical Vibration and Noise, Albuquerque, New Mexico, Sept. 1993. Invited by Prof H.-S. Tzou (University of Kentucky).

16. V. Birman, "Thermoelastic Theory of Cylindrical Sandwich Shells with Piezoelectric Sensors or Actuators", The 4th International Conference on Engineering, Construction and Operations in Space (Space 94), Albuquerque, New Mexico, Feb.-March 1994. Invited by Profs. A. Palazotto (Air Force Institute of Technology) and R. Raouf (U.S. Naval Academy).

17. V. Birman, "Axisymmetric Vibrations of Thick-Walled Cylindrical Tubes in the Presence of Thermal Residual Stresses", The 4th International Conference on Engineering, Construction and Operations in Space (Space 94), Albuquerque, New Mexico, Feb.-March 1994. Invited by Prof. M.-J. Pindera (University of Virginia).

18. V. Birman and A. Goldenberg, "Frequency Method of Detection of Local Damage in Composites", The 1994 ASME Winter Annual Meeting, Chicago, November 1994. Invited by Prof. J.S. Lee (Clarkson University).

19. V. Birman, "Buckling of Functionally Graded Hybrid Composite Plates", The 1995 ASCE Engineering Mechanics Conference, Boulder, Colorado, May 1995. Invited by Prof. M.-J. Pindera (University of Virginia).

20. V. Birman, "Effects of Temperature on Accurate Data Interpretation from Piezoelectric Sensors", The 1995 ASCE Engineering Mechanics Conference, Boulder, Colorado, May 1995. Invited by Prof. J.S. Lee (Clarkson University).

21. V. Birman and K. Chandrashekhara, "Optimization of Shape Memory Alloy Hybrid Composite Plates Subjected to Low- Velocity Impact", International Conference on Composites Engineering II (ICCE-2), New Orleans, August 1995. Invited by Profs. V. Verijenko and S. Adali (University of Natal, South Africa).

22. V. Birman and A. Simonyan, "Optimum Design of Sandwich Panels with Piezoelectric and Shape Memory Alloy Actuators", The 15th ASME Biennial Conference on Mechanical Vibrations and Noise, Boston, September 1995. Invited by Prof. H-S. Tzou (University of Kentucky).

23. V. Birman, "Stability of Functionally Graded Shape Memory Alloy Sandwich Plates", The Second Army Research Office Workshop on Smart Structures, The University of Maryland, College Park, Maryland, September 1995. Invited by Dr. Gary L. Anderson (US Army Research Office).

24. V. Birman, "Enhancement of the Stability of Functionally Graded Shape Memory Alloy Composite Plates", The 32-nd Annual Technical Meeting of the Society of Engineering Science, New Orleans, October-November, 1995. Invited by Prof. G.A. Kardomateas (Georgia Tech).

25. V. Birman, "Stress Concentration in a Shape Memory Alloy Plate Subjected to a Biaxial Tension/Compression", SPIE's 4th Annual Symposium on Smart Structures and Materials, San Diego, March 1997. Invited by Prof. R.C. Batra (Virginia Tech).

26. V. Birman, "Effect of SMA Actuators on Free Nonlinear Vibrations of Elastic Beams: Closed Form Solution", SPIE's 4th Annual Symposium on Smart Structures and Materials, San Diego, March 1997. Invited by Prof. N.R. Sottos (University of Illinois at Urbana-Champaign).

27. C.W. Bert and V. Birman, "Modeling of a Shape Memory Alloy Sheet with a Circular Hole and Subjected to Arbitrary In-Plane Loading", SPIE's 5th Annual International Symposium on Smart Structures and Materials, San Diego, March 1998. Invited by Prof. L. Librescu (Virginia Tech).

28. 28. V. Birman, "Temperature Rise in Materials Subjected to Rapid Cyclic Loading", 2nd International Conference on Non-Linear Problems in Aviation and Aerospace, Daytona Beach, FL, April-May, 1998. Invited by Prof. M. Ferman (St. Louis University, St. Louis).

29. V. Birman and L. Byrd, "Creep of Unidirectional Ceramic Matrix Composites with Matrix Cracks", Canadian Society for Mechanical Engineering Forum, Toronto, Canada, May 1998. Invited by Professor A. Kalamkarov (Technical University of Nova Scotia).

30. V. Birman, S. Griffin, G.J. Knowles and J.J. Murray, "Axisymmetric Dynamics of Composite Spherical Panels with Composite and Active Piezoelectric Stiffeners", 35th Annual Technical Meeting of the Society of Engineering Science, Pullman, Washington, September 1998. Invited by Prof. Hans Irschik (University of Linz, Austria).

31. V. Birman, "Stiffness of Smart Composites with Shape Memory Alloy Fibers in the Presence of Matrix Cracks", 6th Annual SPIE International Symposium on Smart Materials and Structures, Newport Beach, California, March 1-5, 1999. Invited by Prof. L. Librescu (Virginia Tech).

32. V. Birman, "Pure Bending of Shape Memory Alloy Beams and Plates Accompanied by a Stress-Induced Martensitic Transformation", The 1998 ASME International Mechanical Engineering Congress and Exposition, Anaheim, California, November 1998. Invited by Prof. D. Lagoudas, (Texas A&M University).

33. G.J. Simitses, G. Song and V. Birman, "Similarity Conditions for Cylindrical and Flat Sandwich Plates", The 1999 ASME Summer Applied Mechanics Meeting, Blacksburg, Virginia, June 1999. Invited by Prof. L. Librescu (Virginia Tech).

34. V. Birman and G.J. Simitses, "Stability of Cylindrical Sandwich Shells with Rib-Reinforced Facings," The 1999 ASME International Mechanical Engineering Congress, Nashville, Tennessee, November 1999. Invited by Prof. G. Kardomateas (Georgia Tech) and Dr. Y. Rajapakse (Office of Naval Research).

35. V. Birman, "Research Issues Related to Industrial Applications of Ceramic Matrix Composites," Keynote Lecture, The 3rd International Conference on composites Science and Technology, Durban, South Africa, January 2000. Invited by the Conference Organizing Committee (Profs. S. Adali and V.E. Verijenko, University of Natal, South Africa).

36. C. Kocher, W. Watson, M. Gomez, I. Gonzalez and V. Birman, "Integrity of Multi-Skin Sandwich Panels and Beams with Truss-Reinforced Cores," The 2001 AIAA Structures, Structural Dynamics and Materials Conference. Seattle, April 2001. Invited by Profs. W. Binienda (University of Akron) and M.-J. Pindera (University of Virginia).

37. V. Birman, "Selected Issues of Theory and Design of Sandwich Panels," Composites for Marine Structures, Office of Naval Research Review, University of Maryland, May 2001. Invited by Dr. Y.D.S. Rajapakse (Office of Naval Research).

38. V. Birman and L.W. Byrd, "On the Prediction of Damping in Composite and Sandwich Structures," The 2001 International Mechanical Engineering Congress and Exposition (IMECE 2001), Symposium Dynamic Failure in Composite Materials. New York, November 2001. Invited by Dr. Y.D.S. Rajapakse (Office of Naval Research).

39. V. Birman and C.W. Bert, "Wrinkling Instability in Biaxially Loaded Sandwich Panels," The Ninth International Conference on Composites Engineering (ICCE/9), San Diego, California, July 2002. Invited by Prof. D. Hui (University of New Orleans).

40. V. Birman and L.W. Byrd, "Damping in Brittle Matrix Composite Laminates with Matrix Cracks," The 14th US Congress on Theoretical and Applied Mechanics, Blacksburg, Virginia, June 2002. Invited by Prof. A.K. Noor (Old Dominion University/NASA Langley Research Center).

41. V. Birman, "Dynamic Wrinkling of Facings in Sandwich Panels and Beams Subjected to Periodic Excitation," The Sixth International Conference on Sandwich Structures, Fort Lauderdale, Florida, March 2003. Invited by Profs. Jack R. Vinson (University of Delaware) and Dr. Y.D.S. Rajapakse (Office of Naval Research).

42. V. Birman, "Thermomechanical Wrinkling in Sandwich Panels with a Nonuniform Temperature Distribution," ICCES 04, International Conference on Computational & Experimental Engineering and Sciences), July 26-29, 2004. Invited by Professor A. Waas (University of Michigan).

43. G. Knowles, R. Bird and V. Birman, "Shape Memory Alloy Springs used for Deployment of Flight Control Surfaces," IMECE 2004, International Mechanical Engineering Congress and Exposition, Anaheim, California, November 2004. Invited by Professor Marcelo J. Dapino (Ohio State University).

44. V. Birman and L.W. Byrd, "On the Effectiveness of Z-Pins in Preventing Mode I Fracture in Co-Cured Joints Subject to High Temperature," IMECE 2004, International Mechanical Engineering Congress and Exposition, Anaheim, California, November 2004. Invited by Professors A. Waas and P. Friedmann (University of Michigan).

45. V. Birman, G.A. Kardomateas and G.J. Simitses, "Behavior of Composite Laminates and Sandwich Panels Subject to Compression and Fire," 46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Austin, Texas, April 18-21, 2005. Invited by Dr. N. Knight (Symposium honoring the memory of Dr. James Starnes).

46. V. Birman and E. Suhir, "Effect of Temperature on Vibrations of Physically Nonlinear Piezoelectric Rods," The 11th International Workshop on THERMal Investigation of ICs and Systems, Belgirate, Lake Maggiore, Italy, September 27-30, 2005. Invited by Professor E. Suhir (University of California at Santa Cruz).

46. V. Birman, "Collapse of Composite Panels Subject to Concentrated Compressive Forces and Fire," IMECE 2005, International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 2005. Invited by Professor E. Corona (Notre Dame University).

47. J. Holmes, L. Liu, G. Kardomateas, R. Li and V. Birman, "Experimental and Analytical Studies on the Structural and Failure Response of Composites under Combined Applied Compression and Heat Flux due to Fire," IMECE 2005, International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 2005 Invited by Professors A. Waas and P. Friedmann (University of Michigan).

48. V. Birman, "Effect of Physical Nonlinearity on Vibrations of Piezoelectric Rods," IMECE 2005, International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 2005 Invited by Professor Marcelo Dapino, (The Ohio State University).

49. V. Birman, R. Li, G.J. Simitses and G.A. Kardomateas, "Effect of Heat Flux on Stresses and Deformations in Compressed Sandwich Composite Panels," IMECE 2005, International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 2005 Invited by Professors H. Mahfuz (Tuskegee University) and L. Carlsson (Florida Atlantic University).

50. V. Birman and L.W. Byrd, "Review of Modeling and Analysis of Functionally Graded Materials and Structures," IMECE 2006, International Mechanical Engineering Congress and Exhibition, Chicago, November 2006. Invited by Professors A. Waas and P. Friedmann (University of Michigan).

51. V. Birman and L.W. Byrd, "Stability of Functionally Graded Optimally-Reinforced Panels" IMECE 2006, International Mechanical Engineering Congress and Exhibition, Chicago, November 2006. Invited by Profs. E. Corona (Notre Dame University) and S. Kyriakides (University of Texas at Austin).

52. G. Genin, V. Birman, K. Alistair, R. Das, B. Wopenka, J. Pasteris and S. Thomopoulos, "The Role of the Mineral for Stress Transfer at the Tendon-to-Bone Insertion Site," The 2007 Applied Mechanics and Materials Conference (McMat 2007), University of Texas at Austin, Austin, Texas, June 2007. Invited by Profs. X-L Gao (Texas A&M University), G. Subhash Michigan Technological University) and J.N. Reddy (Texas A&M University).

53. V. Birman, "Enhancement of Stability of Composite Plates using Functionally Graded Shape Memory Alloy Supporting Elements," The 2007 Applied Mechanics and Materials Conference (McMAT 2007), University of Texas at Austin, Austin, Texas, June 2007. Invited by Profs. E. Corona (Notre-Dame University) and S. Kyriakides (University of Texas at Austin).

54. V. Birman, L.W. Byrd and R. Chona, "Response of Spatially Tailored Structures to Thermomechanical Loading: Bending vs. Buckling," IMECE 2007, International Mechanical Engineering Congress and Exhibition, Chicago, November 2007. Invited by

Profs. E. Corona (Notre Dame University) and S. Kyriakides (University of Texas at Austin).

55. V. Birman, "Blast Mitigation in Composite Plates using Shape Memory Alloy Supports and Spatially Tailored Configurations," The 17th US Army Symposium on Solid Mechanics, Baltimore, Maryland, April 2007. Invited by Drs. A.M. Rajendran (Army Research Office), T.W. Wright (Army Research Laboratory) and B. LaMattina (Army Research Office).

