

Dr. Bar-Cohen Publications

CO-EDITED & CO-AUTHORED BOOKS (AND RELATED CHAPTERS)

1. Y. Bar-Cohen (Volume Editor and author/co-author of 8 chapters and subchapters), "Automation, Miniature Robotics and Sensors for Nondestructive Evaluation and Testing," Volume 4 of the Topics on NDE (TONE) Series, American Society for Nondestructive Testing, Columbus, OH, ISBN 1-57117-043 (2000), 481 pages.
 - 1.1. Y. Bar-Cohen, "Introduction," Chapter 1, *ibid*, pp.1-14.
 - 1.2. Y. Bar-Cohen, "Background," Section 3.1, of Chapter 3 "Crawlers and Portable Scanners," *ibid*, pp. 49-52
 - 1.3. Y. Bar-Cohen and P. Backes, "Robotic crawler with open architecture," Section 3.2, Chapter 3 "Crawlers and Portable Scanners," *ibid*, pp. 43-59.
 - 1.4. Y. Bar-Cohen, "Sensors for NDE - Review," Section 4.1, Chapter 4 "Sensors," *ibid*, pp. 103-118.
 - 1.5. S. Sherrit Y. Bar-Cohen, and X. Bao, "Ultrasonic Materials, Actuators and Motors (USM)," Section 5.2, Chapter 5 "Actuators," *Ibid*, pp. 215-228
 - 1.6. Y. Bar-Cohen, and S. Leary, "Electroactive polymer (EAP) Actuators," Section 5.3, Chapter 5 "Actuators," *ibid*, pp. 233-245
 - 1.7. Y. Bar-Cohen, "Robotics and Automatic NDE," Section 10.1, Chapter 10: "Future Trends in Robotics and Automated NDE," *ibid*, pp. 452-452.
 - 1.8. Y. Bar-Cohen, C. Mavroidis, C. Pfeiffer, C. Culbert and D. F. Magruder, "Robotics and Automatic NDE," *ibid*, Section 10.3, Chapter 10: "Future Trends in Robotics and Automated NDE," pp. 461-467.

2. Y. Bar-Cohen (Book Editor and author/(co)author of 5 of the 21 chapters), "Electroactive Polymer (EAP) Actuators as Artificial Muscles - Reality, Potential and Challenges," **2nd Edition** (the 1st Edition was published in 2001),, ISBN 0-8194-5297-1, SPIE Press, Vol. PM136, (March 2004), 765 pages
http://spie.org/x648.xml?product_id=547465&search_text=bar-cohen&category=Press
 - 2.1 Y. Bar-Cohen, "EAP History, Current Status and Outlook," Topic 1, Chapter 1, pages 3-50
 - 2.2 Y. Bar-Cohen, V. Olazábal, J. Sansiñena, and J. Hinkley, "Processing and Support Techniques," Topic 6, Chapter 14, pages 431-463
 - 2.3 S. Sherrit, X. Bao and Y. Bar-Cohen, "Methods of Testing and Characterization," Topic 6, Chapter 15, pages 467-526
 - 2.4 C. Mavroidis, Y. Bar-Cohen, and M. Bouzit, "Haptic Interfacing via ElectroRheological Fluids," Topic 7, Chapter 19, pages 659-685
 - 2.5 Y. Bar-Cohen, "EAP Applications, Potentials, and Challenges," Topic 8, Chapter 21, pages 709-756

3. Y. Bar-Cohen and C. Breazeal (Book Editors /(co)author of 4 of the 11 chapters), "Biologically-Inspired Intelligent Robots," SPIE Press, Bellingham WA, Vol. PM122, ISBN 0-8194-4872-9 (May 2003), 393 pages. Outline details on: <http://ndeaa.jpl.nasa.gov/ndeaa-pub/Biomimetics/Biomimetic-robots-outline.pdf>
 - 3.1 C. Breazeal, MIT; and Y. Bar-Cohen, "Biomimetic Intelligent Robots – Introduction," Chapter 1, *ibid*, pp. 1-24.

