Amr M. Baz

Minta Martin Professor & Keystone Professor of Mechanical Engineering
University of Maryland
2137 Engineering Building
College Park, MD 20742
Tel: 301-405-5216, Fax: 301-405-8331
e-mail: baz@ umd.edu
URL: www.baz.umd.edu

PERSONAL

Birth date	12 October 1945
Marital Status	Married
Major Field	Mechanical Engineering
Minor Field	Computer Science
Citizenship	USA

DEGREES

B.Sc. 1966	Mech. Eng. Dept, Cairo University, Egypt
M.Sc. 1970	Mech. Eng. Dept., Univ. of Wisconsin, Madison
Ph.D. 1973	Mech. Eng. Dept., Univ. of Wisconsin, Madison

POSITIONS HELD

7/13 - present	Keystone Professor, University of Maryland
7/12 - present	Minta Martin Chair Professor of Engineering, University of Maryland
12/10 - present	Visiting Professor, King Saud University, Riyadh, Saudi Arabia
11/01 – 6/06	Director of Small Smart Systems Center, College of Eng., Univ. of Maryland
7/00 - present	Director of Smart Materials & Structures Research Center, Mech. Eng. Dept., Univ. of Maryland
7/97 - present	Professor, Mech. Eng. Dept., Univ. of Maryland
9/86 - 7/97	Professor, Mech. Eng. Dept., Catholic University
1/83 - 8/86	Associate Professor, Mech. Eng. Dept., Catholic University
7/77 - 2/79	Visiting Professor, Mech. Eng. Dept., Univ. of Wisconsin, Madison
2/75 - 12/82	Asst.- Assoc. Professor, Mech. Eng. Dept., Cairo University, Egypt
7/73 - 2/75	Post Doctorate Fellow, Mech. Eng. Dept., Univ. of Wisconsin, Madison

AWARDS

1961 - 1966	Awards of Academic Excellence, Cairo Univ.
1966	First Class Honor Award, Cairo University.
1969	Henry Villas Award for Top Mech. Eng. student at Univ. of Wisconsin.
1972	James Lincoln Foundation National Design Engineering Award.
1973	University of Wisconsin Engineering EXPO Award for Best Presentation.
1980	Egyptian National Award & First Class Medal for Best Achievements in Science & Arts.
1986	Bruno Dimiani Award for the Graduate Teacher of the Year at the Catholic Univ.
1986	American Men & Women of Science, Vol. I, 16th Ed., page 366
1996	Who's Who of American Inventors
1997	Engineering Alumni Association Outstanding Faculty Research Achievement Award
5/04 - present	Fellow of National Institute of Aerospace (NIA)
2006	Invention of the Year Finalist, "Integrated Sensor Monitoring the Allowable Heat Exposure Time for Firefighters", Office of Technology Commercialization, UMD.
2009	ASME/Adaptive Structures and Material Systems Prize
2009	The Purple Camshaft Award of Pi-Tau-Sigma Teaching Award.
2010	SPIE/Smart Structures and Material Technologies Lifetime Achievement Award
7/12 - present	Minta Martin Chair Professor of Engineering, University of Maryland
7/13 - present	Keystone Professor, University of Maryland
2015	Distinguished Scholar-Teacher Award – University of Maryland
2015	Poole & Kent Teaching Award for Senior Faculty – University of Maryland
2024	Best Paper Award of 2023 of the *ASME* Journal of Vibration and Acoustics
2024	The Purple Camshaft Award of Pi-Tau-Sigma Teaching Award.

MEMBERSHIP IN SOCIETIES

1. **Fellow**	American Society of Mechanical Engineers (1995) Chairman of ASME - Washington, DC Sec. (1990) Member of ASME Edwin Church Medal Award

	Committee (1993-2000)
2. Life Fellow	American Society of Mechanical Engineers (2012)
3. **Assoc. Fellow**	American Institute of Aeronautics & Astronautics
4. Member	Sigma-Xi
5. Member	Phi-Kappa-Phi
6. Member	Tau-Beta-Pi

EDITORIAL BOARDS

1. Adam Hilger Intl. Book Series on Smart Materials and Structures, Published by The Institute of Physics, London.

2. Journal of Vibration and Control, (Editor-in-Chief: Dr. A. Nayfeh, Sage Science Press).

3. Journal of American Institute of Aeronautics & Astronautics (AIAA), (Editor-in-Chief: Dr. Gerald Faeth).

4. Journal of Thin-Walled Structures: (Editor-in-Chief, Dr. Ken Chong).

5. Intl. Journal of Vehicle Noise & Vibration (Editor-in-Chief, Dr. M. Qatu)

6. Intl. Journal of Smart Structures & Systems (Editor-in-Chief, Dr. Choi)

7. Journal of Mechanics of Advanced Materials and Structures (Editor-in-Chief, Dr. JN Reddy)

8. Journal of Noise, Vibration and Active Control (Editor-in-Chief, Dr. Osma Toki)

9. Journal of Acoustics, MDPI AG (Basel, Switzerland).

10. Journal of Vibration, MDPI AG (Basel, Switzerland).

PUBLICATIONS
(* indicates a graduate student, ** indicates undergraduate student)

A. In Refereed Journals

1. Baz, A. and A. Seireg, "Optimum Design & Control of Underwater Gliders", *Journal of Eng. For Industry*, Trans. ASME, Vol.96, pp.304-314, Feb.1974.

2. Seireg, A. and A. Baz, "Optimum Design of an Orientation Control Device for Submersibles", *Journal of Engineering For Industry*, Trans. ASME, pp.145-152, Feb. 1974.

3. Baz, A. and A. Seireg, "Optimum Design of Automatic Depth Control System for Underwater Divers", *Journal of Eng. For Industry*, Trans. ASME, pp.1042-1047, 1976.

4. Baz, A. and A. Seireg, "Automatic Orientation Control Device for Underwater Divers", *Journal of Eng. For Industry,* Trans. ASME, pp. 1272-1276, Nov. 1976.

5. Baz, A., H. Zaki, G. Rabie and A. Barakatt, "A New Class of Spool Valves with Built-In Dampers", *Journal of Fluidics Quarterly*, Vol.11, No. 2, pp.1-24, 1979.

6. Baz, A., S. Khafagy* and S. Mikhail, " Analysis of Pneumatically Driven Double Acting Reciprocating Pumps", *Journal of Fluidics Quarterly*, Vol. 11, No. 2, pp.43-64, 1979.

7. Zaki, H. and A. Baz, "On the Dynamics of Axial Piston Pumps", *Journal of Fluidics Quarterly*, Vol. 11, No. 3, pp.73-87, 1979.

8. Baz, A. , M. Ezz* and S. Bayoumi, "Optimization of Power Absorption from Sea Waves", *Journal of Energy Resources Technology*, Trans. ASME, Vol.101, No.2, pp.145-152, 1979.

9. Baz, A. and N. Zogheb**, "A Comparative Study of The Breathing and Clearing Characteristics of Different Types of Snorkels", *Intl. Journal of Ocean Engineering*, pp.459-475, 1979.

10. Baz, A. and A. Seireg, " Equipment for The Underwater Diver", *Journal of Mechanical Design*, Trans. of ASME, Vol.102, No. 3, pp.663-671, 1980.

11. Baz, A. ,S. Kassem, H. Helal* and S. Mikhail, "Optimum Design of a Servo-Controlled Breathing Regulator For Underwater Divers", *Intl. Journal of Ocean Engineering*, Vol. 11, No. 1, pp.87-110, 1984.

12. Baz, A. and H. Helal*, "Flow Characteristics of Exhalation Valves of Diving Regulators", *Intl. Journal of Ocean Engineering,* Vol. 11, No. 1, pp.111-128, 1984.