56. V. Birman and G. Genin, "Blast Mitigation in Composite Plates using Shape Memory Alloy Supports and Spatially Tailored Configurations," IMECE 2007, International Mechanical Engineering Congress and Exhibition, Chicago, November 2007. Invited by Dr. B. LaMattina (Army Research Office).

57. V. Birman, "Functionally Graded Shape Memory Alloy Composites Optimized for Vibration Control," 6th International Symposium on Advanced Composites, Corfu, Greece, May, 2007. Invited by Prof. D. Saravanos (University of Patros, Patros, Greece).

58. G. Genin and V. Birman, "Micromechanics and Structural Response of Functionally Graded, Particulate-Matrix, Fiber-Reinforced Composites," IMECE 2008, International Mechanical Engineering Congress and Exhibition, Boston, November 2008. Invited by Prof. G.A. Kardomateas (Georgia Institute of Technology, Atlanta, Georgia).

59. V. Birman, "Strength and Stiffness of Fiber-Reinforced, Particulate-Matrix Composites," The 13th European Conference on Composite Materials (ECCM-13), Stockholm, Sweden, June 2008. Invited by Profs. O. Thomsen (Aalborg University, Denmark) and D. Zenkart (Swedish Institute of Technology).

60. C.H. Nguyen, K. Chandrashekhara and V. Birman, "Stability and Vibrations of Sandwich Panels with Stepped Facings," IMECE-2009, International Mechanical Engineering Congress and Exhibition, Buena Vista, Florida, November 2009. Invited by Prof. Dimitru I. Carunti (University of Texas – Pan American and Prof. Marco Amabili (McGill University).

61. V. Birman, "Properties of a Shape Memory Alloy Particulate Composite Material," IMECE-2009, International Mechanical Engineering Congress and Exhibition, Buena Vista, Florida, November 2009. Invited by Prof. G.A. Kardomateas (Georgia Institute of Technology).

62. Y. Liu, G.M. Genin, V. Birman, Jr-Shin Li and S. Thomopoulos, "Mechanics of Attachment at the Tendon-to-Bone Insertion Site," International Mechanical Engineering Congress and Exhibition, Buena Vista, Florida, November 2009. Invited by Prof. Xin-Lin Gao (Texas A&M University).

63. S. Thomopoulos, G. Genin, Y. Li, V. Birman and Jr-S. Li, "Attachment of Dissimilar Materials: Lessons from the Human Body," 16th US National Congress on Theoretical and Applied Mechanics, USNCTAM 2010, Paper USNCTAM2010-1286, State College, PA, June 27-July 2, 2010. Invited by Prof. Iwona Jasiuk, University of Illinois at Urbana-Champaign.

64. Y. Liu, G.M. Genin, V. Birman, Jr-Shin Li and S. Thomopoulos, "Biomimetic Optimization of Joints with Vast Multiscale Property Variations," International Mechanical Engineering Congress and Exhibition, Vancouver, Canada, November 2010. Invited by Profs. Xin-Lin Gao (Texas A&M University) and G.D. Seidel (Virginia Tech).

65. T.J. Keil, S. Hosder and V. Birman, "Functionally Graded Sandwich Panels with Variable Fiber Volume Fraction in the Facings," International Mechanical Engineering Congress and Exhibition, Vancouver, Canada, November 2010. Invited by Profs. G.A. Kardomateas (Georgia Tech) and Y. Frostig, (Technion-Israel Inst. Technology).

66. V. Birman, "Shape Memory Alloy Components for Maximum Energy Dissipation in Protective Systems," Workshop on Intelligent and Adaptive Systems for Dynamic Load Mitigation, Aberdeen, Maryland, May 27-28, 2010. Invited by Dr. Bruce LaMattina and COL Reed F. Young (Army Research Office).

67. Y. Liu, A. Gitomer-Schwartz, V. Birman, C. Chen, S. Thomopoulos and G.M. Genin, "Stress in the Developing Rotator Cuff: Effects of Evolving Material and Structural Properties." Paper McMat2011-4527. ASME 2011 Applied Mechanics and Materials Conference, May 31 – June 2, 2011, Chicago, IL. Invited by Igor Sevastianov, New Mexico State University.

68. Y. Liu, A. Gitomer-Schwartz, V. Birman, C. Chen, S. Thomopoulos and G.M. Genin, "Partially Mineralization of Soft Tissue During Development, and Speculation on its Role in Modulating Stress." Paper IMECE2011-64585. ASME 2011 International Mechanical Engineering Congress & Exposition, Colorado Convention Center, Denver, CO, November, 2011. Invited by Thao Nguyen, Johns Hopkins University.

69. V. Birman and T. Keil, "Nonlinear Sandwich Energy Piezoelectric Harvester Coupled with Flextensional Displacement Multiplier," ASME 2011 International Mechanical Engineering Congress & Exposition, Colorado Convention Center, Denver, CO, November, 2011. Invited by Profs. G. A. Kardomateas (Georgia Tech), Y. Frostig and D. Durban (Technion-Israel Inst. Technology).

70. V. Birman, K. Chandrashekhara, M.S. Hopkins, J.S. Volz, "Development of Sandwich Structures with Polyurethane Foam Core for Bridge Applications," ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, TX,

November, 2012. Invited by Profs. G. A. Kardomateas (Georgia Tech) and Y. Frostig (Technion-Israel Inst. Technology).

71. V. Birman, Y. Liu, S. Thomopoulos and G.M. Genin, "Multiscale Optimization of Joints of Dissimilar Materials in Nature and Lessons for Engineering Applications," ASME 2012 International Mechanical Engineering Congress & Exposition, San Diego, November, 2012. Invited by Prof. Xin-Lin Gao, University of Texas at Dallas.

72. V. Birman, K. Chadrashekhara, "J.S. Volz, Z. Huo, M. Mohamed and S. Anandan, "Sandwich Beams with Truss-Folded Core Filled with Polyurethane Foam," ASME 2013 International Mechanical Engineering Congress & Exposition, San Diego, November, 2013. Invited by Profs. G. A. Kardomateas (Georgia Tech) and Y. Frostig (Technion-Israel Inst. Technology).

73. J.J. Boyle, V. Birman, M. Kume, R.B. Pless, S. Thomopoulos and G.M. Genin, "The Science of Slipping between the Cracks: Strain Mapping on a Failing Specimen," Paper IMECE2013-66714. 2013 ASME International Mechanical Engineering Conference and Exposition, San Diego, CA, November 2013. Invited by Dr. E. Fang (DOE Sandia National Labs), Dr. L.C. Russell (U.S. Army Research Office) and Dr. L.R. Xu (University of Texas at El Paso).

74. V. Birman, S. Thomopoulos, J.Y. Hu and G.M, Genin, Paper IMECE 21013-62618, "Interdigitation of Materials and Its Implication for Engineering and Biological Attachments," ASME 2013 International Mechanical Engineering Congress & Exposition, IMECE 2013. San Diego, November 20th, 2013. Invited by Professor Xin-Lin Gao (University of Texas at Dallas).

75. Y. Liu, A.G. Schwartz, V. Birman, S. Thomopoulos, and G.M. Genin, "Adaptation of Developing Tendon-to-Bone Insertion Site to Optimize Stress Environment," The 19th International Conference on Composite Materials (ICCM-19), Montreal, Canada, July 30th, 2013. Invited by Prof. A. Kalamkarov, Dalhousie University, Halifax, Canada.

76. S. Thomopoulos, V. Birman and G.M. Genin, "Multi-Scale Mechanics of the Tendon-to-Bone Attachment," 7th World Congress of Biomechanics, Boston, July 6-11, 2014, Invited by Profs. Elise F. Morgan (Boston University) and Tammy L.H. Donahue (Michigan Tech).

77. V. Birman, "The Mechanics of Interdigitation at the Tendon-to-Bone Attachment," 7th World Congress of Biomechanics, Boston, July 6-11, 2014, Invited by Prof. S. Thomopoulos (Washington University).

78. H. Tuwair, J. Volz, M.A. ElGawady, M. Mohamed, K. Chandrashekhara and V. Birman, "Testing and Evaluation of GFRP Sandwich Bridge Deck Panels with Polyurethane

Foam Core," Paper IMECE2015-50071. ASME International Mechanical Engineering Congress and Exposition (IMECE 2015). November 13-19, 2015, Houston, TX. Invited by Profs. G.A. Kardomateas (Georgia Institute of Technology) and Y. Frostig, (Technion-Israel Institute of Technology).

79. V. Birman, G.M. Genin and S. Thomopoulos, "Multifunctional and Multiscale Natural Optimization of the Tendon-to-Bone Insertion Site: Composite Mechanics Lessons from Biology," Paper IMECE2015-50625. ASME International Mechanical Engineering Congress and Exposition (IMECE 2015). November 13-19, 2015, Houston, TX. Invited by Prof. X-L Gao (Southern Methodist University).

80. V. Birman and Nam Vo, "Wrinkling in Sandwich Structures with a Functionally Graded Core," Paper 68340. ASME International Mechanical Engineering Congress and Exposition (IMECE 2016). November 11-17, 2016, Phoenix, AZ. Invited by Prof. Ryan S. Elliott (University of Minnesota).

81. V. Birman and H. Costa, Wrinkling of Functionally Graded Sandwich Panels subject to Biaxial Compression and In-plane Shear Loads," IMECE International Mechanical Engineering Congress & Exposition, November 3-9, 2017, Tampa Florida. Paper IMECE2017-70095. Invited by G. Kardomateas (Georgia Tech) and Y. Frostig (Technion, Israel).

82. V. Birman and J.N. Lee, "Alleviating Thermomechanical Wrinkling in Functionally Graded Sandwich Panels using Nanoscale Reinforcement of the Core Material," IMECE International Mechanical Engineering Congress & Exposition, November 3-9, 2018, Pittsburgh, Pennsylvania. Paper IMECE2018-88817. Invited by E. Suhir (Portland State University) and M. Ostoja-Starzewski (University of Illinois at Urbana-Champaign).

**III-8. CONFERENCE PRSENTATIONS**

1. V. Birman and V.S. Kalinin, "On the Influence of Transverse Vibrations on Stability of Plates and Shells", The X-th All-Union Conference on Theory of Shells and Plates, USSR, September 1975.

2. V. Birman, "Stability of Vibrations of Rectangular Plates with Initial Imperfections", 21-st Israel Annual Conference on Aviation and Astronautics, Israel, February 1979.

3. I. Elishakoff, V. Birman and J. Singer, "Influence of Initial Imperfections on Nonlinear Free Vibration of Elastic Bars", 26-th Israel Annual Conference on Aviation and Astronautics, February 1984.

4. V. Birman and R. Latorre, "Study of the Range of Simple Harmonic Response in Non-Linear Ship Rolling" 19th Midwestern Mechanics Conference, Ohio, September 1985

(abstract published in Proceedings of the Conference: Developments in Mechanics, Vol. 13, pp. 347-348).

5. V. Birman, "Influence of Axisymmetric Imperfections on Dynamic Response of Cylindrical Shells", 22-nd Annual Technical Meeting, Society of Engineering Science, Pennsylvania, October 1985.

6. I. Elishakoff, V. Birman and C.W. Bert, "On Free Vibration of Structures with Different Tension and Compression Moduli", The 1985 Winter Annual Meeting of ASME; Symposium on Material Nonlinearity in Vibration Problems, Miami, November 1985.

7. A. Suda, R. Latorre and V. Birman, "Study of the Interaction of the Single Point Mooring Buoy and Ship Surge", The Ninth Annual Energy-Sources Technology Conference, New Orleans, February 1986.

8. V. Birman, "Nonlinear Oscillations of Long Orthotropic Rectangular Plates", The XIII-th Southeastern Conference on Theoretical and Applied Mechanics, Columbia, South Carolina, April 1986.

9. V. Birman and C.W. Bert, "Non-linear Beam-type Vibrations of Long Cylindrical Shells", 27th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics and Materials Conference, San Antonio, May 1986.

10. C.W. Bert and V. Birman, "Dynamic Stability of Shear Deformable Antisymmetric Angle-Ply Plates", The X-th U.S. National Congress of Applied Mechanics, Austin, June 1986.

11. V. Birman, "On the Effects of Nonlinear Elastic Foundation on Free Vibration of Beams", The 1986 Winter Annual Meeting of ASME, Anaheim, December 1986.

12. V. Birman, "Effect of Shear Deformation and Rotatory Inertia on Dynamic Buckling of Elastic Plates", The 6-th International Symposium on Offshore Mechanics and Arctic Engineering, Houston, March 1987.

13. V. Birman, "Dynamic Buckling of Antisymmetrically Laminated Imperfect Rectangular Plates", The Fourth International Conference on Composite Structures, Paisley, Scotland, July 1987.