- 3.2 K. Meijer, Y. Bar-Cohen, and R. Full, "Biological Inspiration For Muscle Like Actuators of Robots," Chapter 2, *ibid*, pp. 25-45.
 - 3.3 A. Fisch, C. Mavroidis, Y. Bar-Cohen, and J. Melli-Huber, "Haptic and Telepresence Robotics" Chapter 4, *ibid*, pp. 73-101.
 - 3.4 Y. Bar-Cohen, and C. Breazeal, "Outlook for the Technology of Intelligent Biomimetic Robots," Chapter 11, *ibid*, pp. 351-380.
4. Y. Bar-Cohen, (Book Editor / author of 3 chapters out of 20), "Biomimetics - Biologically Inspired Technologies," CRC Press, Boca Raton, Florida, ISBN 0849331633, (Nov. 2005), 527 pages.
 - 4.1 Y. Bar-Cohen, "Introduction to Biomimetics: The wealth of inventions in Nature as an inspiration for humans innovation," Chapter 1, *ibid*. pp. 1-40.
 - 4.2 Y. Bar-Cohen, "Artificial muscles using Electroactive Polymers (EAP)," Chapter 10, *ibid*, pp. 267-290.
 - 4.3 Y. Bar-Cohen, "Biomimetics - Reality, Challenges, and Outlook," Chapter 20, *ibid*, pp.495-513.
 5. Y. Bar-Cohen and D. Hanson, "The Coming Robot Revolution - Expectations and Fears About Emerging Intelligent, Humanlike Machines," Springer, New York, NY, ISBN: 978-0-387-85348-2, (Feb. 2009), 174 pages
 6. Y. Bar-Cohen and K. Zacny (Book Editors/ coauthor of 4 chapters out of 10), "Drilling in Extreme Environments - Penetration and Sampling on Earth and Other Planets," Wiley – VCH, Hoboken, NJ, ISBN-10: 3527408525, ISBN-13: 9783527408528, (July 2009) 827 pages.
 - 6.1 Y. Bar-Cohen and K. Zacny, "Drills as tools for media penetration and sampling," Chapter 1, *ibid*
 - 6.2 K. Zacny, Y. Bar-Cohen, K. Davis, P. Coste, G. Paulsen, S. Sherrit, J. George, B. Derkowski, S. Gorevan, D. Boucher, J. Guerrero, T. Kubota, B. J. Thomson, S. Stanley, P. Thomas, N. Lan, C. McKay, T. C. Onstot, C. Stoker, B. Glass, S. Wakabayashi, L. Whyte, G. Visentin, E. Re, L. Richter, M. Badescu, X. Bao, R. Fincher, T. Hoshino, P. Magnani, and C. Menon "Extraterrestrial Drilling and Excavation," Chapter 6, *ibid*
 - 6.3 K. Zacny, A. Diaz-Calderon, P.G. Backes, K. Davis, C. Leger, E. Mumm, E. Tunstel, J. Herman, G. Paulsen, and Y. Bar-Cohen, "Planetary sample handling and processing ," Chapter 7, *ibid*
 - 6.4 Y. Bar-Cohen and K. Zacny, "Drilling capabilities, challenges and future possibilities," Chapter 10, *ibid*

CHAPTERS IN TOPICAL BOOKS

1. Y. Bar-Cohen, "Non-Destructive Testing of Composite Materials," in Composite Materials 1972-1982 (Center for Technology and Interdisciplinary Forecasting, Tel-Aviv University, Israel, (1972), pp. 137-164.
2. Y. Bar-Cohen, "Ultrasonic NDE of Composites - A Review," Solid Mechanics Research for Quantitative NDE, J. D. Achenbach, and Y. Rajapakse (Eds.) Martinus Nijhoff Publishers, Boston, (1987), pp. 187-201.
3. A. K. Mal, M. R. Karim and Y. Bar-Cohen, "Determination of the Properties of Composite

- Interfaces by an Ultrasonic Method," Science of Composite Interfaces, R.G. Brand, et al (Ed.), Elsevier Science Publishers, London (1990) pp. 155-164.
4. A. K. Mal, M. R. Karim, and Y. Bar-Cohen, "Determination of Dynamic Elastic Moduli of Composite Materials by Leaky Lamb Wave Experiment," International Advances in NDT, Vol. 16, W. J. McGonagle (Ed.), Gordon and Breach Science Publishers, Philadelphia, (1991) pp. 77-101.
 5. M. Shahinpoor, Y. Bar-Cohen, J. O. Simpson and J. Smith, "Ionic Polymer-Metal Composites (IPMC) As Biomimetic Sensors and Actuators-Artificial Muscles," Field Responsive Polymers, ACS Symposium, Series 726, I.M. Khan and J.S. Harrison, (Eds) Oxford University Press, (1999) pp 25-50.
 6. Y. Bar-Cohen, "Artificial Muscle using Electroactive-Polymer (EAP) as Actuation Materials," Chapter I.2.5 in Y. Osada (Ed.), Soft Actuators, NTS Inc., Tokyo, Japan (October 4, 2004) pp. 136-155 (in Japanese).
 7. Y. Bar-Cohen, "Electroactive polymers as artificial muscles," Chapter 4.0 of Compliant Structures in Nature and Engineering, C. H. M. Jenkins (Ed), WIT Press, Southampton, UK, ISBN 1-85312-941-0, (Sept. 2005), pp. 69-81
 8. A. Vinogradov, J. Su, Y. Bar-Cohen, C. H. M. Jenkins and Eric Pollard, "Functional Materials for Smart Gossamer Spacecraft," in C. H. M. Jenkins (Ed), Recent Advances in Gossamer Spacecraft, *Progress in Astronautics and Aeronautics Series*, 212, AIAA Press, ISBN: 1-56347-777-7, (2006) pp. 165-190.
 9. K. Zacny and Y. Bar-Cohen, "Drilling and excavation for construction and in situ resource utilization," Chapter 15 in V. Badescu (Ed.), Mars: Prospective Energy and Material Resources, Springer-Verlag, Berlin, Germany (Submitted for publication).
 10. Y. Bar-Cohen, "Electroactive Polymers," Chapter 9 in K. Uchino (Ed.), The Science and Technology of Advanced Piezoelectric Materials, Woodhead Publishing Limited, Cambridge, UK (Submitted for publication).
 11. Y. Bar-Cohen, "Biologically Inspired Technologies for Aeronautics," Chapter 4 in T. M. Young (Ed.), Innovation in Aeronautics, Woodhead Publishing Limited, Cambridge, UK (Submitted for publication).
 12. Y. Bar-Cohen, "Humanlike robots - capabilities and challenges to the ultimate goal of biomimetics," Chapter 3 in R. Allan (Ed.), Bulletproof Feathers – A fascinating guide to biomimetics, the art and science of stealing nature’s design solutions, The Ivy Press Limited, East Sussex, UK (Submitted for publication).
 13. Y. Bar-Cohen, "Electroactive Polymers (EAP) as actuators for aerospace engineering," Chapter 4.3.7 in Section 4.3: "Active Materials," of R. Blockley and W. Shyy, Encyclopedia of Aerospace Engineering, John Wiley & Sons, Ltd. Hoboken, NJ (Submitted for publication).