13. Baz, A., " Optimum Design of Diving Snorkels", *Journal of Medicine and Science in Sports and Exercise*, Vol. 16, No. 4, pp.415-421, 1984.

14. Baz, A., A. Sabry*, A. Mobarak and S. Morcos, "On the Tracking Error of A Self-Contained Solar Tracking System", *Journal of Solar Energy Engineering*, Trans. ASME, Vol. 106, No. 4, pp.416-422, 1984.

15. Baz, A., "Optimization of the Dynamics of Axial Piston Pumps", *Journal of Fluid Control (Fluidics Quarterly),* Vol. 15, No. 2, pp.64-81, 1984.

16. Baz, A., A. Sabry*, A. Mobarak and S. Morcos, "Analysis and Synthesis of The Dynamics of A Self-Contained Solar Tracking System", *Journal of Fluid Control (Fluidics Quarterly*), Vol.16, No. 2, pp.26-46, 1986.

17. Baz, A., S. Kassem and H. Helal*, "On the Dynamics of Servo-Controlled Regulators for underwater Divers", *Journal of Fluid Control (Fluidics Quarterly),* Vol. 16, No.3, pp.95-117, 1986.

18. Baz, A. and D. Uhler*, "A Compressed Gas-Powered Heating System For Underwater Divers", *Intl. Journal of Ocean Engineering*, Vol. 13, No. 3, pp. 273-290, 1986.

19. Baz, A., T. Readey* and D. Uhler*, "A Self-Heated Second Stage Regulator For Underwater Divers", *Intl. Journal of Ocean Engineering*, Vol. 13, No. 2, pp.184-193, 1986.

20. Baz, A., "Positioning Accuracy of Magnetic Reed Switches", *Journal of Fluid Control (Fluidics Quarterly),* Vol. 16, No. 4, pp. 41-54, 1986.

21. Baz, A., T. Readey* and D. Uhler*, "A Self-Heated First Stage Breathing Regulator for Underwater Divers", *Intl. Journal of Ocean Engineering*, Vol. 13, No. 4, pp.373-386, 1986.

22. Baz, A., R. Johnston* and D. Uhler*, "The Dynamic Characteristics of Vortex Tube-Assisted Hyperbaric Chambers", *Intl. Journal of Ocean Engineering*, Vol. 13, No. 4, pp.387-408, 1986.

23. Baz, A., J. Gilheany and A. Kalvaitis, "Feasibility of Vortex Tube-Assisted Environmental Control of Underwater Research Habitat", *Intl. Journal of Ocean Engineering*, Vol.15, No.1, pp.33-54, l988.

24. Baz, A. and J. Gilheany, "Vortex Tube-Assisted Environmental Control of Hyperbaric Chambers", Trans. ASME, *J. of Energy Resources*, Vol.110, No.4, pp.230-237., Dec. 1988.

25. Baz, A., S. Poh* and P. Studer, "Modified Independent Modal Space Control Method for Active Control of Flexible Systems", *J .of The Institution of Mechanical Engineers*, Part C, Vol.203, pp.103-112, 1988.

26. Baz, A. and S. Poh*, "Performance of an Active Vibration Control System Using Piezo-Electric Actuators" *Journal of Sound & Vibration*, Vol.126, No.2, pp:327-344,1988.

27. Baz, A., J. Gilheany and P. Steimel**, "Active Control of Vibration of Propeller Shafts", *J. of Sound and Vibration*, Vol. 136, No. 3, pp.361-372, Jan. 1990.

28. Baz, A. and S. Poh*, "Experimental Implementation of The Modified Independent Modal Space Control Method" *J. of Sound and Vibration*, Vol. 139, No.1, pp.133-149, April 1990.

29. Baz, A., K. Iman* and J. McCoy, "Active Vibration Control of Flexible Beams Using Shape Memory Actuators", *J. of Sound and Vibration*, Vol.140, No.3, 437-456, 1990.

30. Baz, A. and L. Gumusel*, "Buoyancy and Gravity-Powered Underwater Robots", *Intl. J. of Robotics Research*, Vol.9, No.5, pp. 60-69, October 1990.

31. Baz, A., K. Iman* and J. McCoy, "The Dynamic and Thermal Characteristics of Shape Memory Actuators", *Journal of Intelligent Material Systems and Structures*, Vol.1, No.1, pp.105-133, Jan. 1990.

32. Baz, A. and J. Gilheany, "Modeling The Dynamics of Breathing Circuits For Underwater Divers", *The J. of Fluid Control*, Vol. 19, No.2, pp.58-77, Sept. 1988.

33. Baz, A. and J. Ro*, "Active Control of Flow-Induced Vibrations of a Flexible Cylinder using Direct Velocity Feedback", *Journal of Sound and Vibration*, Vol.146, No.1, pp.33-45, 1990.

34. Poh*, S. and A. Baz, "Active Control of a Flexible Structure Using a Modal Positive Position Feedback Controller", *J. of Intelligent Material Systems & Structures*, Vol.1, No.3, pp.273-288, 1990.

35. Baz, A., "Neural Observer for Dynamic Systems", *Journal of Sound and Vibrations*, Vol. 152, No.2, pp.227-243, 1992.

36. Baz, A., S. Poh* and J. Fedor, "Independent Modal Space Control with Positive Position Feedback", *ASME J. of Controls, Measurements and Dynamics*, Vol. 114, No.1, pp.96-103, March 1992.

37. Baz, A., S. Poh*, and J. Gilheany, "A Multi-Mode Distributed Sensor for Vibrating Beams", *Journal of Sound and Vibration*, Vol. 165, No.3, pp. 481-495, 1992.

38. Baz, A. and J. Ro*, "Thermo-Dynamic Characteristics of NITINOL-Reinforced Composite Beams", *Intl. Journal of Composite Engineering*, Vol. 5-7, pp.527-542, 1992.

39. Baz, A. and M. Kim*, "Active Modal Control of Vortex-Induced Vibrations of a Flexible Cylinder", *Journal of Sound and Vibration*, Vol. 165, No. 1, pp. 69-84, 1993.

40. Baz, A., and T. Chen*, "Torsional Stiffness of NITINOL-Reinforced Composite Drive Shafts", *Intl. Journal of Composite Engineering*, Vol. 3, No. 12, pp.1119-1130, 1993.

41. Baz, A., and J. Ro*, "Optimal Vibration Control of NITINOL-Reinforced Composites", *Intl. Journal of Composite Engineering*, Vol. 4, No. 6, pp. 567-576, 1994.

42. Baz, A. and Ro*, "The Concept and Performance of Active Constrained Layer Damping Treatments", *Sound and Vibration Magazine*, Vol. 28, pp. 18-21, 1994.

43. Baz, A. and J. Ro*, "Performance Characteristics of Active Constrained Layer Damping*", J. of Shock & Vibration,* Vol. 2, pp. 33-42, 1995.

44. Baz, A. and J. Ro*, "Optimum Design and Control of Active Constrained Layer Damping", *ASME J. of Vibration & Acoustics*, Vol.117, pp. 135-144, 1995.

45. Ro*, J. and A. Baz, "Thermal Characteristics of NITINOL-Reinforced Composite Plates", *Intl. Journal of Composite Engineering,* Vol.5, No.1, pp. 61-75, 1995.

46. Ro*, J. and A. Baz, "Static and Buckling Characteristics of NITINOL-Reinforced Composite Plates", *Intl. Journal of Composite Engineering*, Vol. 5, No.1, pp. 77-90, 1995.