14. V. Birman and R. Latorre, "Soviet Technique for Estimating Post-Welded Deflection: Case of Butt Welding", The 1987 Ship Production Symposium, New Orleans, August 1987.

15. V. Birman and C.W. Bert, "Response of Composite Structures to Blast Loading", The Sixth International Conference on Composite Materials, London, July 1987. Poster session.

16. V. Birman and C.W. Bert, "Nonlinear Parametric Instability of Antisymmetrically Laminated Angle-Ply Plates", The 28-th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics and Materials Conference, Monterey, April 1987.

17. V. Birman, "Parametric Vibrations of Long Cylindrical Shells Subject to Transverse Static Load", Twentieth Midwestern Mechanics Conference, Purdue University, West Lafayette, Aug./Sept. 1987.

18. V. Birman and P. Twinprawate, "Free Vibrations of Pipes Containing Fluid", The 3rd Annual Current Practices and New Technology in Ocean Engineering Symposium (Energy-Sources Technology Conference), New Orleans, January 1988.

19. V. Birman, "Flutter of Stiffened Orthotropic Cylindrical Shells with Initial Imperfections", The ASCE Engineering Mechanics Division Specialty Conference, Blacksburg, Virginia, May 1988.

20. V. Birman, C.W. Bert and I. Elishakoff, "Effect of Aerodynamic Heating on Flutter of a Laminated Composite Plate", The 26-th International Council of the Aeronautical Sciences, Jerusalem, Israel, August 1988.

21. C.W. Bert and V. Birman, "Response of Prestressed Cylindrically Curved Composite Structures Subjected to Low Velocity Impact", The 4-th Japan-U.S. Conference on Composite Materials, Washington D.C., June 1988.

22. D. Durban and V. Birman, "Elasto-Plastic Strain Concentration at a Circular Hole Embedded in an Anisotropic Sheet", The 30-th Israel Annual Conference on Aviation and Astronautics, Israel, February 1989.

23. V. Birman and L. Librescu, "Supersonic Flutter of Shear Deformable Composite Flat Panels", AIAA/ASME/ASCE/AHS/ASC 30-th Structures, Structural Dynamics and Materials Conference, Mobile, Alabama, April 1989.

24. V. Birman, "Axisymmetric Panel Flutter of Ring-Reinforced Orthotropic Cylindrical Shells", AIAA/ASME/ASCE/AHS/ASC 30-th Structures, Structural Dynamics and Materials Conference, Mobile, Alabama, April 1989.

25. V. Birman and E. Sarasart, "Blast Resistance of Reinforced Panels", 1989 SNAME Spring Meeting and STAR Symposium, New Orleans, Louisiana, April 1989.

26. V. Birman, "Thermoelastic Problem of a Thick Orthotropic Beam on Two-Dimensional Elastic Foundation", The 1989 ASME Winter Annual Meeting, San Francisco, December 1989.

27. V. Birman, "Thermal Shock of Reinforced Composite Cylinders", The 1989 ASME Winter Annual Meeting, San Francisco, December 1989.

28. V. Birman, "Axisymmetric Thermal Problems of Transversely Isotropic Multi-Layered Spherical Shells", The XV-th Southeastern Conference on Theoretical and Applied Mechanics, Atlanta, Georgia, March 1990.

29. V. Birman, "Thermoelastic Problems of Multilayered Cylinders", The 2nd Intersociety Conference on Thermal Phenomena in Electronic Systems, Las Vegas, Nevada, June 1990.

30. V. Birman, "Thermal Bending of Shear Deformable Orthotropic Cylindrical Shells Reinforced by Cylindrically Orthotropic Rings", The 1990 ASME Winter Annual Meeting, Dallas, November 1990.

31. A. Kiaye, C.W. Bert and V. Birman, "Analysis of Vibrations of Discreetly Reinforced Composite Cylindrical Shells", AIAA/ASME Oklahoma Symposium XI, Stillwater, OK, February 1991.

32. V. Birman and M.G. Magid, "Semi-Membrane Theory for Solution of Dynamic Problems of Long Composite Cylindrical Shells", The 13-th Biennial ASME Conference on Mechanical Vibration and Noise, Miami, Florida, September 1991.

33. V. Birman, "Nonlinear Pseudo-Axisymmetric Bending of Generally Laminated Cylindrical Shells", The 1991 ASME Winter Annual Meeting, Atlanta, Georgia, December 1991.

34. V. Birman, "Dynamic and Static Pseudo-Axisymmetric Thermal Problems of Generally Laminated Cylindrical Shells", The ASME Summer Mechanics and Materials Conference, Tempe, Arizona, April-May 1992.

35. C.W. Bert, C.D. Kim and V. Birman, "Dynamic Stability of Composite Material Circular Cylindrical Shells with Orthotropic Stiffeners", The Ninth ASCE Engineering Mechanics Conference, College Station, Texas, May 1992.

36. C.W. Bert and V. Birman, "Buckling of a Coating Bonded to a Round Bar Subjected to Axial Extension", The 29-th Annual Technical Meeting of the Society of Engineering Science, San Diego, California September 1992.

37. V. Birman, "Theory of Geometrically Nonlinear Composite Plates with Piezoelectric Stiffeners". The 1992 ASME Winter Annual Meeting, Anaheim, California, November 1992.

38. V. Birman and A. Nagar, "Crack Arrester Layers Technique for Composite Plates". The 1992 ASME Winter Annual Meeting, Anaheim, California, November 1992.

39. V. Birman and A. Nagar, "An Approach to Three-Dimensional Analysis of Finite Three-Layered Composite Plates with a Through Crack," The 34-th

AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, La Jolla, California, April 1993.

40. C.W. Bert, C-D. Kim and V. Birman, "Analysis of Coating Instability in Composites with Coated Graphite Fibers Subjected to Uniaxial Loading and Temperature Change", The 1993 ASME Winter Annual Meeting, New Orleans, Louisiana, November 1993.

41. D.A. Saravanos, V. Birman and D.A. Hopkins, "Detection of Delaminations in Composite Beams Using Piezoelectric Sensors", The 35-th AIAA Structures, Structural Dynamics and Materials Conference, Hilton Head, South Carolina, April 1994.

42. D.A. Saravanos, V. Birman and D.A. Hopkins, "Sensory Composite Beams for Delamination Detection in Thermal Environments", The First International Conference on Composites Engineering (ICCE-1), New Orleans, Louisiana, August 1994.

43. D.A. Saravanos, V. Birman and D.A. Hopkins, "Detection of Delaminations in Composite Beams Operating at Elevated Temperature", The 1994 ASME Winter Annual Meeting, Chicago, Illinois, November 1994.

44. V. Birman, "Optimum Design of Hybrid Shape Memory Alloy Sandwich Panels for Maximum Natural Frequencies", The 1996 SPIE Symposium on Smart Structures and Materials, San Diego, California, February 1996.

45. V. Birman, "Theory of Cylindrical Composite Pressure Vessels with Shape Memory Ring Stiffeners", The 37-th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Salt Lake City, Utah, April 1996.

46. V. Birman, " Control of Thermal Deformations of Integrated Optical and Shape Memory Alloy Fibers", The 1996 International Mechanical Engineering Congress and Winter Annual Meeting, Atlanta, Georgia, November 1996.

47. V. Birman, "Comparison of Effectiveness of Shape Memory Alloy and Composite Stiffeners in Stability Problems of Composite Shells and Plates", The 1996 International Mechanical Engineering Congress and Winter Annual Meeting, Atlanta, Georgia, November 1996.

48. V. Birman, "Fracture Mechanics Problem for a Shape Memory Alloy Plate", The International Workshop on Structural Health Monitoring, Stanford University, Stanford, California, September 1997.

49. C.W. Bert and V. Birman, "Stress Dependency of the Thermoelastic and Piezoelectric Coefficients", The 1997 ASME International Mechanical Engineering Congress and Exposition, Dallas, Texas, November 1997.

50. L.W. Byrd and V. Birman, "Theoretical Foundations for Nondestructive Detection of Cracks in Ceramic Matrix Composites Based on Surface Temperature", Second International Conference on Composite Science and Technology, Durban, South Africa, June 1998.

51. V. Birman, G.J. Knowles and J. Murray, "Dynamics of Piezoelectrically and Mechanically Reinforced Spherical Caps", The Fifth International Conference on Composites Engineering (ICCE-5), Las Vegas, Nevada, July 1998.

52. V. Birman and G.J. Simitses, "Theory of Box-Type Sandwich Shells with Dissimilar Facings Subjected to Thermomechanical Loads", The 1998 ASME Mechanical Engineering Congress and Exposition, Anaheim, California, November 1998.

53. V. Birman and L.W. Byrd, "Stiffness of Woven Ceramic Matrix Composites with Matrix Cracks", The 40th AIAA Structures, Structural Dynamics and Materials Conference, St. Louis, Missouri, April 1999.

54. V. Birman and L.W. Byrd, "Selected Issues of Mechanics of Ceramic Matrix Composites with Cracks", The 1999 ASME International Mechanical Engineering Congress and Exposition, Nashville, Tennessee, November 1999.

55. V. Birman and G.J. Simitses, "Theory of Cylindrical Sandwich Shells with Woven Dissimilar Facings", The 14th Annual Technical Conference of the American Society for Composites, Dayton, Ohio, September 1999.

56. V. Birman and G.J. Simitses, "Theory of Elliptical Sandwich Cylindrical Shells with Dissimilar Facings", The 12th International Conference on Composite Materials, Paris, July 1999.

57. V. Birman and G.J. Simitses, "Stability of Cylindrical Sandwich Shells with Dissimilar Facings", The 1999 ASME International Mechanical Engineering Congress, Nashville, Tennessee, November 1999.

58. G.J. Simitses, G. Song, V. Birman and Y. Frostig, "Similarity Conditions for Sandwich Shell-Like Configurations", The 1999 ASME International Mechanical Engineering Congress, Nashville, Tennessee, November 1999.

59. V. Birman and L.W. Byrd, "Theoretical Foundations for Using Thermography for Nondestructive Detection of Matrix Cracks in Ceramic Matrix Composites", The Second International Workshop for Health Monitoring, Stanford University, California, September 1999.

60. V. Birman and G.J. Simitses, "Vibration of Sandwich Panels with matrix Cracks in the Facings," The Fifth International Conference on Sandwich Construction, Zurich, Switzerland, September 2000.

61. V. Birman, G.J. Simitses and L. Shen, "Stability of Sandwich Cylindrical Shells with Stiffened Facings," 2000 the International Mechanical Engineering Congress, Orlando, Florida, November 2000.

62. V. Birman and C.W. Bert, "On the Choice of Shear Correction Factor in Sandwich Structures," the 2000 International Mechanical Engineering Congress, Orlando, Florida, November 2000.

63. A. Tabiei, R. Tanov and V. Birman, "Sandwich Shell Finite Element for Dynamic Explicit Analysis," the 2000 International Mechanical Engineering Congress, Orlando, Florida, November 2000.

64. L.W. Byrd and V. Birman, "On the Feasibility of Using Thermography for Nondestructive Detection of Matrix Cracks in Ceramic Matrix Composites," The Seventh International Conference on Composites Engineering (ICCE/7), Denver, Colorado, July 2000.

65. V. Birman and L.W. Byrd, "Damping in Unidirectional and Cross-Ply Ceramic Matrix Composites with Matrix Cracks," The 2001 ASME International Mechanical Engineering Congress and Exposition, New York, New York, November 2001.

66. V. Birman and L.W. Byrd, "Vibrations of Cross-Ply Ceramic Matrix Composite Beam with Matrix Cracks in Longitudinal and Transverse Layers," The 10$^{th}$ International Congress on Fracture, Honolulu, Hawaii, December 2001.

67. V. Birman, "Damping and Wrinkling in Sandwich Panels Accounting for Biaxial State of Stresses," Office of Naval Research Review Composites for Marine Structures, May 2002.

68. S. Cargill and V. Birman, "Analysis of Sandwich Panels with a Web-Reinforced Foam Core Subjected to Transverse Pressure," The 17$^{th}$ Technical Conference of the American Society for Composites, Purdue University, West Lafayette, Indiana, October 2002.

69. V. Birman and L.W. Byrd, "Design Methodology for Cocured Z-Pinned Ceramic Matrix Composite Joints," The 2002 ASME International Mechanical Engineering Congress and Exposition, New Orleans, Louisiana, November 2002.

70. C.W. Bert and V. Birman, "Wrinkling of Composite Facing Sandwich Panels Under Biaxial Loading," The 2002 ASME International Mechanical Engineering Congress and Exposition, New Orleans, Louisiana, November 2002.