CHAPTERS OF HANDBOOK

1. Y. Bar-Cohen and A. K. Mal, "Ultrasonic Inspection," Vol. 17, 9th Edition, Metals Handbook, NDE and Quality Control, ASM International, Metals Park, OH, 1989, pp. 231-277.
2. G. R. Robertson, C. W. Miles, and Y. Bar-Cohen, "Ultrasonic Technology: Systems and Applications," Chapter 18, Non-Topographic Photogrammetry, 2nd Edition, H. M. Karara (Ed.), The American Society for Photogrammetry and Remote Sensing, (1989), pp. 305-320.
3. Y. Bar-Cohen and A. K. Mal, "End Product NDE of Adhesive Bonded Composite Joints,"

ASM International Handbook, Vol. 3, Adhesive and Sealant, Section 9: NDE and QA, Subsection 4, (1990), pp. 777-784.

4. Y. Bar-Cohen, "Nondestructive Inspection and Quality Control," ASM International Handbook, Vol. 3, Adhesive and Sealant, Section 9, (1990), pp. 727-798.
5. Y. Bar-Cohen, "Ultrasonic Pulse-Echo Immersion Techniques," Nondestructive Testing Handbook, Vol. 7: Ultrasonic Testing, Section 8, B. Green Jr. (Ed.), American Society for NDT, Columbus, OH (1991) pp. 220-266.
6. Y. Bar-Cohen, D. R. Johnson, A. K. Mal, and R. McClung, "Ultrasonic Testing Applications in Advanced Materials and Processes," Nondestructive Testing Handbook, Vol. 7, Section 15, *ibid*, pp. 506-549.
7. Y. Bar-Cohen, et al, "Special Acoustic Nondestructive Testing Methods", Sect. 5, Vol. 9, ASNT Nondestructive Testing Handbook, "Special NDT Methods", R. K. Stanley and P. Moore (Eds.), American Society for Nondestructive Testing, Columbus, OH (1995), pp. 119-301.
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9. Y. Bar-Cohen, "Electroactive polymers as artificial muscles - capabilities, potentials and challenges," Section 10 in Chapter 8, "Motion" paper #134, Handbook on Biomimetics, Yoshihito Osada (Chief Ed.), publisher: NTS Inc., Sept. 2000, pp. 936-950 (in Japanese).
10. Y. Bar-Cohen, R. Bossi, D. Bowles, T. Drake, D. Emaheiser, G. Georgeson, E. Henneke, R. Engelbart, S.-S. Lih and A. K. Mal, S. Shepard, and J. Tucker, "Quality Assurance," "Nondestructive Evaluation," ASM Handbook, Vol. 21: Composites, ASM International, ISBN: 0-87170-703-9, (2001), pp. 699-725.
11. Y. Bar-Cohen, "Focused Beam Immersion Techniques," Chapter 3, Part 5, in the Nondestructive Testing Handbook, Vol. 7, "Ultrasonic Testing", P. O. Moore (Ed.), 3d Edition, ASNT Press, (2007) pp. 95-99.
12. Y. Bar-Cohen, B. B. Brenden, and G. P. Singh, "Ultrasonic Scanning," Chapter 7 in the Nondestructive Testing Handbook, Vol. 7, "Ultrasonic Testing", P. O. Moore (Ed.), 3d Edition, ASNT Press, (2007) pp. 261-303.
13. Y. Bar-Cohen, A. K. Mal, and Donald J. Roth, "Ultrasonic Testing Applications in Advanced Materials," Chapter 9 in the Nondestructive Testing Handbook, Vol. 7, "Ultrasonic Testing", P. O. Moore (Ed.), 3d Edition, ASNT Press, (2007) pp. 357-397.

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1. M. Meron, Y. Bar-Cohen, and O. Ishai, "Nondestructive Evaluation of Degradation in Glass-Reinforced Plastics as a Result of Environmental Effects," J. Testing and Evaluation, Vol. 5, No. 5 (1977), pp. 394-396.
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3. Y. Bar-Cohen, U. Arnon, and M. Meron, "Defect Detection and Characterization in Composite Sandwich Structures by Ultrasonics," SAMPE J., Vol. 14, No. 1 (1978), pp. 4-8.
4. A. Arieli, Y. Bar-Cohen, and A. Blas, "The Effect of High Temperature Oxidation on the Eddy-Current Conductivity of Ti-6Al-4V Alloy," Materials Evaluation, Vol. 36, No. 6 (1978), pp. 62-64.