47. Ro*, J. and A. Baz, "Dynamic Characteristics of NITINOL-Reinforced Composite Plates", *Intl. Journal of Composite Engineering*, Vol.5, No.1, pp.91-106, 1995.

48. Baz, A., "Optimal Deflection Control of Multi-Segment Traversing Beam", *J. of Smart Materials & Structures*, Vol. 4, pp.75-82, 1995.

49. Baz, A., S. Poh*, J. Ro* and J. Gilheany, "Control of The Natural Frequencies of NITINOL-Reinforced Composite Beams", *J. of Sound & Vibration*, Vol. 185, No. 1, pp. 175-185, 1995.

50. Baz, A., "Continuous Sliding Mode Control of Flow-Induced Vibrations*", J. of Shock and Vibration*, Vol. 2, No. 5, pp. 365-372, 1995.

51. Gumusel*, L. and A. Baz, "Experimental and Theoretical Evaluation of Buoyancy and Gravity Driven Underwater Robots", *J. of Robotica*, Vol. 13, No. 273-286, 1995.

52. Baz, A. and S. Poh*, "Optimal Vibration Control of Flexible Beams using Modal Positive Position Feedback", *J. of Optimal Control*, Vol. 17, No.2, pp. 141-150, 1996.

53. Poh*, S. and A. Baz, "Active Control of Vortex-Induced Vibration Using Adaptive Least Mean Square Algorithm", *J. of Fluids & Structures*, Vol. 10, No. 6, 1996.

54. Baz, A. and L. Gumusel*, "Optimum Design of a Buoyancy and Gravity-Driven Underwater Robot", *J. of Robotic Systems*, Vol. 13, No. 7, pp. 461-473, 1996.

55. Poh*, S., A. Baz and B. Balachandran, "Experimental Adaptive Control of Sound Radiation from a Plate into Acoustic Cavity using Active Constrained Layer Damping", *J. of Smart Materials & Structures*, Vol. 5, pp. 649-659, 1996.

56. Baz, A. and S. Poh*, "Modal and Physical Deflections of Beams Using Distributed Wire Sensors", *J. of Smart Materials & Structures*, Vol. 5, pp. 261-271, 1996.

57. Baz, A. and J. Ro*, "Vibration Control of Plates with Active Constrained Layer Damping", *J. of Smart Materials & Structures*, Vol. 5, pp. 272-280, 1996.

58. Baz, A., "Boundary Control of Beams with Active Constrained Layer Damping", *ASME J. of Vibration & Acoustics*, Vol. 119, No. 2, pp. 166-172, 1997.

59. Baz, A. and S. Poh*, "A New Class of Distributed Sensors", *ASME J. of Vibration & Acoustics*, Vol.119, No.4, pp. 582-590, 1997.

60. Baz, A. and J. Hong*, "Adaptive Control of Flexible Structures Using Modal Positive Position Feedback", *J. of Adaptive Control and Signal Processing*, Vol. 11, pp. 231-253, 1997.

61. Baz, A., "Dynamic Boundary Control of Beams with Active Constrained Layer Damping", *J. of Mechanical Systems & Signal Processing,* Vol. 11, No.6, pp.811-825, 1997.

62. Baz, A., "Optimization of Energy Dissipation Characteristics of Active Constrained Layer Damping", *J. of Smart Materials & Structures*, Vol. 6, pp. 360-368, 1997.

63. Tawfeic* S, Baz A, Ismail A, Azim O, and Karar S, "Vibration control of a flexible arm with active constrained layer damping*", J. Of Low Frequency Noise, Vibration and Active Control*, **Vol.** 16, No.4, pp. 271-287, 1997.

64. Ray, M. and A. Baz, "Optimization of Energy Dissipation Characteristics of Active Constrained Layer Damping Treatments of Plates", *J. of Sound & Vibration*, Vol. 208, No. 3, pp. 391-406, 1997.

65. Baz, A., "Robust Control of Active Constrained Layer Damping", *J. of Sound & Vibration*, Vol. 211, No. 3, pp.467-480, 1998.

66. Shields*, W., J. Ro* and A. Baz, "Control of Sound Radiation from a Plate into an Acoustic Cavity Using Active Piezoelectric Damping Composites", *J. of Smart Materials & Structures*, Vol. 7, pp. 1-11, 1998.

67. **Ro*, J. and A. Baz**, "Control of Sound Radiation from a Plate into an Acoustic Cavity using Active Constrained Layer Damping", *J. of Smart Materials and Structures*, Vol. 8, No. 3, pp. 292-300, 1999.

68. Park*, C. and A. Baz, "Vibration Damping and Control Using Active Constrained Layer Damping: A Survey", *Shock and Vibration Digest*, Vol. 31, No. 5, pp. 355-364, 1999.

69. Park*, C. and A. Baz, "Vibration Control of Bending Modes of Plates Using Active Constrained Layer Damping", *J. of Sound and Vibration*, Vol. 227, No. 4, pp. 711-734, 1999.

70. Oh*, J., M. Ruzzene, A. Baz, "Control of the Dynamic Characteristics of Passive Magnetic Composites", *J. of Composites Engineering*, Part B, Vol. 30, pp. 739-751, 1999.

71. Baz, **A.** "Spectral Finite Element Modeling of Wave Propagation in Rods using Active Constrained Layer Damping", *J. of Smart Materials and Structures*, Vol. 9, pp. 372-377, 2000.

72. Ruzzene, M. and A. Baz, "Control of Wave Propagation in Periodic Rods using Shape Memory Inserts", *ASME J. of Vibration and Acoustics*, Vol. 122, pp. 151-159, 2000.

73. Baz, A. and T. Chen*, "Control of Axi-symmetric Vibrations of Cylindrical Shells using Active Constrained Layer Damping", *J. of Thin-Walled Structures*, Vol. 36, No. 1, pp. 1-20, 2000.

74. Ruzzene, M. and A. Baz, "Finite Element Modeling of Vibration and Sound Radiation from Fluid-Loaded Damped Shells", *J. of Thin-Walled Structures*, Vol. 36, No. 1, pp. 21-46, 2000.

75. Ruzzene, M. and A. Baz, "Spectral Finite Element Modeling of Wave Propagation in Beams Treated with Active Constrained Layer Damping", *J. of the Chinese Soc. Of Mech. Eng*., Vol. 21, No. 1, pp. 49-56, 2000.

76. Ruzzene, M., J. Oh* and A. Baz, "Finite Element Modeling of Magnetic Constrained Layer Damping", *J. of Sound & Vibration*, Vol. 236, No. 4, pp. 657-682, 2000.

77. Arafa*, M. and A. Baz, "Dynamics of Active Piezoelectric Damping Composites", *J. of Composites Eng.: Part B*, Vol. 31, pp. 255-264, 2000.

78. **Arafa*, M. and A. Baz**, "Energy Dissipation Characteristics of Active Piezoelectric Damping Composites", *J. of Composites Sci. & Tech.*, Vol. 60, pp. 2759-2768, 2000.

79. Baz, A. and S. Poh*, "Performance Characteristics of Magnetic Constrained Layer Damping*", J. of Shock & Vibration*, Vol. 7, No. 2, pp. 18-90, 2000.

80. Oh*, J., S. Poh*, M. Ruzzene, and A. Baz, "Vibration Control of Beams using Electromagnetic Compressional Damping Treatment", *ASME J. of Vibration & Acoustics*, Vol. 122, No. 3, pp. 235-243, 2000.

81. Ruzzene, M. and A. Baz, "Active/Passive Control of Sound Radiation and Power Flow in Fluid-Loaded Shells", *J. of Thin-Walled Structures*, Vol. 38, No. 1, pp. 17-42, 2000.