71. V. Birman and G.J. Simitses, "Dynamic Stability of a Long Cylindrical Shell Subjected to Periodic-in-Time Lateral Pressure," The 2002 ASME International Mechanical Engineering Congress and Exposition, New Orleans, Louisiana, November 2002.

72. X. Huang, V. Birman, A. Nanni and G. Tunis, “Innovative Composite Materials: Steel Reinforced Polymer (SRP) and Steel Reinforced Grout (SRG),” Tenth International Conference on Composites Engineering (ICCE/10), New Orleans, Louisiana, July 2003.

73. V. Birman, “Thermomechanical Wrinkling in Sandwich Structures,” Working Group Meeting, Modeling of Composite Materials/Structures subject to Fire Research, Office of Naval Research, Virginia Tech, Blacksburg, Virginia, October 28, 2003.

73. V. Birman, “Thermomechanical Wrinkling of Composite Facings in Sandwich Structures,” The 2003 ASME International Mechanical Engineering Congress and Exposition, Washington, DC, November 2003.

74. L.W. Byrd and V. Birman, “Fracture Toughness of Z-Pinned Lapped Joints,” The 2003 ASME International Mechanical Engineering Congress and Exposition, Washington, DC, November 2003.

75. G.J. Simitses, G.A. Kardomateas and V. Birman, “Thermo-Elastoviscoplastic Postbuckling Analysis of Structures,” The 2003 ASME International Mechanical Engineering Congress and Exposition, Washington, DC, November 2003.

76. V. Birman, “Effect of Elevated Temperature on Wrinkling in Composite Sandwich Panels,” Meeting SAMPE 2004 (Society for the Advancement of Material and Process Engineering), Long Beach, California, May 16-20, 2004.

77. E. Wobbe, P. Silva, B.L. Barton, L.R. Dharani, V. Birman, A. Nanni, T. Alkhrdaji, J. Thomas and G. Tunis, “Flexural Capacity of RC Beams Externally Bonded with SRP and SRG,” Meeting SAMPE 2004 (Society for the Advancement of Material and Process Engineering), Long Beach, California, May 16-20, 2004.

78. G.M. Genin, J.P. Marquez, V. Birman, M.J. Jakiela, S. Thomopoulos, “Stress Concentration and the Optimal Morphology of Tendon to Bone Insertions,” Biomedical Engineering Society, 2004 BMES Annual Meeting, Philadelphia, Pennsylvania, October 13-16, 2004.

79. V. Birman, G.J. Simitses and G.A. Kardomateas, “Response of a Sandwich Panel to Elevated Temperature on one of the Surfaces,” IMECE-2004 (International Mechanical Engineering Congress and Exposition), Anaheim, California, November 17, 2004.

80. V. Birman, “Bending and Wrinkling of a Sandwich Panel Subject to Compression and Elevated Temperature or Heat Flux on One of the Surfaces,” Office of Naval Research Composite Materials and Structures Subjected to Fire Research Working Group Meeting, May 21 2004, Long Beach, California.

81. V. Birman, J. Holmes and G.A. Kardomateas, “Tests and Analysis for the Compressive

Behavior of Composites Following Exposure to Fire," Office of Naval Research Composite Materials and Structures Subjected to Fire Research Working Group Meeting, November 4, 2004, Washington, DC.

82. V. Birman and L.W. Byrd, "Effectiveness of Z-Pins in the Enhancement of the Integrity of Co-Cured Composite Joints," IMECE 2004 (International Mechanical Engineering Congress and Exposition, Anaheim, California, November 18, 2004.

83. V. Birman and L.W. Byrd, "On the Effectiveness of Z-Pins in Preventing Mode I Fracture in Co-Cured Joints Subject to High Temperature," IMECE 2004 (International Mechanical Engineering Congress and Exposition, Anaheim, California, November 18, 2004.

84. G. Knowles, R. Bird and V. Birman, "Shape Memory Alloy Springs used as Reduced Power/Weight Actuators," IMECE 2004 (International Mechanical Engineering Congress and Exposition, Anaheim, California, November 16, 2004.

85. B. Barton, E. Wobbe, L.R. Dharani, P. Silva, V. Birman, A. Nanni, T. Alkhrdaji, J. Thomas and G. Tunis, "Characterization of RC Beams Strengthened by Steel Reinforced Polymer and Grout (SRP & SRG) Composites," ICRACM-2004: International Conference on Recent Advances in Composite Materials, Banaras Hindu University, Varanasi, India, December 2004.

86. S. Thomopoulos, J.P. Marquez, B. Weinberger, V. Birman and G.M. Genin, "Structural Mechanisms for Reducing Stress Concentration at the Tendon to Bone Insertion," The 51st Meeting of the Orthopedic Research Society, February 2005.

87. V. Birman, "Response of Compressed Composite and Sandwich Structures Exposed to Fire," Office of Naval Research Composite Materials and Structures Subjected to Fire Research Working Group Meeting, March 16, 2005, Washington, DC.

88. V. Birman, G. Genin and S. Thomopoulos, "An Analytical Solution for the Stress Field Along Compressive Regions of Tendon and Its Role on Proteoglycan," ASME 2005 Summer Bioengineering Conference, Vail, Colorado, June 22-26, 2005.

89. S. Thomopoulos, G. Genin, R. Das and V. Birman, "The Role of the Stress Environment on Fibrocartilage Development," The 52nd Annual Meeting of the Orthopedic Research Society, February 2006.

90. L.W. Byrd and V. Birman, "Vibrations of Intact and Damaged Functionally Graded Beams," FGM 2006: Multiscale and Functionally Graded Materials Conference, Honolulu, Hawaii, October 15-18, 2006.

91. V. Birman and L.W. Byrd, "Dynamics of Functionally Graded Panels Reinforced by

Flexible Ribs," FGM 2006: Multiscale and Functionally Graded Materials Conference, Honolulu, Hawaii, October 15-18, 2006.

92. R. Chona, L.W. Byrd and V. Birman, "Effect of Two-Dimensional Grading on the Thermomechanical Response of a Panel," FGM 2006: Multiscale and Functionally Graded Materials Conference, Honolulu, Hawaii, October 15-18, 2006.

93. S. Thomopoulos, A. Kent, V. Birman, R. Das, B. Wopenka, J. Pasteris and G. Genin, "Mineral Composition at the Tendon-to-bone Insertion and its Role in Stress Transfer," the 2007 ASME Summer Bioengineering Conference (SBC 2007), Keystone, Colorado, June 20-24, 2007.

94. V. Birman and L. Byrd, "Thermomechanical Response of Spatially Tailored and Functionally Graded Structures," Meeting of the Structural Center of the Air Force, University of Illinois at Urbana-Champaign, February 5-7, 2007.

95. V. Birman and L.W. Byrd, IMECE 2007, Advantages of Functionally Graded Structures Subject to Thermal Field Over Symmetrically Laminated Counterparts," International Mechanical Engineering Congress and Exposition (IMECE 2007), Chicago, November 14, 2007.

97. G. Kardomateas, V. Birman and G.J. Simitses, "Composites-in-Fire: Structural Integrity and Residual Strength," 6$^{th}$ International Symposium on Advanced Composites, Corfu, Greece, May 2007.

98. G.M. Genin, A. Kent, V. Birman, R. Das, B. Wopenka, J. Pasteris and S. Thomopoulos, "Reverse Engineering the Rotator Cuff Tendon-to-Bone Insertion," The Biomedical Engineering Society Annual Fall Meeting (BMES 2007), Los Angeles, California, September, 26-28, 2007.

99. G.A. Kardomateas, G. Simitses and V. Birman, "Buckling Strength of Composites Subjected to Fire," The International Mechanical Engineering Congress and Exposition (IMECE 2007), Chicago, November 14, 2007

100. S. Thomopoulos, A. Kent, B. Wopenka, J. Pasteris, V. Birman, R. Das, G. Genin, "Modeling the Tendon-to-Bone Insertion: a Functionally Graded Material," The 8$^{th}$ World Biomaterials Congress, Amsterdam, The Netherlands, May 28-June 1, 2008.

101. G.M. Genin, Y. Yoon, A.J. Kent, B. Wopenka, J.D. Pasteris, V. Birman, R. Das and S. Thomopoulos, "Mechanics and Surgical Strategies for Tendon-to-Bone Repair," 45$^{th}$ Annual Technical Meeting, Society of Engineering Science, University of Illinois at Urbana-Champaign, October 12-15, 2008.

102. C. H. Nguyen, K. Chandrashekhara and V. Birman, "Sandwich Panels with Stepped Facings," The 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Palm Springs, CA, May 4-7, 2009.

103. B. Barton, M. Shetty, V. Birman and L. Dharani, "Tapered Cantilever Beam Retrofitted with Steel Reinforced Polymer or Grout," The 2009 Electric Transmission and Substation Structural Conference, ASCE, Fort Worth, Texas, November 8-12, 2009.

104. Y.X. Liu, S. Thomopoulos, V. Birman, J-S Li and G.M. Genin, "The Role of a Soft Tissue Interfacial System in the Attachment of Tendon to Bone," SBC-2010-19560, ASME Summer Bioengineering Conference, Naples, FL, June 16-19, 2010.

105. Y.X. Liu, S. Thomopoulos, V. Birman, J-S Li and G.M. Genin, "Bi-material Attachment Through a Soft Tissue Interfacial System," First Annual Musculoskeletal Winter Symposium. Eric P. Newman Educational Center, Washington University School of Medicine, St. Louis, MO, January 27, 2011.

106. Y. Liu, V. Birman, Ch. Chen, S. Thomopoulos and G.M. Genin, "Tailoring the Gross Morphology of the Tendon-to-Bone Insertion for the Reduction of Stress Concentrations," The ASME 2011 Summer Bioengineering Conference, Farmington, PA, June 22-25, 2011.

107. Y. Liu, V. Birman, Ch. Chen, S. Thomopoulos and G.M. Genin, "Elastic Stress Singularities: Implications for the Attachment of Tendon to Bone," The ASME 2011 Summer Bioengineering Conference, Farmington, PA, June 22-25, 2011.

108. Y. Liu, V. Birman, Ch. Chen, S. Thomopoulos and G.M. Genin, "On the Mechanics of Partially Mineralized Tissues and Their Implications for the Attachment of Tendon to Bone," The ASME 2011 Summer Bioengineering Conference, Farmington, PA, June 22-25, 2011.

109. Y. Liu, A. Gitomer-Schwartz, V. Birman, Ch. Chen, S. Thomopoulos and G.M. Genin, "Where Does Mineral Fit Within Partially Mineralized Collagen, and What Does It Mean for the Attachment of Tendon to Bone?" Paper McMat2011-4535. ASME 2011 Applied Mechanics and Materials Conference, May 31 – June 2, 2011, Chicago, IL.

110. V. Birman and T. Keil, "Observations on Energy Harvesting Techniques and Flextensional Bimorph Technologies," Workshop on Revolutionary Fundamental Research in Support of Energy Harvesting, April 7$^{th}$, 2011, Austin, Texas.

111. A.G. Schwartz; Y.X. Liu, V. Birman, C.Q. Chen and G.M. Genin, and S. Thomopoulos, "The Development of a Functional Enthesis is Driven by Stress Concentrations at the

Tendon-to-Bone Interface," 2012 Annual Meeting of the Orthopaedic Research Society, February 4-7, 2012, San Francisco, California.

112. V. Birman, Y. Liu, S. Thomopoulos and G.M. Genin, "Multiscale Optimization of Joints of Dissimilar Materials in Nature and Lessons for Engineering Applications," Advanced Materials Modelling for Structures, International Union of Theoretical and Applied Mechanics, Paris, France, April 23-27, 2012.

113. M. Mohamed, Z. Huo, S. Hawkins, K. Chandrashekhara, V. Birman and J. Volz, "Moisture Effects on Performance of Polyurethane Composite Sandwich Panels Manufactured Using VARTM," SAMPE Conference, Long Beach, California, May 6-9, 2013.

114. Y. Liu, V. Birman, S. Thomopoulos, G.M. Genin, "Resilience across Length Scales in the Attachment of Tendon to Bone," The ASME 2013 2nd Global Congress on Nanoengineering for Medicine & Biology, Paper NEMB2013-93455, February 4-6, 2013, Boston, Massachusetts.

115. J.J. Boyle, M. Kume, V. Birman, R.B. Pless, S. Thomopoulos and G.M. Genin, "Improved Optical Strain Mapping, with Detection of Strain Localization," Joint Conference: Society of Engineering Science 50th Annual Meeting and ASME-AMD Annual Summer Meeting, Brown University School of Engineering, Providence, Rhode Island, July 28-31, 2013.