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6. Y. Bar-Cohen, B. Ben-Joseph, and E. Harnik, "Schlieren Ultrasonic Visualization of Delaminations in Composite Material," Ultrasonics, Vol. 17, No. 1 (1979), pp. 9-10.
7. Y. Bar-Cohen, "Nondestructive Testing of Microwelds Using Laser Induced Shock Waves," British J. for Nondestructive Testing, Vol. 21, No. 2 (1979), pp. 76-78.
8. Y. Bar-Cohen, E. Harnik, M. Meron, and R. Davidson, "Ultrasonic NDE Method of Detection and Identification of Defects in Filament Wound Glass Fiber Reinforced Plastic Tubes," Materials Evaluation, Vol. 37, No. 8 (1979), pp. 51-55.
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 32. Y. Bar-Cohen, "Emerging NDE Technologies and Challenges at the Beginning of the 3rd Millennium – Part II." Material Evaluation, Vol. 58, No. 2, February 2000, pp. 141-150.
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 54. Y. Bar-Cohen (Guest Editor) , "Focus issue on Biomimetics using electroactive polymers as artificial muscles," *BioInspiration & Biomimetics Journal*, ISSN 1748-3182, Vol. 2, No. 2, (June 2007) pp. 1-3.
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 57. Y. Bar-Cohen, "EAP actuators for biomimetic technologies with humanlike robots as one of

the ultimate challenges,” J. of Advances in Science and Technology Vol. 61 (2008) pp 1-7

GUEST EDITOR OF SPECIAL ISSUES IN TECHNICAL JOURNALS

1. Y. Bar-Cohen, K. J Kim, H. R. Choi and J. D. W. Madden, Guest Editors of a Special Issue of The Journal of Smart Materials and Structures on Electroactive Polymer Materials, including 15 papers and preface, Volume 16, Number 2, (April 2007)
<http://www.iop.org/EJ/toc/0964-1726/16/2>
2. Y. Bar-Cohen, Special issue on Artificial Muscles in the Journal of Journal of Bioinspiration & Biomimetics, including 6 papers and preface, Vol. 2, No. 2 (June 2007)
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3. Y. Bar-Cohen and Q. Zhang, “Electroactive Polymers (EAP) actuators and Sensors,” Materials Research Society (MRS) Bulletin Theme Topic, Vol. 33, No. 3, March 2008.

EDITOR/CO-EDITOR OF CONFERENCE PROCEEDINGS

SPIE

EAPAD

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 63. X. Bao, Y. Bar-Cohen, Z. Chang, S. Sherrit and R. Stark, “Ultrasonic/Sonic Impacting Penetrator (USIP),” NTR Docket No. 41666, submitted on December 22, 2004. NASA Tech Briefs, Vol. 32, No. 4, 2008, pp. 58, 60.
 64. S. Sherrit, M. Badescu, Y. Bar-Cohen, Z. Chang, X. Bao, “Portable Rapid and Quiet Drill (PRAQD),” NTR Docket No. 42131, submitted on April 8, 2005. Patent disclosure submitted on Feb. 2006. NASA Tech Briefs, Vol. 31, No. 10, 2007, pp. 36, 38]
 65. J. Aldrich, S. Sherrit, M. Badescu Y. Bar-Cohen, X. Bao, and Z. Chang, “Controller using extremum-seeking to drive heavily perturbed electroactive actuators at resonance” NTR Docket No. 43519, submitted on February 9, 2006. NASA Tech Briefs, Vol. 32, No. 4, 2008, pp. 40, 42
 66. S. Sherrit, Y. Bar-Cohen, M. Badescu, X. Bao, Z Chang, C. Jones, J. Aldrich, “Compact Non-Pneumatic Powder Sampler (NPPS),” NTR Docket No. 43614, submitted on February 23, 2006. Tech Briefs, Vol. 32, No. 7, 2008, pp. 56-57
 67. S. Sherrit, X. Bao and Y. Bar-Cohen, “Acoustic Transducer performance Enhancement using Impedance Matching Layers consisting of Solid Micro Horn Array (SMIHA) ,” NTR Docket No. 43907, submitted on May 4, 2006.
 68. S. Sherrit, M. Badescu, Y. Bar-Cohen, J. Barengoltz, and V. Heckman, “Piezoelectric Bolt/Pin Shearing Device,” NTR Docket No. 43977, submitted on May 15, 2006.
 69. M. Badescu, S. Sherrit, Y. Bar-Cohen, X. Bao, and S. Kassab, “Ultrasonic/Sonic Rotary-Hammer Drill (USRoHD),” NTR Docket No. 44765, submitted on December 19, 2006.
 70. S. Sherrit, B. Doty, X. Bao, Y. Bar-Cohen, M. Badescu, and Z. Chang, “Highly efficient wireless transmission of high power and signals through solid walls using Acoustic-Electric feed-through mechanism,” NTR Docket No. 44928, submitted on February 13, 2007. A provisional patent was submitted on April 23, 2007. NASA Tech Briefs, Vol. 32, No. 9, 2008, pp. 81
 71. Y. Bar-Cohen, M. Badescu, T. Iskenderian, S. Sherrit, X. Bao, and R. Lindemann, “Penetrator with foldable bit for packing in a compact configuration and unfolding for deep drilling,” NTR Docket No. 45289, submitted on July 16, 2007.
 72. Y. Bar-Cohen, A. K. Olorunsola, M. Badescu, X. Bao, and S. Sherrit, “Simultaneous sealing and external surface sterilization of containers with samples,” NTR Docket No. 45610, submitted on September 25, 2007. NASA Tech Briefs, Vol. 32, No. 12, 2008, pp. 38, 40.
 73. S. Sherrit, M. Badescu, and Y. Bar-Cohen, “Miniature Low-Mass Drill Actuated by Flexensional Piezo-Stack (DAFPiS)” NTR Docket No. 45857, Submitted on January 8, 2008.
 74. Y. Bar-Cohen, M. Badescu, and S. Sherrit, “Rapid Rotary-Percussive Auto-Gopher for deep subsurface penetration and sampling,” NTR Docket No. 45949, Submitted on February 20, 2008. NASA Tech Briefs, Vol. 33, No. 8, 2009, pp. 38-40.
 75. M. Badescu, Y. Bar-Cohen, P. Backes, S. Sherrit, X. Bao, and J. S. Scott, “Sample sealing system and method of sealing for sample return missions,” NTR Docket No. 46089,

Submitted on April 1, 2008.