82. Chen*, T., M. Ruzzene and A. Baz, "Control of Wave Propagation in Composite Rods Using Shape Memory Inserts: Theory and Experiments", *J. of Vibration and Control*, Vol. 6, No. 7, pp. 1065-1081, 2000.

83. Ruzzene, M. and A. Baz, "Attenuation and Localization of Wave Propagation in Composite Periodic Rods Using Shape Memory Inserts", *J. of Smart Materials & Structures*, Vol. 9, pp. 805-816, 2000.

84. Omer*, A., and A. Baz, "Vibration Control of Plates using Elecrtomagnetic Damping Treatment", *J. of Intelligent Material Systems & Structures*, Vol. 11, No. 10, pp. 791-797, 2000.

85. Crassidis, J., A. Baz, and N. Wereley, " H_∞ Control of Active Constrained Layer Damping", *J. of Vibration & Control,* Vol. 6, No. 1, pp. 113-136, 2000.

86. Baz, A., T. Chen* and J. Ro*, "Shape Control of NITINOL-reinforced Composite Beams", *J. of Composite Engineering: Part B*, Vol. 31, pp. 631-642, 2000.

87. Ray, M., J. Oh* and A. Baz, "Active Constrained Layer Damping of Thin Cylindrical Shells**",** *J. of Sound & Vibration*, Vol. 240, No. 5, pp. 921-935, 2001.

87. Park*, C. and A. Baz, "Comparison between Finite Element Formulations of Active Constrained Layer Damping using Classical & Layer-wise Laminate Theory", *Intl. J. of Finite Elements*, Vol. 37, pp. 35-56, 2001.

88. Ray, M. and A. Baz, "Control of Nonlinear Vibration of Beams using Active Constrained Layer Damping", *J. of Vibration and Control*, Vol. 7, pp. 539-549, 2001.

90. Baz, A. and J. Ro*, "Vibration Control of Rotating Beams with Active Constrained Layer Damping", *J. of Smart Materials & Structures* , Vol. 10, No. 1, pp. 112-120, 2001.

92. Baz, **A.** "Active Control of Periodic Structures", *ASME Journal of Vibration and Acoustics*, Vol. 123, pp. 472-479, 2001.

93. Ruzzene, M. and A. Baz, "Active Control of Wave Propagation in Periodic Fluid-Loaded Shells", *J. of Smart Materials & Structures*, Vol. 10, No. 5, pp. 893-906, 2001.

94. Thorp*, O., M. Ruzzene, and A. Baz, "Attenuation and Localization of Wave Propagation in Rods with Periodic Shunted Piezoelectric Patches", *Journal of Smart Materials & Structures*, Vol. 10, pp. 979-989, 2001.

95. Oh*, J., M. Ruzzene, and A. Baz, "Passive Control of the Vibration and Sound Radiation from Submerged Shells", *Journal of Vibration and Control*, Vol. 8, No 4, pp. 425-450, 2002.

96. Laplante*, W., T. Chen*, A. Baz and W. Shields*, "Active Control of Vibration & Noise Radiation from Fluid-Loaded Cylinder using Constrained Layer Damping *Journal of Vibration and Control*, Vol. 8, No. 8, pp. 877-902, 2002.

97. Ro*, J. and A. Baz, "Optimal Placement & Control of Active Constrained Layer Damping using Modal Strain Energy Approach", *Journal of Vibration and Control*, Vol. 8, No. 8, pp. 861-876, 2002.

98. Ro*, J. and A. Baz, "Vibration Control of Plates using Self-Sensing Active Constrained Layer Damping Networks", *Journal of Vibration and Control*, Vol. 8, No. 8, pp. 833-845, 2002.

99. Aldraihem, O. and A. Baz, "Dynamic Stability of Stepped Beams Under Moving Loads", *Journal of Sound and Vibration*, Vol. 250, No. 5, pp. 835-848, 2002.

100. Akl*, W., M. Ruzzene, and A. Baz, "Optimal Design of Underwater Shells", *Journal of Structures and Multi-Disciplinary Optimization*, Vol. 23, pp. 297-310, 2002.

101. Asami, T., O. Nishihara, and A. Baz, "Analytical Solutions to $H\infty$ and H_2 Optimization of Dynamic Vibration Absorbers Attached to Damped Linear Systems", *ASME Journal of Vibration and Acoustics*, Vol. 124, No. 2, pp. 284-295, 2002.

102. Solaroli, A., Z. Gu*, A. Baz, and M. Ruzzene, "Wave Propagation in Periodic Stiffened Shells: Spectral Finite Element Modeling and Experiments", *Journal of Vibration and Control*, Vol. 9, pp. 1057-1081, 2003.

103. Aldraihem, O. and A. Baz, "Moving Loads Induced Instability in Stepped Beams", *Journal of Vibration and Control*, Vol. 10, No. 1, pp.3-23, 2004.

104. Park*, C. and A. Baz, "Newtonian and Variational Formulations of the Dynamics of Plates with Active Constrained Layer Damping Treatments", *J. of Vibration and Control*, Vol. 10, pp. 399-421, 2004.

105. Arafa*, M., and A. Baz, "On the Nonlinear Behavior of Piezoelectric Actuators", *J. of Vibration and Control*, Vol. 10, pp. 387-398, 2004.

106. Baz., A., and A. Tempia**, "Active Piezoelectric Damping Composites", *Journal of Sensors and Actuators: A. Physical*, Vol. 112, No.2-3, pp. 340-350, 2004.

107. Singh, A., Pines, D J, and A Baz, "Active/passive vibration reduction of periodic 1D structures using piezoelectric actuators", *Journal of Smart Materials & Structures*, Vol. 13, No. 4, pp. 698 - 711, 2004.

108. Tawfik*, M., and A. Baz, "Experimental and Spectral Finite Element Study of Plates with Shunted Piezoelectric Patches", *Intl. Journal of Acoustics and Vibration*, Vol. 9, No. 2, pp. 87-97, 2004.

109. Toso*, M. and A. Baz, "Wave Propagation in Periodic Shells with Tapered Wall Thickness and Changing Material Properties", *Journal of Shock and Vibration*, Vol. 11, No 3-4, pp. 411 – 432, 2004.

110. Park*, C. H. and A. Baz , "Vibration Control of Beams with Negative Capacitive Shunting of Interdigital Electrode Piezoceramics", *Journal of Vibration and Control*, Vol. 11, No. 3, pp. 331-346, 2005.

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43. A. Baz, "Active Acoustic Metamaterial with Tunable Effective Density using A Disturbance Rejection Controller", The 13th International Conference on Theoretical & Computational Acoustics (ICTCA2017), Vienna University, 30 July to 3 August 2017.

44. **H. Alsupie, S. Sassi, and A. Baz, "**Band Gap and Dispersion Characteristics of Structures with Viscoelastically Damped Resonant Periodic Inserts", The 13th International Conference on Theoretical & Computational Acoustics (ICTCA2017), Vienna University, 30 July to 3 August 2017.

45. A. Baz, "Active Acoustic Metamaterials With Programmable Densities Using an H-∞ Controller", Paper No: IMECE2018-87749, V011T01A014; 8 pages, https://doi.org/10.1115/IMECE2018-87749, January 15, 2019.