116. V. Birman, S. Thomopoulos, J.Y. Hu and G.M. Genin, "Interdigitation of Materials and Its Implications for Engineering and Biological Attachments," ASME 2013 International Mechanical Engineering Congress & Exposition, San Diego, November, 2013.

117. M. Mohamed, Z. Huo, S. Hawkins, K. Chandrashekhara, V. Birman and J. Volz, "Moisture Effects on Performance of Polyurethane Composite Sandwich Panels Manufactured Using VARTM," Paper # 3165, The Society for the Advancement of Material and Process Engineering (SAMPE) Conference, Long Beach, CA, May 6-9, 2013.

118. V. Birman, S. Thomopoulos, J.Y. Hu and G.M, Genin, Paper IMECE 21013-62618, "Interdigitation of Materials and Its Implication for Engineering and Biological Attachments," ASME 2013 International Mechanical Engineering Congress & Exposition, IMECE 2013. San Diego, November 20th, 2013.

119. J.Y. Liu, A. Black, A.G. Schwartz, V. Birman, S. Thomopoulos and G. Genin, "Image-Based Modeling of Tendon-to-Bone Attachment," 7th World Congress of Biomechanics, Boston, July 6-11, 2014.

120. V. Birman, “Bioinspired Functionally Graded Shells and Plates: Exact Solutions,” The 29th American Society for Composites Technical Conference / 16th US-Japan Conference on Composite Materials, San Diego, September 8-10, 2014.

121. H. Tuwair, J. Volz, M. Elgawady, M. Mohamed, K. Chandrashekhara and V. Birman, “Testing and Evaluation of GFRP Sandwich Bridge Deck Panels Filled with Polyurethane Foam,” The 29th American Society for Composites Technical Conference / 16th US-Japan Conference on Composite Materials, San Diego, September 8-10, 2014.

122. J. Lipner, J. Boyle, V. Birman, G. Genin and S. Thomopoulos, “Network Stiffening of Nanofiber Scaffolds by Mineral,” The SB3C2015, Summer Biomechanics, Bioengineering and Biotransport Conference, June 17-20, 2015, Snowbird Resort, Utah.

123. Y. Hu, V. Birman, A. Demyier-Black, A.G. Schwartz and S. Thomopoulos, “Stochastic Interdigitation as a Cross-Scale Toughening Mechanism at the Attachment of Tendon to Bone,” Paper NEMB2015-8091, The ASME 4th Global Conference on Nanoengineering for Medicine and Biology (NEMB 2015), April 19-22, 2015, Minneapolis, Minnesota.

124. G. Genin, B. Babaei, J. Boyle, A. Demyier-Black, Y. Hu, J. Lipner, F. Saadat, V. Birman and S. Thomopoulos, “Multiscale Modelling of Partially Mineralized Tissues,” Paper NEMB2015-8120, The ASME 4th Global Conference on Nanoengineering for Medicine and Biology (NEMB 2015), April 19-22, 2015, Minneapolis, Minnesota.

125. F. Saadat, V. Birman, S. Thomopoulos, G.M. Genin, “Functional Grading of Chondrons,” Paper IMECE2015-52591. ASME International Mechanical Engineering Congress and Exposition (IMECE 2015). November 13-19, 2015, Houston, TX.

126. G.M. Genin, V. Birman, and S. Thomopoulos. Multiscale mechanics at biological interfaces. Sino-US Biomedical Engineering and Medical Robotics Interdisciplinary Innovation Forum, Suzhou, China, November 3-6, 2016.

127. S.W. Linderman, I. Kormpakis, R.H. Gelberman, V. Birman, U.G.K. Wegst, G.M. Genin and St. Thomopoulos, “Adhesive Sutures,” Paper 67522. ASME International Mechanical Engineering Congress and Exposition (IMECE 2016). November 11-17, 2016, Phoenix, AZ.

128. Y. Frostig, G. A. Kardomateas and V. Birman “Non-Linear Geometrical Behavior of a Sandwich Panel with an FGM Core - Extended High Order Approach,” Paper 67466. ASME International Mechanical Engineering Congress and Exposition (IMECE 2016). November 11-17, 2016, Phoenix, AZ.

129. S.W. Linderman, M. Golman, D. Yoon, V. Birman, G.M. Genin, S. Thomopoulos, “Strengthening Tendon-to-Bone Repair with Mechanically-Optimized Adhesives,”

Orthopaedic Research Society (ORS) 2017 Annual Meeting, March 19-22, 2017, San Diego, CA.

130. A.C. Deymier, Y. An, J.J. Boyle, A.G. Schwartz, V. Birman, G.M. Genin, S. Thomopoulos, A.H. Barber, "The role of Mineral in the Micromechanical Properties of Tendon Enthesis," Orthopaedic Research Society (ORS) 2017 Annual Meeting, March 19-22, 2017, San Diego, CA.

131. Thomopoulos, S., Birman, V., Buehler, M.J., Chasiotis, I., Deymier, A.C., Golman, M., Genin, G.M., "Multi-scale Mechanics of the Tendon-to-Bone Attachment," 2017 Multiscale Modeling Consortium Meeting. March 22-24, 2017, NIH Campus, Washington, DC.

131. Linderman, S.W., Golman, M., Gardner, T.R., Yoon, D., Birman, V., Levine, W.N., Genin, G.M. and Thomopoulos, S., "Adhesive Films for Enhanced Tendon-to-Bone Repair," Summer Biomechanics, Bioengineering and Biotransport Conference, June 21-24, 2017, Tucson, AZ, USA.

132. V. Birman, S. Thomopoulos and G.M. Genin, "Toughening via Noncollageneous Matrix in Bone," IMECE International Mechanical Engineering Congress & Exposition, Tampa Florida, November 3-9, 2017. Paper IMECE2017-72480.

133. S. Linderman, M. Golman, T.R. Gardner, V. Birman, W.N. Levine, G. Genin and S. Thomopoulos, "Adhesive Tendon-to-Bone Repairs," World Congress of Biomechanics, July 8-12, 2018, Dublin, Ireland.

134. V. Birman, "Control of Fracture at the Interface of Dissimilar Materials using Randomly Oriented Inclusions and Fiber Networks," IMECE International Mechanical Engineering Congress & Exposition, November 3-9, 2018, Pittsburgh, Pennsylvania. Paper IMECE2018-88664.

135. M. Golman, B.P. Marshall, I. Kurtaliaj, V. Birman, G. Genin, S. Thomopoulos, "Failure Modes of Mouse Supraspinatus Tendon-to-Bone Attachments," Orthopaedic Research Society, February 2-5, 2019, Austin, Texas.

136. I. Kurtaliaj, D.H. Yoon, L. Smith, E. Hoppe, V. Birman, G. Genin, S. Thomopoulos, "Python-Inspired Grasping Teeth for Tendon-to-Bone Repair," Orthopaedic Research Society, February 2-5, 2019, Austin, Texas.

137. Kurtaliaj, I., Hoppe, E., Yoon, D.H., Smith, L., Birman, V., Genin, G. and Thomopoulos, S., "Python-Inspired Grasping Teeth for Tendon-to-Bone Repair," $SB^3C$, Summer Biomechanics, Bioengineering and Biotransport Conference, June 25-28, 2019, Seven Springs, Pennsylvania.

138. Golman, M., Abraham, A.C., Kurtaliaj, I., Marshall, B.P., Genin, G.M., Birman, V. and Thomopoulos, S., "Failure Mechanisms in the Tendon Enthesis under Quasistatic Cyclical, and Pathological Loading," $SB^3C$, Summer Biomechanics, Bioengineering and Biotransport Conference, June 25-28, 2019, Seven Springs, Pennsylvania.

139. Kurtaliaj, I., Hoppe, E., Tedesco, L., Yoon, E., Smith, L., Kovacevic, D., Birman, V., Genin, G. and Thomopoulos, S., "Python-tooth-inspired Device to Enhance Tendon-to-bone Repair," 2020 Annual Meeting of the Orthopedic Research Society, February 8-11, 2020, Phoenix, AZ (accepted).

140. Golman, M., Abraham, A.A., Kurtaliaj, I., Marshall, B.P., Hu, Y., Guo, X.E., Genin, G., Birman, V. and Thomopoulos, S., "Toughening Mechanisms In Healthy And Pathologic Tendon Entheses," 2020 Annual Meeting of the Orthopedic Research Society, February 8-11, 2020, Phoenix, AZ (accepted).

141. Hoppe, E., Kurtaliaj, I., Birman, V., Luzzi, A., Thomopoulos, S. and Genin, G., "A Hitchhiker's Guide to Orthopedic Repairs: The Mechanism of How *Harpogonella Palmeru* Fruit Hitches onto Fabric, with Application to suture Spacing," $SB^3C2020$, Summer Biomechanics, Bioengineering and Biotransport Conference, June 17-20, 2020, Vail, Colorado.

142. Kurtaliaj, I., Hoppe, E., Tedesco, L., Yoon, D.H., Smith, L., Kovacevic, D., Birman, V., Genin, G., Thomopoulos, S., "Python-Teeth-Inspired Device to Enhance Tendon-to-Bone Repair," $SB^3C2020$, Summer Biomechanics, Bioengineering and Biotransport Conference, June 17-20, 2020, Vail, Colorado.

143. Golman, M., Birman, V., Thomopoulos, S. and Genin, G., "Posture-Dependent Recruitment of Collagen Fibers Determines Rotator Cuff Toughness," $SB^3C2020$, Summer Biomechanics, Bioengineering and Biotransport Conference, June 17-20, 2020, Vail, Colorado.

144. Golman, M., Birman, V., Thomopoulos, S. and Genin, G.M., "Position-Dependent Recruitment of Collagen Fibers Determines Tendon Enthesis Toughness," ORS 2021, Orthopaedic Research Society, Annual Meeting, February 12-16, 2021, Long Beach, California.

145. Golman, M., Birman, V., Thomopoulos, S. and Genin, G., "Tendon Enthesis Toughness Relies on Position-Dependent Fiber Recruitment and Bony Attachment Geometry," $SB^3C$ 2021, Summer Biomechanics, Bioengineering and Biotransport Conference, June 14-18, 2021. Virtual Conference.

## III-9. SEMINARS AND LECTURES AT UNIVERSITIES AND GOVERNMENT LABORATORIES

1. "Recent Developments in Analytical Studies of Composite Structures", University of Missouri-Rolla, January 23, 1991.

2. The same seminar (#1) was given at Washington University, March 4, 1991.

3. "Thermoelastic Problems of Composite Shells and Plates", University of Virginia (Applied/Solid/Structural Mechanics Seminar Series), December 6, 1991.

4. "Active Control of Smart Structures", NASA Lewis Research Center, July 21, 1992.

5. The same seminar (#4) was given at the University of Missouri-Rolla, September 8, 1992.

6. A version of the same seminar (#4) was presented at the University of Natal (Durban, South Africa), January 6, 1993.

7. "Introduction to Crack Arrester Layers Technique", Texas A & M University, October 27, 1992.

8. "Problems of Adhesive Fracture in Solid Rocket Motors," Air Force Institute of Technology, May 21, 1993.

9. "Delaminated Beams with Piezoelectric Sensors and Actuators", NASA Lewis Research Center, August 26, 1993.

10. "Using Smart Stiffeners for Active Control of Composite Structures", Saint Louis University (Parks College), Sept. 19, 1993.

11. The same seminar was given at Washington University, October, 28, 1993.

12. "Optimization of Active Control of Composite Panels Using Piezoelectric Actuators", The Catholic University of America, December 17, 1993.

13. "Detection of Delaminations in Composite Structures Using Piezoelectric Sensors", Grumman Corporation, January 28, 1994.

14. "Micromechanics for Composite Materials with Shape Memory Alloy Fibers", NASA Lewis Research Center, July 1994.

15. "Properties of Shape Memory Alloy Composites", University of Missouri-Rolla, November 17, 1994.

16. The same seminar was given at St. Louis University (Parks College), February 3, 1995.

17. "Review of Selected Problems in Smart and Functionally Graded Materials and Structures", The Catholic University of America, July 14, 1995.

18. "Direct Energy Weapons", Joint Seminar of the ASME Aerospace Division Committee on Aerospace Structures and Materials and AFOSR, Baltimore, June 11, 1996.

19. "Selected Topics of Mechanics of Smart Structures", University of Cincinnati, October 25, 1996.

20. "Mechanics of Smart Structures", Wright-Patterson Air Force Base, Dayton, Ohio, July 8, 1997.

21. "Mechanics of Ceramic Matrix Composites", Wright-Patterson Air Force Base, Dayton, Ohio, July 18, 1997.

22. "Selected Issues of Smart Materials and Structures", University of Maryland Baltimore County, March 6, 1998.