76. Y. Bar-Cohen, X. Bao, S. Sherrit, M. Badescu, S.-S. Lih, "High speed transport of fluid drops and solid particles via surface acoustic waves (SAW) using no physically moving parts," NTR Docket No. 46252, Submitted on May 28, 2008.
77. S. Sherrit, J. Scott, Y. Bar-Cohen, M. Badescu and X. Bao, "Low frequency vibrations of asymmetric grooved surfaces for particles transport, size sorting and sampling," NTR Docket No. 46334, Submitted on June 26, 2008.
78. J. Aldrich, Y. Bar-Cohen, S. Sherrit, M. Badescu, X. Bao, and J. Scott, "Percussive Augmenter of Rotary Drills (PARoD) for Operating as a Rotary-Hammer Drill," NTR Docket No. 46550, Submitted on September 11, 2008.
79. S. Sherrit, A. Trebi-Ollennu, R. Bonitz and Y. Bar-Cohen, "Miniature Piezoelectric Macro Mass Balance," NTR Docket No. 47161, Submitted on June 15, 2009.
80. S. Sherrit, X. Bao, M. Badescu, and Y. Bar-Cohen, "Single Piezo-Actuator Rotary-Hammering (SPaRH) Drill," NTR Docket No. 47216, Submitted on July 21, 2009.

CLASS 1 NASA TECH BRIEF AWARDS

1. NPO-18729 - "Nondestructive Determination of Elastic Properties of Composite materials Using Leaky Lamb Wave Measurements," May 26, 1993
2. NPO-18730 - "Nondestructive Detection and Monitoring of Corrosion," July 13, 1993
3. NPO-18758 - "Automated Quality Assurance of Integrally Fastened Levers of Can Openers" October 7, 1993
4. NPO-18908 - "A Pulsed Ultrasonic Technique for Determination of the Elastic Constants of Fiber Reinforced Constants," Aug 18, 1993
5. NPO-19260 - "C-scan using Portable Laser Ultrasonic and Thermographic Inspection System (PLUTIS) for NDE of Large Areas," Sept. 13, 1995
6. NPO-19303 - "Mirror Articulation Using Bimorph Actuator", October 21, 1994
7. NPO-19312 - "Triple Cantilever Articulation Device", May 22, 1996.
8. NPO-19355 - "Remotely Interrogatable Strain Gage Imbedded in Composites," May, 10, 1996
9. NPO-19737 - "Piezoelectric Flexural Traveling Waves Pump", August 28, 1996
10. NPO-19792 - "Pump Using Pistons and Valve Made of Electroactive Actuators", Aug. 28, 1996
11. NPO-19835 - "High Torque Ultrasonic Motor," Aug.28, 1996
12. NPO-19847 - "Multifunction Automated Crawling System (MACS)", Aug. 28, 1996.
13. NPO-20017 - "Electroactive Muscle Actuators (EMA)," Apr. 22, 1997.
14. NPO-20103 - "Electroactive Polymer Gripping End-Effector," Nov 16, 1997.
15. NPO-20229 - "Magnetically Attached Multifunction Maintenance Rover (MAGMER)," July 15, 2004
16. NPO-20268 - "Multifunction Dexterous Boro-Robot (MDBR)," April 1, 1998
17. NPO-20371 - "Surface Wiper Actuated by Electroactive Polymers (SWEP)," July 1, 1998
18. NPO-20393 - "Robotic Articulation Using Electroactive Actuators" Oct. 1, 1998
19. NPO-20399 - "Ultrasonic Detector and Identifier of Landmines (UDIL)," July 1, 1998.
20. NPO-20400 - "Quasi Real-Time leaky Lamb Wave (QRT-LLW) Test System Using a Multiplexed Setup," July 1, 1998,
21. NPO-20410 - "Active Reading Display for Blind (ARDIB)," July 1, 1998