46. A. Baz, and Han Zhou A piezoelectric-nonreciprocal metamaterial with shaped eigenvectors using shunted networks, *InterNoise* 2022, 21-24 August, Scottish Event Campus, Glasgow, 2022

SHORT COURSES

A. Baz, "Dynamics and Control of Spinning Satellites", COMSAT, Clarksburg, MD, May 1994.

A. Baz, "Dynamics and Control of Spinning Satellites", ARABSAT, Riyadh, Saudi Arabia, December 1994.

A. Baz, "Active/Passive Vibration Control", University of Manchester, UK, May 1994

A. Baz, "Active/Passive Vibration and Noise Control", Fiat Research Center, Turin, Italy June 1994.

A. Baz, "Active Vibration Control", Lockheed-Martin, June 1999.

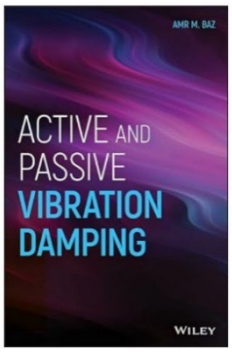
A. Baz, "Active Vibration Control", Turin Polytechnic, Italy, January 2000.

A. Baz, "Active/Passive Vibration Damping", ASME *Design Engineering Technical Conf.*, Pittsburgh, PA September 2001.

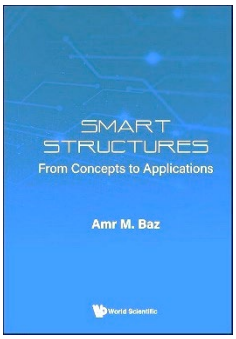
A. Baz, "Acoustics and Noise Control", Aramco, Dammam, Saudi Arabia, December 2008.

BOOKS

A. **Baz,** "*Active and Passive Vibration Damping*", *J. Wiley*, In Press, ISBN# 9781118481929, 2019.



A. Baz, *Smart Structures: Concepts and Applications***,** *World Scientific*, ISBN: 978-1-80061-412-3, Sept.2024.



A. Baz, "*Active Vibration Control*", Springer, expected completion date January 2025.

A. Baz, "*Advanced Vibrations*", *Elsevier*, expected completion date June 2025.

A. Baz, and O. Aldraihem, "*Principles of Energy Harvesting*", *Springer,* expected completion date December 2024.

A. Baz, "*Acoustics and Noise Control*", *Springer,* expected completion date December 2025.

CHAPTERS IN BOOKS

1. **Baz, A. and J. Vossoughi**, " Stress Considerations in Robot Grippers" In Robot Grippers, ed. by D.T. Pham and W. B. Hegibotham, IFS Publications and Springer-Verlag, Berlin, pp. 213-228, 1986.

2. **Baz, A., S. Poh, J.Ro, M. Mutua and J.Gilheany**, "Active Control of NITINOL-Reinforced Composite Beams", *In Intelligent Structural systems*, ed. by H.S.Tzou and G.Anderson, Kluwer Academic Publishers, The Netherlands, 1992.

3 Baz, **A.,** " Vibration Control with Shape Memory Alloys", *Encyclopedia of Vibration*, Ed. by Simmons, Ewins and Rao, Academic Press, pp.1144- 1155, 2001.

4. Baz, **A.,** "Active/Passive Damping", *Encyclopedia of Vibration*, Ed. by Simmons, Ewins and Rao, Academic Press, pp. 351-364, 2001.

5. Baz, A., "Shape Control of Flexible Structures", in *Smart Composites*, ed. by K. Uchino, Elsevier Pub. Co., Chapter 5.30, pp. 621-632, 2000.

6. Baz, A., "*Smart Structures and Materials 2003: Smart Structures and Integrated Systems*", Vol. 5056, SPIE, ISBN 0-8194-4855-9, 2003.

7. Nouh M., Aldraihem O., and A. Baz, "Thermoacoustic Piezoelectric Energy Harvesters", Chapter 11 in "*High Temperature Materials & Mechanisms*" Edited by Yoseph Bar-Cohen, pp. 331-354, CRC, 2014.

8. W. Akl and A. Baz, "Active Acoustic Metamaterials", Chapter 2 in "*Theory and Design of Acoustic Metamterials*", Edited by P. F. Pai and G. Huang, pp. 19-52, SPIE Press, 2015

REPORTS

1. Baz, A., "Experimental Control of Vibrations by Piezo-Electric Bimorphs", U.S. Army Research Office, Technical Report # 23185-EG-II, August 1985.

2. Baz, A., "Static Deflection Control of Flexible Beams by Piezo-Electric Actuators", NASA Technical Report # N87-13788, September 1986.

3. Baz, A. and J. Gilheany, "Feasibility Study of A Compressed Gas-Powered Temperature Controller for Hyperbaric Diving Habitats", NOAA Technical Report # 40AANR600967, September 1986.

4. Baz, A., J. Giacomin and J. Gilheany, "A Parametric Study of the Static and Dynamic Characteristics of Conventional and Compliant Rolling Contact Bearings", NBS Technical Report #60NANB6D0648, December 1986.

5. Baz, A, and S.Poh, "A Comparison between IMSC, PI and MIMSC Methods in Controlling the Vibration of Flexible Systems", NASA Technical Report # N87-25605, Sept. l987.

6. Baz, A., S. Poh and J. Ro, "Cross-Over Monitoring of Traversing Beams", Fort Belvoir R D & E Center Tech. Report, April 1994.

PATENTS

1. Seireg, A. and A. Baz, "Decompression Plan Calculator", U.S. Patent No. 4,037,084, July 1977.

2. Seireg, A. and A. Baz, "Decompression Plan Device", U.S. Patent No.4,054,783, October 1979.

3. Seireg, A. and A. Baz, "Pressure Regulator for Breathing Apparatus", U.S. Patent No. 4,289,126, October 1981.

4. Baz, A. and S. Ismail, "Fluidic Irrigation Sprinkler", Egyptian Patent No. 448/81, August 1981.

5. Baz, A., "Active Constrained Layer Damping", U. S. Patent, 5,485,053, Jan. 1996.

6. Baz, A., "Distributed Sensor for shape and health Monitoring of Morphing and Inflatable Structures", U.S. Patent Application, October 19, 2005.

7. diMarzo, M. and A. Baz, "Integrated sensor monitoring the allowable heat exposure time for firefighters", U.S. Patent Application, # PS-2006-018, March 15, 2006.

8. Baz, A., "Smart Car Seat Sensor", U.S. Patent Application, October 1, 2007.

9. Baz, A., "Active Acoustic Metamaterials", U.S. Patent Application, September 1, 2009.

10. A. M. Baz and M.diMarzo, "Heat and Fire Protective Items", U.S. Patent No.: US 10,300,313 B2, May 28, 2019.

RECENT RESEARCH GRANTS (Last 25 Years)

2022	$50,000	Smart Fire Protection Blankets, NSF, I-Corps, Award Number: 2042676.
2016	$400,000	Shape Control and Energy Dissipation of Shape Memory Polyurea under Impact and Cyclic Loading, King Abdulaziz City of Science & Technology (KACST).
2014	$311,747	Active and Passive Vibration Control of Periodic Drill-Strings (Qatar National Research Foundation)
2013	$400,000	Multifunctional Polyurea Composites for Mitigating & Monitoring