23. The same lecture was given at the University of Washington, March 17, 1998.

24. "Smart Materials - Potentials, Theory, and Applications", Eglin Air Force Base, March 26, 1998.

25. “Selected Issues of Smart Materials and Structures,” University of Oklahoma (The Perkinson Seminar series), April 17, 1998.

26. “AFOSR New World Vistas,” The 2000 Air Force Office of Scientific Research Contractors Meeting, Columbus, Ohio October 14, 2000.

27. “Selected Issues of Theory and Design of Sandwich Panels,” Washington University, St. Louis, Missouri, March 29, 2001.

28. The same lecture was presented at the University of Arizona, Tucson, Arizona, May 17, 2001.

29. “Design Methodology for Cocured Z-Pinned Ceramic Matrix Composite Joints,” University of Missouri-Rolla, November 14, 2002.

30. “Wrinkling in Sandwich Composite Panels Subject to Static, Dynamic and Thermal Loads,” Georgia Institute of Technology, Atlanta, Georgia, February 20, 2003.

31. The same lecture was presented at the Utah State University, Logan, Utah, April 18, 2003.

32. "Wrinkling in Sandwich Composite Structures Subject to Multiaxial, Dynamic and Thermal Loads," Michigan Technological University, Houghton, Michigan, April 22, 2004.

33. "Prediction of the Structural Response of Functionally Graded Materials & Structures," Wright-Patterson Air Force Base, Ohio, August 2005.

34. "Mechanics and Analysis of Functionally Graded Materials and Structures," Wright-Patterson Air Force Base, Ohio, May 2006.

35. "Challenge and Promise of Functionally Graded Materials," University of Missouri-Rolla, Rolla, Missouri, September 2007.

36. The lecture with the same title was presented at the US Army Aviation Applied Technology Directorate, Fort Eustis, Virginia, October 2007.

37. The lecture with the same title was presented at the University of Michigan, October 2007.

38. "Innovative Material Systems in Nature and Engineering," Missouri University of Science and Technology, Systems Engineering Seminar, April 16th, 2008.

39. "Micromechanics of Fiber-Reinforced Particulate Medium with Applications to Shape Memory Alloy Composites and Tendon-to-Bone Insertion Site," University of Iowa, November 13th, 2008.

40. "Shape Memory Alloy Components for Dynamic Load Mitigation," Rutgers University, September 29, 2010.

41. "Multiscale Mechanics of Tendon-to-Bone Insertion Site," Distinguished Lecture Series, Florida Atlantic University, Boca Raton, November 6, 2015.

42. "Multiscale Functionally Graded Tendon-to-Bone Insertion – Mechanistic View," Saint Louis University, November 1, 2016.

## III-10. ADMINISTRATIVE REVENUE-GENERATING ACTIVITIES, RESEARCH CONTRACTS AND GRANTS

### Administrative Activities

The following lists the revenue and profits generated at the Missouri S&T - Global (formerly, Engineering Education Center or EEC) where Dr. Birman (the only full-time faculty) served as Director responsible for ten graduate programs taught by 25 adjunct faculty until his retirement in 2019. The responsibilities of Dr. Birman include recruitment of new students and faculty, coordinating and scheduling courses with respective departments on the main campus and

administration of all activities of the center. Dr. Birman developed and implemented the strategic direction of the center concentrating on delivery of distance courses serving students at the Global - St. Louis, on the Rolla campus and worldwide. The following revenue data generated at the Global – St. Louis (EEC) is listed for the period 2011 – 2017 (available data).

2017 academic year: Revenue: $1.95M

2015-16 academic year: Revenue $2.01M

2014-15 academic year: Revenue $1.93M

2013-14 academic year: Revenue $2.07M

2012-13 academic year: Revenue $1.91M

2011-12 academic year: Revenue $2.01M

**Research Contracts and Grants**

1. "NUTC/Functionally Graded Biomimetic Energy Absorption Concept Development for Transportation Systems," Principal Investigator, Department of Transportation, $23,203, 05/01/2013-12/31/2013.

2. J.S. Volz (50%), K. Chandrashekhara (25%) and V. Birman (25%), "Polyurethane Foam Infills for Fiber-Reinforced Polymer (FRP) Bridge Deck Panels," Missouri Department of Transportation $120,000; 12/19/2011-06/01/2013. Matching funds: NUTC – Center for Transportation Infrastructure and Safety (CTIS), $60,000.

2a. J.S. Volz (45%), K. Chandrashekhara (20%) and V. Birman (20%); W. Schonberg (15%), "Polyurethane Foam Infills for Fiber-Reinforced Polymer (FRP) Bridge Deck Panels," NUTC – Center for Transportation Infrastructure and Safety (CTIS), $80,000, 12/01/2012-06/28/2013.

3. Workshop on Revolutionary Fundamental Research in Support of Energy Harvesting, Principal Investigator, $34,671, Army Research Office, 2010-11.

4. Workshop on Intelligent and Adaptive Systems for Dynamic Load Mitigation, Principal Investigator, $24,067, Army Research Office, 2009-10.

5. "Structures with Superelastic Shape Memory Alloy Stiffeners for Maximum Damping and Energy Dissipation," Principal Investigator, $29,278, Army Research Office, 2009-2010.

6. "Shape Memory Particulate Composites for Vibration Control," Principal Investigator, $29,529, Army Research Office, 2008-2009.

7. “Spatially Tailored and Functionally Graded Light-Weight Structures for Optimum Mechanical Performance,” Principal Investigator, $29,125, Army Research Office, 2007-2008.

8. “Functionally Graded Shape Memory Alloy Composites Optimized for Passive Vibration Control,” Principal Investigator, Army Research Office, $25,000, 2006-2007.

9. “Physically Nonlinear Behavior of Piezoelectric Actuators Subject to High Electric Fields,” Principal Investigator, $29,500, Army Research Office, 2004.

10. “Novel Steel Reinforced Polymer” (Co-PI, shared credit: P. Silva 40%, V. Birman 20%, L.R. Dharani 20%, A. Nanni 20%). $155,628, National Science Foundation, 2003-2005.

11. “Theory of Naval Sandwich Structures with Multiple Facings,” Principal Investigator, $105,000, Office of Naval Research, 2000-2003.

12. “Structural Monitoring of Aircraft” (Co-PI, shared credit: V. Rao 25%, H. Pottinger 15%, W. Schonberg 10%, A. Okafor 20%, K. Chandrashekhara 15%, V. Birman 15%), $641,600, Universal Technology Corporation, 2000-2001.

13. “Thermomechanical Problems of Composite Aerospace Shell Structures”, Principal Investigator, $112,836, Air Force Office of Scientific Research (subcontract from the University of Cincinnati: multi-university research), 1997-2001.

14. "Impact Damage Detection and Control in Composite Structures Using Multisensing, Actuation, and Neural Network Systems" (Co-Pi, Shared credit: K. Chandrashekhara 25%, A.C. Okafor 25%, V. Birman 25% and S.E. Watkins 25%). Office of Naval Research (ONR)/Manufacturing Research and Training Center (MRTC), $483,524, 1994-97.

15. "Optimization of Functionally Graded Shape Memory Alloy Composites in Buckling Problems", Principal Investigator, $19,425, Army Research Office, 1995.

16. "Low-Velocity Impact of Sandwich Plates", Principal Investigator, $18,000, Air Force Institute of Technology, Wright-Patterson Air Force Base, 1995-96.

17. "Equipment for Research and Instruction" (Co-Pi, Shared credit: J.H. Hahn 25%, D.C. St Clair 25%, V. Birman 25% and C. Sabharwal 25%), $15,000, Sun Corporate Education Group, 1994.

18. "Control of Sandwich and Composite Plates Using Piezoelectric Stiffeners", Principal Investigator, $18,720, Army Research Office, 1992.

19. "Study and Redesign of Medical Waste Incinerator", Principal Investigator, $3,500, Deaconess Health Services Corporation, 1991.

20. "Structural Design and Analysis of a 50,000 HP POD Propulsion Unit", Principal Investigator, $20,495, Decision Engineering, 1990.

    In this contract, Decision Engineering was an intermediate link. The research was performed for the US Navy.

In addition to the above contracts and grants, a number of grants were obtained for a specific purpose of performing research at various laboratories:

21/22. U.S. Air Force Summer Faculty Research Program Fellowship, (Visiting Scientist at the Wright-Patterson Air Force Base), $20,000 per visit, 1992 and 1997.

23. Federation for Research and Development (South Africa). Support for travel to conduct joint research in smart composites at the University of Natal (Durban, South Africa), $7,000, December 1992 - January 1993.

24. "Integrity of Solid Rocket Motors", Edwards Air Force Base (served as a consultant to the Air Force Institute of Technology for this contract; PI: Prof. A. Palazotto), $15,000, 1993.

25. NASA/ASEE Summer Faculty Fellowship Program (Visiting Scientist at the NASA Lewis Research Center), $20,000, summer 1993.

26. NASA/ASEE Summer Faculty Fellowship Program (Visiting Scientist at the NASA Lewis Research Center), $20,000, summer 1994.

In addition, two development grants were received from the School of Engineering / Department of Mechanical and Aerospace Engineering and Engineering Mechanics during 1989-91.

The following contracts were obtained when Dr. Birman worked at the University of New Orleans

27. "Draft Assisted Delivery", (Co-Pi, Shared credit: F.C. Munchmeyer 50%, V. Birman 50%), $150,000, Centurion Seaport Systems, Inc., 1987-88.

28. "A Computing System for Teaching, Research and Economic Development", (Co-Pi, Equally shared credit with A.A. Mahmoud, A. Hannoura, R. Azzam, E. Russo and F.C. Munchmeyer), $358,000, Louisiana Education Quality Support Fund, (credit of V. Birman: 10%), 1987-88.

29. University of New Orleans Research Council Grant, "Nonlinear Vibrations of Systems Subject to Different Initial Conditions", Principal Investigator, $15,000, 1986.

30. University of New Orleans Research Council Grant "Application of Initial Imperfection Concept to Ship Design", Principal Investigator, $12,000, 1985.

## IV. TEACHING ACTIVITIES

### IV-1. Missouri University of Science and Technology (Formerly University of Missouri-Rolla) 1989-present

All courses since 2001 have been taught via the Internet being available to students at the Engineering Education Center (St. Louis), Rolla campus and worldwide. The latter group of students included US military personnel in Iraq, Afghanistan, Germany, South Korea as well as students in Italy and Abu Dhabi. Internet (distance) courses are underlined in the list below.

***Graduate courses:***

# Vibrations I *This course was developed and taught in 2005*

# Advanced Vibrations

# Introduction to Continuum Mechanics

# Introduction to Solid Mechanics

# Analysis of Laminated Composite Structures *This course was developed and taught since 2002*

# Stability of Engineering Structures *This course was developed and taught since 2001*

# Theory of Shells *This course was developed and taught in 2004*

# Thermal Stresses I

# Finite Element Approximation I - An Introduction

# Theory of Plates *This course was developed and taught since 2002*

# Fatigue Analysis

# Fracture Mechanics

# Advanced Mechanics of Materials *This course was developed and taught since 2008*

***Undergraduate courses:***

# Linear Systems in Mechanical Engineering

# Machine Dynamics

***Other teaching and relevant activities:***

1. Supervisor of numerous PhD and MS students at Missouri S&T and at the University of New Orleans (complete list available upon request).

2. Advisor to all students in Mechanical Engineering, Aerospace Engineering, and Engineering Mechanics at the MST Engineering Education Center at St. Louis (1992-2019).

3. Teaching EIT and PE courses in 1990-2001.

**IV-2. Rutgers University 2020**

# Analysis and Design of Aerospace Composite Structures *(graduate course: developed and taught in the summer 2020)*

**IV-3. University of New Orleans 1984-1988**

# Theory of Vibration

# Ship and Offshore Structures

# Mechanics of Materials

# Dynamics of Ship and Offshore Structures

# Ship and Offshore Structures 2 (Actually Plasticity and Fracture) (*)

# Special Topics in Naval Architecture (Graduate Course)

# Composite Structures (*) (Graduate Course)

# Advanced Vibrations (*) (Graduate Course)

# Theory of Stability (*)

# Advanced Mechanics of Materials

(*) Courses introduced by V. Birman into curriculum

Dr. Birman was responsible for a development and teaching of structural courses at the School of Naval Architecture and Marine Engineering at the University of New Orleans.