22. NPO-20613 - "Miniature Electro-Active Polymer Rake (MEAR) for Displacement of Particulate or Powdery Obstacles," October 13, 2000
23. NPO-20623 - "Early Detection of Ovarian Cancer Using Pulsed Ultrasonically induced Resonant Cavitation (PURC)," September 1, 1999
24. NPO-20632 - "Transcutaneous Spine Trauma and Disorders Treatment Using Ultrasonically Induced Confined Heat (ULICH) Zone," September 1, 1999
25. NPO-20642 - "Remote MEchanical MIRroring using Controlled stiffness and Actuators (MEMICA)," September 1, 1999
26. NPO-20735 - "High Precision Multi-DoF Surface Acoustic Wave Motors (USAM)," Dec. 1, 1999
27. NPO-20856 - "Ultrasonic/Sonic Driller/Corer (USDC) With Integrated Sensors," April 28, 1999
28. NPO-20859 - "Structurally Integrated High Precision Multi-DoF Actuators (SIHMA)," Nov 21, 2003
29. NPO-21063 - "Ultrasonic Paint Loosening and Real-Time Thickness Gauging (UPL-RTG) System for enhancement of Waterjet Paint Stripping," April 2, 2001
30. NPO-21064 - "Ultrasonically Induced Plumbing-Free switchable Multi-Fountains and Fog (ULIFOG)," May 25, 2001
31. NPO-21174 - "Electroactive Polymer Actuator with Selectable Deformation (EAPAS)," August 31, 2001
32. NPO-30291 - "Ultrasonic/Sonic Mechanism of Deep Drilling (USMOD)," Aug. 5, 2003.
33. NPO-30370 - "Ultrasonic/ Sonic Vibrating/Rotating Tool," June 23, 2003
34. NPO-30403 - "Ultrasonic Rock Abrasion Tool (URAT)," May 1, 2006
35. NPO-30415 - "Piezopump – A Miniature Ring-Shape Peristaltic Pump," Oct. 9, 2003
36. NPO-30487 - "Shape controlled mirrors/antennas (SCoMA) using biologically inspired actuators," June 23, 2003.
37. NPO-30489 - "Novel Ultrasonic Horns for power ultrasonics," Sept. 12, 2003
38. NPO-30558 - "An Exoskeleton with On-Demand Controlled Resistivity and Operability (ExODECRO) Using ERF-Based Elements," May 29, 2004
39. NPO-30587 - "Controlled gossamer structures deployment and stability using ERF," June 19, 2003.
40. NPO-30640 - "Sample Preparation, Acquisition, Handling and Delivery (SPAHD) System using the Ultrasonic/Sonic Driller/Corer (USDC) with Interchangeable Bits," April 19, 2004.
41. NPO-30682 - "Ultrasonic Crusher for Crushing, Milling, and Powdering," May 3, 2004.
42. NPO-30694 - "Compact Solid-State Ferroelectric-Based Source (SSFBS) of Charged Particles and Radiation," May 17, 2004.
43. NPO-30884 - "Sonar Lenses with Controllable Directivity using ERF (SLCoDE)," March, 2004.
44. NPO-40275 - "Single-layer electroactive polymer mirror with controllable focus," June 12, 2004.
45. NPO-40564 - "Ultrasonic/Sonic Rock Powdering Sampler and Delivery Tool," Nov. 4, 2004.
46. NPO-40771 - "Ultrasonic/Sonic Jackhammer (USJ)," Nov. 12, 2004
47. NPO-42131 - "Portable Rapid and Quiet Drill (PRAQD)," March 16, 2006.
48. NPO-43519 - "Controller using extremum-seeking to drive heavily perturbed electroactive actuators at resonance," November 2, 2006
49. NPO-43614 - "Compact Non-Pneumatic Powder Sampler (NPPS)," November 16, 2006.

50. NPO-40949 - "Dog Bone Piezoelectric Actuation Horns," January 11, 2007.
51. NPO-41157 - "Efficient Electromechanical Network Model for Wireless Acoustic-Electric Feed-throughs (WAEF)," January 26, 2007
52. NPO-40132 - "Thermocouple-on-the-bit a real time sensor of the hardness of drilled objects," February 8, 2007
53. NPO-43907 - "Acoustic Transducer performance Enhancement using Impedance Matching Layers consisting of Solid Micro Horn Array (SMIHA)," May 4, 2007.
54. NPO-43977 - "Piezoelectric Bolt/Pin Shearing Device," Sept. 7, 2007
55. NPO-44928 - "Highly efficient wireless transmission of high power and signals through solid walls using Acoustic-Electric feed-through mechanism," Dec. 15, 2007
56. NPO-40827 - "Self-Mountable and Extractable Ultrasonic/Sonic Anchor (U/S-Anchor)," March 7, 2008
57. NPO-41666 - "Ultrasonic/Sonic Impacting Penetrator (USIP)," March 25, 2008
58. NPO-45289 - "Penetrator with foldable bit for packing in a compact configuration and unfolding for deep drilling," April 2, 2008
59. NPO-44765 - "Ultrasonic/Sonic Rotary-Hammer Drill (USRoHD)," May 19, 2008
60. NPO-45610 - "Simultaneous sealing and external surface sterilization of containers with samples," July 21, 2008
61. NPO-45857 - "Miniature Low-Mass Drill Actuated by Flexensional Piezo-Stack (DAFPiS)" September 11, 2008.
62. NPO-45949 - "Rapid Rotary-Percussive Auto-Gopher for deep subsurface penetration and sampling," December 2, 2008.
63. NPO-46089 - "Sample sealing system and method of sealing for sample return missions," February, 6, 2009
64. NPO-46334 - "Low frequency vibrations of asymmetric grooved surfaces for particles transport, size sorting and sampling," April, 13, 2009

NASA SPACE ACT AWARDS FOR PATENTS

1. NPO - 19737 "Piezoelectric Flexural Traveling Waves Pump," April 17, 2002.
2. NPO - 19792 "Pump Using Pistons and Valves Made of Electroactive Actuators," April 17, 2002.
3. NPO -19847 "Multifunction Automated Crawling System (MACS)," April 17, 2002.
4. NPO -20231 "Ultrasonic System for Rapid Material Stiffness Constants Determination (RMSCD)," April 17, 2002.
5. NPO - 20400 "Quasi Real-Time Leaky Lamb Wave Test System Using a Multiplexed Setup," April 17, 2002.
6. NPO - 19835 "High Torque Ultrasonic Motor System (UTMOS)," March 17, 2003.
7. NPO - 20371 "Surface Wiper Actuated By Electroactive Polymers (SWEP)," Oct. 31, 2003.
8. NPO - 30403 "Ultrasonic Rock Abrasion Tool (URAT)," April 19 2007
9. NPO - 41024 "Simultaneous Separation, Seaming and Sealing using Brazing (S3B) for Sample Containerization and Planetary Protection," April 19 2007.
10. NPO - 20017 "Electroactive Muscle Actuators (EMA)," Major Award, October 28, 2008