		Vibration, Impact Loading, Abrasion, and Health of Structures, King Abdulaziz City of Science & Technology (KACST).
2013	$ 65,000	Power Flow Measurement using Discrete Strain Sensors, Airbus
2011	$ 50,000	Discrete and Distributed Strain Sensors, Airbus
2011	$581,769	Battery-Free Flashover Alarm for Firefighters
2009	$224,857	Active Acoustic Cloaks, ONR
2009	$723,110	"Smart Firefighter Garments for Burn Mitigation and Firefighter Safety", Dept. of Homeland Security, DHS
2008	$407,317	Quiet Underwater Shells with Circulatory Advanced Grid Stiffeners, ONR
2008	$32,665	Orion Landing Loads Attenuation, NASA- GSFC
2008	$16,900	Firefighter Accountability, Dept. of Homeland Security
2008	$276,819	Characterization of the Hydrodynamics of Undersea Vehicles and Propulsors using Particle Image Velocimetry, ONR
2008	$133,000	Smart Paint, King Saud University, Saudi Arabia
2007	$ 64,953	Long term monitoring of firefighter heat exposure during normal operation, Center for Disease Control, National Institute for Occupational Safety and Health
2007	$107,652	Firefighter Temperature and Humidity Exposure Computer, Department of Homeland Security & MFRI
2007	$ 36,938	Solar- HALE UAV – Minta Martin Grant/UMD
2007	$ 29, 887	"Shape and Health Monitoring of Morphing Structures", ARO
2006	$229,951	"Shape and Health Monitoring of Morphing Structures", NSF-CMS
2006	$ 76,890	Head Displays for Firefighters, Dept. of Homeland Security- MFRI
2005	$ 299,024	Virtual Reality Design of Underwater Shells with Advanced Grid Stiffeners, Office of Naval Research
2005	$ 30,000	Mitigation of Air Gun High Frequency Stress Waves, Army Research Laboratory

2005	$ 40,000	Monitoring of Vital Signs of Firefighters, Maryland Fire & Rescue Institute
2005	$ 77,113	Active Noise Control of Fans, MIPS program & Warner Air, LLC
2004	$119,870	Intelligent Life Searching and Saving (ILSS)" System, National Science Foundation
2004	$ 32,167	Smart Snake Robots, SAIC
2004	$ 86,020	Health Monitoring of the New High Performance Bridge, MDOT/SHA
2004	$139,406	Hybrid Piezoelectric Acoustic Actuation System, DARPA, Defense Science Office
2004	$ 65,720	Equipment for Wireless Distributed Deflection and Health Monitoring of Bridges, National Science Foundation.
2003	$ 35,000	Monitoring of Vital Signs of Firefighters, Maryland Fire & Rescue Institute
2003	$ 50,677	Aging of Fiber Optic Cables, Naval Air Warfare Center
2003	$ 76,616	Hearing Protection for Earmuffs, Maryland Industrial Partnerships Program (MIPS) and Big Bang Products.
2002	$ 338,668	Virtual Reality Simulation of Vib. & Acoustic Power Flow in Underwater Shells – Office of Naval Research (Three Years)
2002	$ 36,100	Integrated Simulation-Based Design Environment, ONR/BPG
2002	$ 30,150	Fabrication of Micro-structures for Electronic Cooling, ATEC-SBIR
2001	$ 220,00	Multifuntional Integrated Piezo-Fiber Modulation System, NASA-Langley
2001	$ 70,000	Microdrive Piezo-Actuator, ARO/QorTek
2001	$ 20,000	Shock Mitigation Mounts, ONR/QorTek.
2000	$ 412,739	Virtual Structural Dynamics, Acoustics & Control - Army Research Office (Two Years)
2000	$ 314,368	Virtual Design of Quiet Underwater Shells – Office of Naval Research (Three Years
1999	$ 100,283	A Thrust Stand for Microengines – NASA (Two Years with M. Lewis)
1999	$ 468,199	Active & Passive Vibration & Noise Control of Underwater Shells - Office of Naval Research (Three Years).

1999	$ 144,080	Engineered Damping Treatments - Army Research Office
1999	$ 237,717	Active & Reactive Shells - Army Research Office (Three Years)
1998	$ 135,407	Vib. & Noise Monitoring Of Large Platforms- Army Research Office
1997	$ 131,036	Instrumentation for Monitoring Precision Pointing Systems - U.S. Army Research Office
1997	$ 129,476	Passive Magnetic Composites - U.S. Army Research Office (Three Years)
1996	$1,958,045	Active and Passive Control of Smart Structures - U.S. Army Research Office (SPURI- Five Years)
1995	$ 24,840	Identification of the Dynamics & Noise Sources of Adv. Air Filter/Cooling Auxiliary Power Unit (with J. Gilheany)
1995	$ 44,952	Active, Passive and Hybrid Vibration Control Office of Naval Research (Three Years)
1994	$ 13,380	Equipment for Active Constrained Layer Damping - U.S. Army Research Office
1994	$ 123,093	Active Constrained Layer Damping For Sandwiched Plates and Shells – U.S. Army Research Office
1993	$ 290,337	Active Constrained Layer Damping - U.S. Army Research Office (URI - Three Years)
1993	$ 15,459	Cross-Over Monitoring of Traversing Beams - U.S.Army Belvoir R D & E Center.
1993	$ 98,575	Control of Smart Traversing Beam - U.S.Army Fort Belvoir R D & E Center.
1991	$ 43,820	Active Control of NITINOL-Reinforced Smart Structural Composites – Army Research Office. (Equipment Grant).
1991	$ 162,269	Control of Smart Traversing Beam - U.S.Army Fort Belvoir R D & E Center. (Two Years)
1989	$ 329,985	Active Control of NITINOL-Reinforced Smart Structural Composites – Army Research Office. (URI - Three Years)
1998	$ 35,000	Dynamics and Noise of Rolling Contact Bearings - David Taylor Research Center - Annapolis.(with J. Gilheany)

1988	$ 71,440	Dynamics and Noise of Rolling Contact Bearings - National Bureau of Standards. (with J. Gilheany)
1988	$ 40,750	Active Control of Flexible Structures with Piezo - Electric Actuators – NASA Goddard Space Flight Center
1988	$ 40,750	Passive Control of Flexible Structures - NASA Goddard Space Flight Center
1987	$ 40,600	Active Control of Flexible Structures With Piezo - Electric Actuators – NASA Goddard Space Flight Center.
1987	$ 44,504	Active Control of Flexible Structures with Payload Isolation - NASA Goddard Space Flight Center.
1986	$ 99,840	Dynamics & Noise of Rolling Contact Bearings - National Bureau of Standards. (with J.Gilheany)
1986	$ 122,200	Active Control of Longitudinal Vibrations of Propeller Shafts - David Taylor Naval Ship R & D Center, Annapolis, MD. (with J.Gilheany)
1986	$ 42,750	Active Control of Space Structures Using Piezo-Electric Bimorphs - NASA Goddrad Space Flight Center.
1986	$ 40,902	Distributed Active Control of Large Flexible Space Structures - NASA Goddard Space Flight Center. (with C.Ngyuen).
1985	$ 9,999	The Dynamic Characteristics of Vortex Tube- Assisted Hyberbaric Chambers – NOAA.
1985	$ 18,635	Experimental Control of Vibrations by Piezo-Electric Bimorphs – US Army Research Office.
1985	$ 27,650	Active Control of Flexible Space Structures - NASA Goddard Space Flight Center.
1984	$ 85,700	The Dynamic & Thermal Characteristics of Vortex Tubes - Naval Sea Systems Commands.

RECENT COURSE OFFERINGS

ME 344 - Mechanical Vibrations
ME 441 - Senior Design I

ME 442 - Senior Design II
ME 571 - Optimum Design of Mechanical systems
ME 572 - Computer Control of Mechanical Systems
ME 753 - Active Vibration Control
ME 755 - Adaptive Control
ME 756 - Optimum Control of Mechanical Systems
ME 759 - System Identification
ENME 662 - Linear Vibrations
ENME 664 - Dynamics
ENME 665 - Adv. Topics in Vibrations (Nonlinear Vib.)
ENME 704 - Active Vibration & Noise Control
ENME 711 - Vibration Damping
ENME 361 - Vibration, Control, & Optimization I
ENME 462 - Vibration, Control, & Optimization II
ENME 489P - Control of Smart Structures
GEMS 296 - Team Project Seminar I
ENES 601 - Future Faculty Program Seminar I
ENES 221 - Dynamics

DISSERTAION GUIDANCE

M.Sc.