**IV-3. Technion – Israel Institute of Technology (Graduate Teaching Assistant / Instructor in undergraduate courses) 1979-1983**

# Theory of Vibration

# Stability of Structures

# Probabilistic Methods in the Theory of Structures

# Aeronautical Laboratories (Three different courses)

**V. SERVICE AND OUTREACH ACTIVITIES**

**V-1. Membership and Service on Committees of Professional Societies**

American Society of Mechanical Engineers (ASME)

Member since 1985; Fellow since 1996, Life Fellow since 2020.

Chair of the ASME Aerospace Division Structures and Materials Technical Committee 2007-09.

Vice Chair of the ASME Aerospace Division Structures and Materials Technical Committee 2005-07

ASME Congress Steering Committee – Member 2013-2018

ASME Aerospace Division Executive Committee 2015-present

ASME Aerospace Division Honors and Awards Committee 2017-present

ASME Aerospace Division Structures and Materials Technical Committee - Member 1990-present

ASME: Aerospace Structures and Materials TC representative at the Executive Committee of the ASME Aerospace Division 2015-present

ASME Applied Mechanics Division Composite Materials Technical Committee - Member 1991-present

ASME Pressure Vessels and Piping Division Design and Analysis Committee - Member 1991-2005.

American Institute of Aeronautics and Astronautics (AIAA) 1989-2019

Member since 1989, Associate Fellow since 1991.

American Society of Civil Engineers (ASCE) (1995-1996)

Member of the Control Group of the Committee for Advance Composites (Aerospace Division) 1995-1996.

International Community for Composites Engineering (ICCE), 1994.

American Society for Composites (2002)

Society of Naval Architects and Marine Engineers (1984-89).

**V-2. Service on Organizing Boards of International and National Conferences**

2017 Member of Editorial and Advisory Board, ICCE-25 Twenty-Fifth Annual International Conference on Composites/Nano Engineering, Rome, Italy, July 16-22, 2017.

2016 Member of Editorial and Advisory Board, ICCE-24 (International Conference on Composite Materials), Hainan Island, China, July 17-23, 2016.

2015 Member of the Scientific Committee of the International Conference on Shells, Plates and Beams, University of Bologna, Bologna (Italy) September 16-18, 2015.

2015 Member of the Scientific Committee, 10$^{th}$ International Conference on Composite Science and Technology, Lisbon, Portugal, September 2-5, 2015.

2014 Member of the Editorial and Advisory Board, 22nd International Conference on Composites/Nano Engineering (ICCE-22), Malta, July 13-19, 2014.

2014 Member of the Scientific Committee, Mechanics of Composites (MECHCOMP2014), Stony Brook University, Long Island, New York, 8-12 June 2014.

2013 Member of the Advisory Board of ICCE-21: The Twenty First Annual Conference on Composites and Nanoengineering, Tenerife, Spain, July 21-27, 2013.

2012 Member of the Advisory Board of ICCE-20: The Twentieth International Conference on Composites/Nano or Metal Engineering, Beijing, China, July 22-28, 2011.

2011 Member of the Advisory Board of ICCE-19: The Nineteenth International Conference on Composites/Nano Engineering, Shanghai, China, July 24-30, 2011.

2010 Member of the Editorial Board of ICCE-18: The Eighteenth International Conference on Composites/Nano Engineering, Anchorage, Alaska July 4-10, 2010.

2009 Member of the Editorial Board of ICCE-17: The Seventeenth International Conference on Composites/Nano Engineering, Hawaii, July 26-August 1, 2009.

2008 Member of the Editorial Board of ICCE-16: The Sixteenth International conference on Composites/Nano Engineering, Kunming, China, July 20-26, 2008.

2007 Member of the International Advisory Board. The Sixth International Conference on Composite Science and Technology, Durban, South Africa, January 2007.

2007 Member of the Editorial Board of ICCE-15: The Fifteenth International Conference on Composites/Nano Engineering, Hong Kong, July 15-21, 2007.

2007 Member of the International Scientific Committee, Comp-07: 6$^{th}$ International Symposium on Advanced Composite Technologies, Corfu, Greece, May 16-18, 2007.

2006 Member of the Editorial Advisory Board for the 14$^{th}$ International Conference on Composites/Nano Engineering (ICCE/14), July 2006, Boulder, Colorado.

2005 Member of the Editorial Advisory Board for the 12$^{th}$ International Conference on Composites Engineering (ICCE/12), Canary Islands, Spain.

2004 Member of the Editorial Advisory Board for the 11$^{th}$ International Conference on Composites Engineering (ICCE/11), July 2004, Hilton Head, North Carolina.

2004 Member of the International Scientific Committee of ICOVP-2005 (The Seventh International Conference on Vibration Problems), September 5-9, 2005, Isik University, Istanbul, Turkey.

2003 Member of the Editorial Advisory Board for the 10th International Conference on Composites Engineering (ICCE/10), July 2003, New Orleans.

2002 Member of the International Advisory Board for the Fourth International Conference on Composite Science and Technology, January 21-23, 2003, Durban, South Africa.

2002 Member of the Editorial Advisory Board for the 9th International Conference on Composites Engineering (ICCE/9), July 1-6, 2002, San Diego.

2001 Member of the Editorial Advisory Board for the 8th International Conference on Composites Engineering (ICCE/8), August 5-11, 2001.

1999 Member of the International Advisory Board of the Third International Conference on Composite Science and Technology, 11-13 January, 2000, Durban, South Africa.

1998 Member of the International Advisory Board of Sixth International Conference on Composites Engineering, July 1999, Orlando, Florida.

1997 Member of the International Advisory Board of the Second International Conference on Composite Science and Technology, 9-11 June 1998, Durban, South Africa.

1997 Member of the International Advisory Board of the Fifth International Conference on Composites Engineering, 5-11 July 1998, Las Vegas, Nevada.

1997 Member of the International Advisory Board of the Fourth International Conference on Composites Engineering (ICCE/4), Hawaii, July 6-11, 1997.

1995 Member of the International Advisory Board of the First International Conference on Composite Science and Technology (ICCST/1, 18-20 June, 1996, Durban, South Africa).

1995 Member of the International Advisory Board of the Second International Conference on Composites Engineering (ICCE/2, August 20-23, 1995, New Orleans, Louisiana).

1994 Member of the Organizational and Advisory Committee. The First International Conference on Composites Engineering (ICCE/1, August 28-31, 1994, New Orleans, Louisiana).

**V-3. Editorship of Professional Journals**

1. Associate Editor of the journal "Composites Engineering". The journal renamed in 1996: “Composites Part 2: Engineering”

2. Member of the Editorial Board of the “Journal of Thermal Stresses” (2013-present).

3. Member of the Editorial Board of the “Journal of Sandwich Structures and Materials” (2014-present)

4. Associate Editor of “Applied Mechanics Reviews” (2000-2011).

5. Associate Editor of the journal “Composites Theory and Practice” published by the Polish Society for Composite Materials (2009-present).

6. Associate Editor - Member of the Editorial Board, International Journal of Aeronautical and Space Sciences (IJASS). Published by the Korean Society for Aeronautical and Space Sciences (2011-2019).

7. Guest Co-Editor of the special issue of the International Journal of Solids and Structures dedicated to the memory of Professor Liviu Librescu (Vol. 46, No. 10, 2009).

8. Guest Co-Editor of the special issue of Journal of Mechanics of Materials and Structures dedicated to Professor George J. Simitses (Vol. 4, Nos. 7-8, 2009).

**V-4. Chairman/Organizer of Symposia and Sessions**

1. Organizer and Chairman of the session "Recent Developments in Composite Structures" at the XV-th Southeastern Conference on Theoretical and Applied Mechanics (Atlanta, Georgia, March 1990).

2. Organizer of three sessions ("Thermally Induced Buckling and Vibrations", "Thermal Stresses in Composites", "Environmental Effects on Behavior of Materials" at the 1990 ASME Winter Annual Meeting, Dallas, TX, November 1990). Chairman of one of the sessions.

3. Organizer of two sessions ("Topics in Mechanics of Composite Materials", "Mechanics of Thin-Walled Structures") at the 1992 ASME Summer Mechanics and Materials Conference, Tempe, Arizona, April 1992. Chairman of one of the sessions.

4. Organizer of the Symposium on Composite Materials and Structures at the 1993 ASME Winter Annual Meeting (4 sessions).

5. Chairman of the sessions "Recent Developments in Electromechanics: Piezoelectric Composites" and "Static and Dynamic Analysis of Layered Plate and Shell Structures" at the ASCE 10-th Engineering Mechanics Conference, Boulder, Colorado, May 1995.

6. Technical Program Chairman for Aerospace Materials and Structures at the 1995 ASME Winter Annual Meeting (4 symposia).

7. Chairman of the Symposium on Composite Structures at the Second International Conference on Composites Engineering (ICCE/2), New Orleans, Louisiana, August 20-24, 1995.

8. Chairman of the sessions "Smart Composites: Applications II", "Composite Structures I, II, and III" at the Second International Conference on Composites Engineering (ICCE/2), New Orleans, Louisiana, August 20-24, 1995.

9. Session Chairman for the Symposium on Intelligent Structures and Vibrations at the ASME 15-th Biennial Conference on Mechanical Vibration and Noise (Boston, MA, September 18-21, 1995).

10. Co-organizer of the Symposium "Thermomechanical Problems of Composite Structures, at the 1997 ASME International Mechanical Engineering Congress, Dallas, Texas, November 1997.

11. Chairman of the sessions Aero-14B and Aero-18B (Thermomechanical Aspects of Mechanics of Composite and Smart Structures) at the 1997 ASME International Mechanical Engineering Congress, Dallas, Texas, November 1997.

12. Chairman of the sessions "Fracture, and Composites I", at the Canadian Society for Mechanical Engineering Forum 98, Ryerson Polytechnic University, Toronto, Canada, May 19-22, 1998.

13. Chairman of the session "Shape Memory Alloys II" at the SPIE's 6$^{th}$ Annual International Symposium on Smart Structures and Materials, Newport Beach, California, March 4, 1999.

14. Co-organizer of the Symposium Honoring Professors Charles W. Bert and Jack Vinson at the 1999 ASME International Mechanical Engineering Congress, Nashville, Tennessee, November 1999.

15. Chair of two sessions at the 1999 ASME International Mechanical Engineering Congress and Exposition (these sessions were a part of the symposium honoring Professors C.W. Bert and J.R. Vinson), Nashville, Tennessee, November 1999.

16. Co-chair of the session "Experimental Mechanics II" at the Seventh International Conference on Composites Engineering, Denver, Colorado, July 4, 2000.

17. Co-organizer of the Symposium "Mechanics of Sandwich Structures" at the 2000 ASME International Mechanical Engineering Congress, Orlando, Florida, November 2000.

18. Chair of the session "Mechanics of Sandwich Structures VI" at the 2000 ASME International Mechanical Engineering Congress, Orlando, Florida, November 2000.

19. Co-chair of the Symposium Honoring Professor George J. Simitses, at the 2001 ASME International Mechanical Engineering Congress, New York, New York, November 2001.

20. Co-chair of the session AERO-4 (Symposium Honoring Professor Simitses) at the 2001 ASME International Mechanical Engineering Congress, New York, New York, November 11, 2001.

21. Co-chair of the session AM-17B, "Micromechanical Instabilities and Failure in Composites," (Symposium Honoring Professor Simitses) at the 2001 ASME International Mechanical Engineering Congress, New York, New York, November 14, 2001.

22. Chaired the session MMC/CMC-1 at the 10th International Congress on Fracture, Honolulu, Hawaii, December 4, 2001.

23. Chaired the session Math I at the Ninth International Conference on Composites Engineering (ICCE/9), San Diego, California, July 1, 2002.

24. Chaired the session Structural Mechanics VIII at the Symposium Honoring Prof. Arthur W. Leissa at the 14th US National Congress on Theoretical and Applied Mechanics, Blacksburg (Virginia Tech), Virginia, June 28, 2002.

25. Co-organizer of the Symposium "Behavior of Ceramic Matrix Composites under Thermal and Mechanical Loads" at the 2002 ASME International Mechanical Engineering Congress, New Orleans, Louisiana, November 21, 2002.

26. Co-chair of sessions AMD-6A "Behavior of Ceramic Matrix Composites under Thermal and Mechanical Loads," AMD-8A "Mechanics of Composite Faced Sandwich Structures I," and AMD-14B "Instabilities in Solids and Structures" at the 2002 ASME International Mechanical Engineering Congress, New Orleans, Louisiana, November 21 and 22, 2002.

27. Chaired the session "Mechanics 8" at the Sixth International Conference on Sandwich Structures, Ft. Lauderdale, FL, April 2, 2003.

28. Co-organizer of the Symposium on Sandwich Structures (sessions AMD-7B, "Sandwich Composites I", and AMD-8A, "Sandwich Composites" at the 2004 International Mechanical Engineering Congress, IMECE-2004, Anaheim, California, November 16 and 17, 2004.