ACADEMIC ACTIVITY

PARTICIPATED IN Ph.D. REVIEW COMMITTEES

PARTICIPATED IN Ph.D. REVIEW COMMITTEES

- Ching-Chung Yin, "Guided Waves in Fiber-Reinforced Composite Laminates" Ph.D., UCLA, June 13, 1990
- Shyh-Shiuh Lih, "Response of Composite Laminates to Dynamic Surface Loads," Ph.D., UCLA, May 21, 1992
- Yinghui Liu, "Design and Modeling of A Planetary Robotic Drilling Systems," Ph.D., Department of Mechanical & Industrial Engineering, Northeastern University, Boston, MA. Advisor is Prof. C. Mavroidis, July 17, 2007.
- Zhang Lei, "Actuation characteristics of piezoelectric materials and ionic polymer-metal composites for biomedical engineering applications," School of Civil and Environmental Engineering, Nanyang Technological University, Nanyang, Singapore, External Reviewer of thesis, Dec. 2007.

TEACHING CLASSES AT UCLA

Taught several lab courses at the Mechanical and Aerospace Engineering

JPL SUMMER FACULTY FELLOWS

Hired two academic scholars as JPL Summer Faculty Fellows

1993: Prof. Ajit K. Mal assisting in the NDE R&D

1994: Prof. Gregory Carman assisting in the Advanced Actuators R&D

FULL TIME EMPLOYEES (FTE)

Dr. Shyh-Shiuh Lih, Feb. 1995

Dr. Xiaoqi Bao, May 20, 1997

Dr. Zensheu Chang, March 23, 1998

Dr. Stewart Sherrit, April 15, 2001

Dr. Mircea Badescu, Feb. 7, 2005

FORMER FTE

Dr. Jack Aldrich, June 5, 2006 to November 3, 2008

Ayoola K Olorunsola, July 26, 2004 till June 12, 2007

STUDENTS AND POST-DOCTORATES ADVISOR AT JPL

Dr. Atish Sen, "Piezoelectric Actuators," June 1993 - Sept. 1994

Dr. Tianji Xue, "Electroactive Polymers", June 1996 - April 30, 1998

Dr. Sean Leary, "Electroactive Polymers", March 1997 – July 12, 2000

Dr. Stewart Sherrit, "Ultrasonic/Sonic Drilling and Coring," Sept. 1998 – April 2001

Dr. José-María Sansiñena, "Electroactive Polymers", January 2000 – May 2001

Dr. Virginia Olazabal, "Electroactive Polymers", January 2000 – August 2001 (initially as a Research Affiliate and Caltech Postdoctoral Scholar from August 2000 to August 2001)

Dr. Mircea Badescu, USDC, Feb. 20, 2004 – Feb. 4, 2005

Dr. Jack Aldrich, Fast and Quiet Ultrasonic Drill, Nov. 28, 2004 – May 26, 2006

Academic Part Time (APT)

James Wincentzen, California Polytechnic University, Pomona, Nov. 17, 2003 to June 9, 2004

Randal Stark, California Polytechnic University, Pomona, June 21, 2004 to Feb. 18, 2005

Chris Jones, California Polytechnic University, Pomona, Feb. 7, 2005 to May 30, 2008.
James S. Scott, California Polytechnic University, Pomona, Nov. 13, 2006 to present

SURF Students

- 1 Stacey Walker – University of Texas at Dallas, June 1 to August 19, 1999. Shown on Channel One Network, November 15, 1999.
- 2 Lauren Wessel – Caltech, July - Sept 26, 2003
- 3 Vanessa Heckman - Caltech, June 20 to August 26, 2005

Student under the category of No-Fee Consultant

Sahar Maghsoudy-Louyeh, PhD Student from Penn State University, June 2, 2008 to July 31, 2008

NASA Space Grant Student

Stephen Kassab – Purdue University, June 12 to August 18, 2006

Will Biederman - Electrical Engineering student at the University of Washington, Seattle, June 11 to August 17, 2007

Andy Hedge – Mechanical Engineering, Cal Poly, CA, June 17 to August 24, 2008

Kate Boudreau - Senior in Mechanical Engineering, University of Idaho, June 17 to August 24, 2008

Scott Widholm - Mechanical Engineering, Cal Poly, CA, May 19 to Present

NASA Undergraduate Student Research Program (USRP)

Beck Chen – UCLA, Sept.2, 2009 to Dec. 15, 2009

Student Independent Research Intern (SIRI) Program

Philip Allen - - Mechanical Engineering, Cal Poly, CA., Sept. 16. 2009 to January 29, 2010

Minority Education Initiatives Interns

Ivan Munoz, UTEP, Summer 1997.