1. R. Johnston, "Dynamic Characteristics of Vortex Tube - Assisted Hyperbaric Chambers", M.Sc. Thesis, May 1984.

2. T. Readey, "A Breathing Regulator For Undersea Divers With Vortex Tube Assist", M.Sc. Thesis, May 1985.

3. M. Tadi, " Active Control of Flexible Structures", M.Sc. Thesis, September 1986.

4. L. Gumusel, "Optimum Design of an Underwater Robots", M.Sc. Thesis, September 1987.

5. S. Poh, " Modified Independent Modal Vibration Control of Flexible Systems", M.Sc. Thesis, September 1987.

6. A. Elamin, "Design and Testing of Passive Fluid Loop Dampers", M.Sc. Thesis, December 1987.

7. M. Mairza, "Optimum Design of Robot Grippers", M.Sc. Thesis, September 1987.

8. J. Giacomin, "The Static & Dynamic Characteristics of Compliant Rolling Contact Bearings", M.Sc. Thesis, January 1988.

9. J. Freal, "A Non-Contact, High Sensitivity Surface Deflection Sensor", M.Sc. Thesis, May 1991.

10. P. Bracho, " Active Control of Longitudinal Vibrations of Propeller Shafts", M.Sc. Thesis, April 1994.

11. G. Rosanova, "Active Vibration Control of Beams with Electromagnetic Actuators", M.Sc. Thesis, July 1997.

12. R. Dickens, "Optimization of a Piezoelectric Acoustical Compressor: Theoretical Development", M.Sc. Thesis, January 2004.

13. A. Chaudry, "Passive Stand-Off Layer Damping Treatment: Theory & Experiments", M.Sc. Thesis, August 2006.

14. J. Smoker, "Virtual Reality Simulation of a Car Suspension with Active Control Capability", M.Sc. Thesis, August 2009.

15. M. Colvin, "Energy Sinks with Nonlinear Stiffness and Nonlinear Damping", M.Sc. Thesis, May 2010.

16. Y. Alsaffar, "Smart Paint Sensor for Monitoring Structural Vibrations", M.Sc. Thesis, December 2010.

17. D. Chinn, "Piezoelectrically-Driven Thermoacoustic Refrigerator", M.Sc. Thesis, December 2010.

18. A. Roshwalb, "Traveling Wave Thermoacoustic- Piezoelectric Energy Harvester: Theory and Experiment", M.Sc. Thesis, October 2011.

19. B. Baqai, "Active Nonreciprocal Acoustic Metamaterial (ANAM)", May 2017.

20. S. Raval, "Active Control of Non-Reciprocal Acoustic Metamaterial with a Dynamic Controller", M. Sc., August 2019.

21. H. Husker, "Inflatable Acoustic Metamaterial", M.Sc. Thesis, May 2021.

22. K. Petrover, "Acoustic Black Hole with Functionally-Graded Perforated Rings", M.Sc. Thesis, August 2024.

Ph.D.

1. D. Uhler, "The Dynamic & Thermal Characteristics of Pressure-Excited Vortex Tubes", Ph.D. Thesis, May 1986 (Director of Diving & Salvage- US Navy).

2. S. Poh, "Active Vibration Control of Large Structures using a Modified Independent Modal Space Control Method", Ph.D. Thesis, May 1989 (Naval Surface Warfare Center, Cardrock, MD).

3. M. Kim, "Active Control of Fluid-Induced Vibration of Flexible Structural Members", Ph.D. Thesis, October 1989. (Naval Surface Warfare Center, Cardrock, MD)

4. G. Levent, "A New Class of Underwater Robots", Ph.D. Thesis, April 1990. (Professor, Karadeniz Technical University, Turkey)

5. T. Montgomery, "Control of Vortex-Induced Vibration of NITINOL-Reinforced Composite Cylinders" Ph.D. Thesis, October 1991. (Applied Research Lab (ARL) - Penn State Univ.)

6. J. Hong, "Adaptive Control of Flexible Structures using Independent Modal Positive Position Feedback" Ph.D. Thesis, October 1991. (Asst. Director of Defense Research Agency, S. Korea)

7. M. Mutua, "Active Buckling Control of Nitinol-Reinforced Composite Beams" Ph.D. Thesis, December 1991.

8. J. Ro, "Vibration Control of NITINOL-Reinforced Composite Plates", Ph.D. Thesis, June 1993. (Professor, Da-Yeh University, Changhua, Taiwan).

9. N. Hussein, "Active Control of Vortex-Induced Vibrations", Ph.D. Thesis, June 1994. (Professor, Marine Corps University, retired)

10. C. Park, "Vibration Control of Plates Using Active Constrained layer Damping", Ph.D. Thesis, April 1996. (Professor. Professor, Pohang University, S. Korea)

11. T. Chen, "Vibration Control of Cylindrical Shells Using Active Constrained layer Damping", Ph.D. Thesis, August 1996. (Naval Surface Warfare Center, Cardrock, MD).

12. C. Kim, "Vibration Control of Sandwiched Plates Using Active Constrained Layer Damping", Ph.D. Thesis, August 1996. (NASA- Goddard Space Flight Center, Code 543)

13. N. Sidki, "Control of Lateral Buckling of NITINOL-Reinforced Open Section Beams", Ph.D. Thesis, February 1997. (SAIC, Director of Robotics Program)

14. W. Shields, "Active Control of Plates Using Compressional Constrained Layer Damping", Ph.D. Thesis, March 1997. (Northrop-Grumann Corp.- Oceanic Systems)

15. R. Whaley, "Active Control of Submerged Plates using Active Constrained Layer Damping", Ph.D. Thesis expected in Dec. 1997. (Director of Diving & Salvage- US Navy)

16. J. Pesaturo, "Control of the Vibration of Submerged Plates", Ph.D. Thesis, July 1997. (Lockheed-Martin)

17. S. Abdou, "Vibration Control of Beams using Magnetic Constrained Layer Damping", Ph.D. Thesis, March 1998. (Professor, Military Academy- Egypt)

18. A. Ebrahim, "Vibration Control of Plates using Magnetic Constrained Layer Damping", Ph.D. Thesis, February 1998. Professor, Military Academy- Egypt)

19. A. Omer, "Active Control of Comressional Constrained Layer Damping Treatments using Electromagnetic Actuation", Ph.D., Thesis, February 1998. (Professor, Military Academy- Egypt)

20. Z. Gu, "Control of Precision Pointing Systems", Ph.D., Thesis, February 1998.

21. W. Laplante, " Vibration Control of Fluid-Loaded Cylindrical Shells using Active Constrained Layer Damping", Ph.D., Thesis, January 1998. (Under Secretary of the US Navy).

22. J. Oh, "Control of the Static and Dynamic Characteristics of Passive Magnetic Composites", Ph.D. Thesis, September 1998, (deceased).

23. P. Herdic, "Vibration Control of Stiffened Cylindrical Shells Using Active Constrained Layer Damping", October 1998. (Naval Research Lab.- Structural Acoustics Div.)