29. Co-chaired the session AERO-12B "Topics in Aerospace Structural Analysis" at the 2004 International Mechanical Engineering Congress, IMECE-2004, Anaheim, California, November 17, 2004.

30. Co-organizer of the symposium "UAV Technology" at the 2005 International Mechanical Engineering Congress, IMECE 2005, Orlando, Florida, November 2005.

31. Co-chaired the following sessions at the 2005 International Mechanical Engineering Congress, IMECE 2005, Orlando, Florida, November 2005:

a. AMD-6E: Instabilities in Composite and Cellular Materials;
b. TRSPT-6: UAV Technology I;
c. TRSPT-7: UAV Technology II;
d. TRSPT-8: UAV Technology III;
e. AERO-14: Piezoelectric Materials/Applications

32. Co-chair of Session 13: "Functionally Tailored Structures for Extreme Thermo-Acoustic Environments," FGM 2006: Multiscale & Functionally Graded Materials Conference, October 2006, Oahu, Hawaii.

33. Co-organizer of the symposium "Spatially Tailored and Functionally Graded Materials and Structures for Extreme Thermal Environments," at the 2007 International Mechanical Engineering Congress, IMECE 2007, Seattle, Washington, November 2007.

34. Member of the International Scientific Committee: 6th International Symposium on Advanced Composites "Composites and Application for the New Millennium", Corfu, Greece, May 2007.

35. Chairman of the session "Multifunctional Nanocomposites" (session 5), The 6th International Symposium on Advanced Composites, Corfu, Greece, May 17, 2007.

36. Co-chair of Session 15-3-3: "Instability in Solids and Structures," at McMAT 2007: Applied Mechanics and Materials Conference (ASME), University of Texas at Austin, Austin, Texas, June 3-7, 2007.

37. Chair of the session 8.3.4: "Mechanics of Nano-, Bio- and Cellular Materials IV" at McMAT 2007: ASME Applied Mechanics and Materials Conference, University of Texas at Austin, Austin, Texas, June 3-7, 2007.

38. Co-chair of Sessions 1-3-7 and 1-3-8: "Spatially Tailored and Functionally Graded Materials and Structures for Extreme Environments" (I and II). The 2007 International Mechanical Engineering Congress, IMECE 2007, Seattle, Washington, November 14th, 2007.

39. Co-chair of Session 1-3-1 Symposium in the Honor and Memory of Professor Liviu Librescu. The 2008 International Mechanical Engineering Congress and Exposition, IMECE 2008. Boston, Massachusetts, November 4, 2008.

40. Chair of two sessions at the International Mechanical Engineering Congress and Exposition (November 13-19, 2009, Lake Buena Vista, Florida): Session 11-6-3: System Stability I Symposium in Honor of Professor Isaac Elishakoff; Session 1-6-1: Symposium In Honor of Professor Izhak Sheinman – II.

41. Co-organizer of Workshop on Intelligent and Adaptive Protective Systems for Dynamic Load Mitigation, Aberdeen, Maryland, May 27-28, 2010.

42. Co-organizer of Workshop on Revolutionary Fundamental Research in Support of Energy Harvesting, April 7th, 2011, Austin, Texas.

43. Co-organizer of the session Sandwich Structures, Stability and Identification – II. The 2011 International Mechanical Engineering Congress and Exposition, November 11-17, Denver, Colorado.

44. Chairman of Technical Session: Sandwich Structures, Stability and Identification – II at the ASME 2011 International Mechanical Engineering Congress & Exposition, Colorado Convention Center, Denver, CO, November 15th, 2011.

45. Chairman, Session "Multiscale Modelling (2), Advanced Materials Modelling for Structures, International Union of Theoretical and Applied Mechanics, Paris, France, April 23, 2012.

43. Chairman of the session "Multi-functional Smart Composites III", The 19th International Conference on Composite Materials (ICCM-19), Montreal, Canada, July 30th, 2013.

44. The 20th International Conference on Composite Materials (ICCM20), Co-organizer of Track 5-10: Applications - Bio & Medical. Copenhagen, Denmark, July 19-24th, 2015.

45. Chairman of the session: Applications – Bio and Medical 2, 20th International Conference on Composite Materials (ICCM20). Copenhagen, Denmark, July 23th, 2015.

46. Co-Chair of Session: Multifunctional and Micro/Nano-Structured Materials (II), IMECE 2015 (International Mechanical Engineering Congress and Exposition), Houston, Texas, November 16, 2015.

47. Chair of Session: Instability of Solids, Structures and Fluids (session 12.7). ASME International Mechanical Engineering Congress and Exposition (IMECE 2016), Phoenix, AZ, November 14, 2016.

**V-5. Review of Papers and Proposals**

# ASME Journal of Applied Mechanics

# ASME Journal of Electronic Packaging

# ASME Journal of Engineering Materials and Technology

# ASME Journal of Vibration and Acoustics

# Aerospace

# Aerospace Science and Technology

# Proceedings of the Royal Society. Series A (Mathematical, Physical and

Engineering Sciences)

# Biophysical Journal

# International Journal of Solids and Structures

# International Journal of Mechanical Sciences

# International Journal of Non-Linear Mechanics

# International Journal of Computational Engineering Science

# International Journal of Engineering Science

# Tissue Engineering

# Journal of Engineering Mathematics

# Physical Review Letters

# Journal of Intelligent Material Systems and Structures

# Journal of Sound and Vibration

# Journal of Sandwich Structures and Materials

# Journal of Biomechanical Engineering

# Journal of Physics D: Applied Physics

# Journal of Intelligent Material Systems and Structures

# AIAA Journal

# AIAA Journal of Spacecraft and Rockets

# AIAA Journal of Aircraft

# Composites Engineering

# Shock and Vibration

# Journal of Electrical and Control Engineering (JECE)

# Journal of Materials Science: Materials in Electronics

# Journal of Materials Science

# Structural Engineering and Mechanics

# Journal of Ship Research

# Composites Science and Technology

# Composite Structures

# Optical Engineering

# Journal of Thermoplastic Composite Materials

# Journal of Thermal Stresses

# Composites Part A: Applied Science and Manufacturing

# Composites Part B: Engineering

# Journal of Mechanics of Materials and Structures

# East Asian Journal on Applied Mathematics

# Computational Materials Science

# Smart Materials of Structures

# Finite Elements in Analysis and Design

# Heat Transfer Engineering

# Ocean Engineering

# Numerical Methods for Partial Differential Equations

# Mechanics Based Design of Structures and Machines

# Mechanical Sciences

# ASCE Journal of Engineering Mechanics

# Mechanical Systems and Signal Processing

# Zeitschrift fur Angewandte Mathematik und Mechanik (ZAMM)

# Computer Methods in Applied Mechanics and Engineering

# Computer Methods in Biomechanics and Biomedical Engineering

# Transactions of the Canadian Society of Mechanical Engineers

# Polymer International

# Kuwait Journal of Science and Engineering

# National Science Foundation

# Cambridge University Press (book proposals)

# Springer (book proposals)

# CRC Press/Taylor & Francis (book proposals)

# Prentice Hall (book proposals

# Birkhauser (branch of Academic Press) – book proposals

# Euromechanics (publishing group) – book proposals

# European Research Council

# Various ASME meetings

# 37-th AIAA SDM Conference

# Kentucky EPSCoR NSF Program

# Nevada EPSCoR NSF Program

# Iowa EPSCoR NSF program

# Fulbright US Scholar Program

# IEEE Transactions on Control Systems Technology

# University of Missouri Research Board

# Gulf Coast Region Maritime Technology Center

# South African Federation for Research and Development

# The German-Israeli Foundation for Scientific Research and Development

# Luxemburg National Research Fund (2008-2015)

# Aristeia II: European Union/Greek Government Research Fund (2013)

# International Mechanical Engineering Congress and Exposition (IMECE 2006)

# International Mechanical Engineering Congress and Exposition (IMECE 2014)

# World Scientific Publishing Company

# Complex Adaptive Systems 2016, Publication 6 (Elsevier)

# ASME Aerospace Structures and Materials Committee, Boeing Best Paper Award

**V-6. SERVICE ON GRADUATE and P&T COMMITTEES (External examiner/member)**

**Service on PhD committees at Missouri S&T is not included (about 25 committees over the last ten years)**

External Member of the Ph.D. Examination Board: Andhra University, Visakhapatnam, India. Summer 1992.

External Member of the Ph.D. Examination Board: University of Natal, Durban, South Africa. 1993-94, 1999, 2002.

External Member of the Ph.D. Examination Board: Washington University, St. Louis, Missouri. Served on 4 committees.

External Member of the Ph.D. Examination Board: The University of North Bengal, West Bengal, India. Spring 2004, December 2005.

Member of PhD and MS committees at Mechanical and Aerospace Engineering department and Civil Engineering at Missouri University of Science and Technology (appr. 40 committees since 2000).

External Member of the PhD Examination Board, Georgia Institute of Technology (School of Aerospace Engineering), Atlanta, Georgia, April 2011.

External Member of promotion and tenure committees (2006):

a. Technion-Israel Institute of Technology, Faculty of Civil and Environmental Engineering

b. University of Jordan, Department of Mechanical Engineering

**V-7. SERVICE ON UNIVERSITY AND DEPARTMENT COMMITTEES**

1. Member of the School of Engineering Executive Committee (University of Missouri-Rolla, 2000-2005).

2. Member of the Chancellor Council (Missouri University of Science and Technology, 2000-2012).

3. Member of the Solids Committee of the Department of Mechanical and Aerospace Engineering of Missouri University of Science and Technology (2000-2019). Chair of the Committee in 2005-06, 2007-08.

4. Member of the Curriculum Committee of the Department of Mechanical and Aerospace Engineering of Missouri S&T 2005-06, 2007-08.

5. Member of the Division of Global Learning Directors' Committee (2007-2019).

6. Member of the Award and Nomination Committee of the Department of Mechanical and Aerospace Engineering of Missouri University of Science and Technology, (2011).

7. Member of Ad-Hoc Recruiting Council (University-wide committee, 2018-2019)

**V-8. CONSULTING SERVICES**

2009-present School of Medicine and School of Engineering, Washington University (St. Louis), Analysis of tendon-to-bone insertion site.

2015-2016 Gray, Ritter & Graham, P.C. St. Louis, Missouri. Expert witness.

2005-2007 General Dynamics Information Technology, Dayton, Ohio. Development and analysis of functionally graded composite structures for high-temperature applications.

2005 Air Force Institute of Technology, Dayton, Ohio. Review of damping problems in turbine blades.

2004 Air Force Institute of Technology, Dayton, Ohio. Review of sonic fatigue in aircraft structures.

2003-2005 Georgia Institute of Technology, Atlanta, Georgia. Consultant on the development of the analysis methods for fire-resistant ship structures.

1999-2016 QorTek, Williamsport, Pennsylvania. Analyses of flextensional units for control of fiber optics and spacecraft isolation systems, design of piezoelectric actuator units, control system of small satellites.

Design of shape memory alloy springs for control systems of unmanned air vehicles.

Design of self-destruct electronics using shape memory alloy crushers (2008-10).

Design of piezoelectric energy harvesting systems (2009-2012).

Development of small satellite control systems (2014-2016).

1992-2000 DOTec, St. Louis, Missouri. Design of equipment for Maytag, Inc., thermal analysis of a camera pad for reconnaissance plane (Recon, Inc.), engineering structures certifications, and other projects.

1998-2005 Anteon Corporation, Dayton, Ohio. Development of thermograpic and vibrational nondestructive techniques for ceramic matrix composites, design of z-pinned composite joints, development of functionally graded composite materials.

1997-1998 EMF Industries, Williamsport, Pennsylvania. Analysis and design of actively controlled structural elements of new space systems (contract with Phillips Lab at Kirtland AFB).

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| 1997 | EMF Industries, Williamsport, Pennsylvania. Thermal and dynamic design of electronic package in the hub of helicopters (part of Army/SBIR contract) |
| 1993-96 | Nooter Consulting Services, St. Louis, Missouri. Design of pressure vessels. |
| 1992 | Killark Electric Manufacturing Co., St. Louis, Missouri. Thermal analysis of gaskets. |
| 1989 | Anheuser Busch Company, St. Louis, Missouri. The strength of beer production tanks. |
| 1990-91 | American Society of Mechanical Engineers, Fairfield, New Jersey. Translation of the book "High-Pressure Jetcutting" from Russian into English. |
| 1989 | Schien Body and Equipment Co., Carlinville, Illinois. Truck structure analysis. |
| 1988 | Walk, Haydel & Associates, Inc., New Orleans, LA. Redesign of a barge. |