24. A. Kayflew, "Vibration Control of Beams using Electromagnetic Compressional Damping Treatments", July 1999. (Northrop-Grumann Corp.- Baltimore)

25. A. Hassan, "Control of Wave Propagation in Shells Using Active Constrained Layer Damping", February 2000. (Professor, Military Academy- Egypt)

26. M. Arafa, "Vibration and Noise Control using Active Piezoelectric Damping Composites", August 2002, (Professor, American University in Cairo- Egypt)

27. S. Lin, "Vibration Control of Rotating Beams using Active Constrained Layer Damping", December 2002. (Duratek, Inc., Columbia, MD)

28. S. Asiri, "Isolation of Helicopter Gearbox Vibration using Periodic Support Struts", February 2003. (Professor, King Abdul Aziz University, Saudi Arabia).

29. M. Tawfik, "Vibration Control of Plates using Periodically Distributed Shunted Piezoelectric Patches", April 2003, (Professor, German University, Cairo, Egypt).

30. M. Ajimi, "Homogenization and Topology Optimization of Constrained Layer Damping Treatments", February 2004, (Professor, Kuwait University).

31. M. Toso, "On the Wave Propagation in Rods, Shells, and Rotating Shafts with Nonuniform Geometry", February 2004, (European Space Agency).

32. W. Akl, "Smart Foam for Active Vibration and Noise Control", February 2004, (President of Nile University, Cairo, Egypt).

33. A. Sabbagh, "Nonlinear Dynamics of Axisymmetric Acoustic Resonators", November 2005 (Prof. Ain Shams University, Cairo, Egypt).

34. R. Deigan, "Modeling and Experimental Investigations of the Shock Response of Viscoelastic Foams ", January 2007 (Naval Surface Warfare Center, Cardrock, MD).

35. K. Al-Mitani, "Minimizing the Acoustic Coupling of Fluid-Loaded Plates using Topology Optimization", November 2008 (King Abduk-Aziz University, Jeddah, Saudi Arabia).

36. M. Leibolt, "Noise control of Acoustic Cavity Coupled with a Plate Treated with Spatially Varying Damping Treatment", October 2009 (Naval Surface Warfare Center, Cardrock, MD).

37. J. Smoker, "Design of a Programmable Active Acoustics Metamaterial", September 2012, (Naval Surface Warfare Center, Cardrock, MD).

38. M. Nouh, "Thermoacoustic-Piezoelectric Systems with Dynamic Magnifiers", May 2013, (Assoc. Prof., SUNY – Buffalo, NY)

39. A. Aladwani, "Piezoelectric Vibration Energy Harvesting From Coupled Structural-Acoustic Systems", July 2013, "Asst. Professor, Kuwait University).

40. S. Al-Thamer, "Active Acoustic Metamaterials", Dec. 2015, (Asst. Prof., King Khalid University, Abha, Saudi Arabia)

41. H. AlSupie, "Vibration of Periodic Drillstrings with Local Sources of Resonance", August 2016, (Assoc. Prof., Taif University, Taif, Saudi Arabia)

42. Y. Alsaffar, "Passive Vibration Control of Periodic Drill String", May 2017 (Research Center of Kuwait Oil Company).

43. M. Raafat, "Static and Dynamic Analysis of Periodic Tensegrity Structures", Senior Research Engineer, *ASML* Lithography Systems, Wilton, CT., August 2017.

44. Y. Abdullah, "Brake Squeal: Modeling and Energy Harvesting", (Asst. Prof., Kuwait Institute of Science & Technology, Kuwait), Nov. 2017.

45. M. M. Ali, "The Dynamic Behavior of Polyurea Composites Subjected to High Strain Rate Loading", (FDA- Office of Science) Jan. 2018.

46. Han Zhou, "Active Non-Reciprocal Acoustic Metamaterials ", April 2022.

PAPER & PROPOSAL REVIEWER

ASME Journal of Vibration & Acoustics

ASME Journal of Control
Journal of Sound & Vibration
Journal of SMART Structures
Journal of Intelligent Materials
Journal of Composite Engineering
Journal of Vibration and Control
Journal of Shock and Vibration
National Science Foundation
Army Research Office
NASA

RESEARCH FACILITIES

Smart Materials and Structures Research *Center: (Rm 2132 Eng. Bldg. – 1500 sq. ft.)*

The center houses a Photo-mechanics Laboratory which has a wide assortment of fiber optic instrumentation and components, such as four fusion splicers, two optical spectrum analyzers, one optical time domain reflectometer (OTDR), several power meters, one erbium doped fiber amplifier (EDFA), eight laser drivers/thermoelectric cooler controllers, many couplers, modulators, photo-detectors, etc. Chief among the capabilities is a Bragg grating fabrication facility center around a frequency doubled argon ion laser. The Laboratory has also a 22 Kip servo-hydraulic testing frame with hydraulic grips and personal computer based system controller. The computing capability in the Laboratory is provided by a networked system of 4 SUN workstations and 10 personal Pentium computers.

CURRENT GRADUATE STUDENTS

Name	PhD	Year Degree Expected	Support	Qualifying Exam	Ph.D. Proposal
1. Miead Nikfarjam	x	Aug. 2024	GRA	Yes	Yes
2. Ibrahim Nayfeh	x	Aug. 2027	TA	Not Yet	Not Yet

PROFESSIONAL SERVICES

- UAE – National Research Foundation – Proposal Review Committee (2008-Now)
- Qatar - National Research Foundation – Proposal Review Committee (2008-Now)
- King Abdulalah University of Science & Technology (KAUST) Scholarship Committee (2009-now)
- Accreditation Team for Aramco Professional Educational Programs (2008- Now)

- ASME National Honors & Award Committee (Edwin Church Award, 1993-2002)
- Chair of Smart Structures & Integrated Systems Conf., San Diego, CA, March 2003.
- Co-Chair of Smart Structures & Integrated Systems Conf., San Diego, CA, March 2002.
- Chair of Undersea Weapons Simulation Based Conference, Univ. of MD, June 2001.
- Organizing Committee of Smart structures & Materials Conference (1994-Now)
- Organizing Committee of Adaptive structures & Materials Conference (1998-Now)
- Organizing Committee of Inter-Noise Conference 2002
- Chair of Sessions over hundred sessions.
- Guest Editor of Special Issue of Journal of Vibration & Control on "Active Constrained Layer Damping Treatments", Sept. 2002.
- NSF Review Panel, Career Program, Sept. 2000
- NSF/Oak Ridge Scholarship Review Panel**,** Feb. 2000.
- Keynote Speaker of ICCC-7 Composites Conf., Denver, Colorado, July 2000

UNIVERSITY & DEPARTMENTAL COMMITTEES

- Chair of Best Dissertation Award Committee (2013)
- Chair of Dept. Ad-Hoc Committees for Promotion of Dr. Nikhil Chopra (2012)
- Chair of Search Committee of Fire Protection Engineering Faculty (2011)
- Chair of Self-Study Committee of Mechanical Engineering Department (2011)
- Graduate Program Committee of Mechanical Engineering Department (2010-Now)
- University Graduate Council (2000- 2002)
- University Program and Curriculum Committee of Graduate Council (2000-Now)
- University Instrumentation Development Review Committee (2000-now)
- College Teaching Award Committee (2000-2002)
- Chair, George Dieter Professorship Committee
- Chair, Alfred Gessow Professorship Committee
- Chair, College Faculty Affairs Committee
- Chair, Committee for Smart Systems Lab. in Kim's Bldg.
- Member of College Salary Review Committee (2000)
- Member of Department Salary Review Committee (1999-2001)
- Chair of Dept. Ad-Hoc Committees for Promotion of Drs. Balachandran and Sirkis.
- Member of Dept. Ad-Hoc Committees for Promotion of Drs. P. Mead, B. T. Han, M. Natishan, and G. Zhang**.**
- Chair, Departmental Teaching Enhancement Committee (1999-2000).
- Member, Departmental Tenure Review Committee (1999).

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