Lawrence Cole, Florida A&M University, Summer 1998 (May 4 to July 31, 1998) and 1999 (May 26 to July 30, 1999)

Leon Norris, Morehouse College, Summer 1998 (May 11 to July 17, 1998)

Tao Stettler, Summer 2001 (June 26, 2001 - August 25, 2001)

Jose Rivera, Summer 2001 (May 29 to July 24, 2001)

Sherman Hsu-Kuang Tu, California Polytechnic University, San Luis Obispo, Summer 2003 (June 16 - Aug. 29, 2003)

Byron D. Pershall, Faculty advisor, Southwestern Indian Polytechnic Institute (SIPI), Summer 2006 (June 19 - Aug. 25, 2006)

Dylan J Maho, Southwestern Indian Polytechnic Institute (SIPI), Summer 2006 (June 19 - Aug. 25, 2006)

Joel V Armour, Southwestern Indian Polytechnic Institute (SIPI), Summer 2006 (June 19 - Aug. 25, 2006)

Interns

Susan Bley - from June 14, 2004 to August 20, 2004

High School Students

Ana Gjesdal, senior student at Crescenta Valley High School, CA., June –Sept, 2000

Tao Stettler, ALVA student, June 26 to Aug. 25, 2001

TELE-CLASSES

“Artificial Muscles and Piezoelectric Actuators and Mechanisms,” JPL/NASA Learning Technologies Project, University of North Dakota Online Course, “Deep Space Exploration –Enabling Technologies,” Nov. 8, 2000.

SOCIETIES COURSES

Lead Instructor for the following classes

SPIE 6th Conference on Smart Materials – “Electroactive Polymers Actuators and Devices”, 1st
EAPAD, Newport Beach, CA, February 28, 1999

SPIE 7th Conference on Smart Materials – “Electroactive Polymers Actuators and Devices”, 2nd
EAPAD, Newport Beach, CA, March 5, 2000

SPIE 8th Conference on Smart Materials – “Electroactive Polymers Actuators and Devices”, 3rd
EAPAD, Newport Beach, CA, March 4, 2001

SPIE 11th Conference on Smart Materials – “Electroactive Polymers Actuators and Devices”, 6th
EAPAD, San Diego, Beach, CA, March 14, 2004

SPIE 12th Conference on Smart Materials – “Electroactive Polymers Actuators and Devices”, 7th
EAPAD, San Diego, Beach, CA, March 6, 2005

SPIE 13th Conference on Smart Materials – “Electroactive Polymers Actuators and Devices”, 8th
EAPAD, San Diego, Beach, CA, Feb. 26, 2006

SPIE 14th Conference on Smart Materials – “Electroactive Polymers Actuators and Devices”, 9th
EAPAD, San Diego, CA, March 18, 2007

SPIE 15th Conference on Smart Materials – “Electroactive Polymers Actuators and Devices”,
10th EAPAD, San Diego, CA, March 9, 2008

SPIE 16th Conference on Smart Materials – “Electroactive Polymers Actuators and Devices”,
11th EAPAD, San Diego, CA, March 8, 2009

MRS, Fall 99, Symposium FF - “Electroactive Polymers (EAP) as Emerging Actuators for
Devices and Robotic Applications,” Boston, MA, Nov. 28, 1999.

OTHER COURSES

PTI Course to employees of Texas Instrument, Dallas, TX. The course is entitled "Biomimetics
- Biologically Inspired Technology," October 24, 2005 [http://www.pti-
inc.com/Courses/biomimetics.html](http://www.pti-inc.com/Courses/biomimetics.html)

KEYNOTE/INVITED SPEAKER & BEST PAPERS

1. Y. Bar-Cohen, A. K. Mal, S.-S. Lih and Z. Chang "Composite materials stiffness determination and defects characterization using enhanced LLW dispersion data acquisition method," **Invited paper**, Proceedings of the SPIE's 6th Annual International Symposium on NDE of Aging Aircraft, Airports, and Aerospace Hardware III, Newport Beach, CA, 3-5 March 1999, paper 3586-35, pp. 250-255.

2. Y. Bar-Cohen, "Electroactive Polymers as Artificial Muscles - Capabilities, Potentials and Challenges," **Keynote Presentation**, Robotics 2000 and Space 2000. Albuquerque, NM, USA, February 28 - March 2, 2000 ISBN 0-7844-0476-3, pp. 188-196.
3. Y. Bar-Cohen, "Electroactive Polymers as Artificial Muscles - Capabilities, Potentials and Challenges," **Keynote Presentation**, XXII San Sebastian annual meeting of the electrochemical Group, Spaniard Royal Society of Chemistry, San Sebastian, Spain, June 19-21, 2000.
4. Y. Bar-Cohen, X. Bao and H. Das "Ultrasonic Motors (USM) - Emerging Actuation Technology for Planetary Applications," Session 2aEA, Engineering Acoustics: Ultrasonic Sensors and Motors, Acoustical Society of America, 140th meeting, Newport Beach, CA, **Invited Paper**, Dec. 4-8, 2000.
5. Y. Bar-Cohen, "Biologically-Inspired Intelligent Robots Using Artificial Muscles," **Keynote Presentation**, 2002 AMS Workshop IAP 5/06 Advanced Mechatronic Systems, Belgian Universities Consortium-PMA/KU Leuven , Belgium, October 30, 2002
6. Y. Bar-Cohen, "Making Science Fiction an Engineering Reality Using Biologically-Inspired Technologies," 2002 Lester Honor Lecture, **Keynote Presentation**, November 5, 2003
7. A. K. Mal, F. Feng, M. Kabo, Y. Bar-Cohen, and J. Wang, "Interaction of focused ultrasound with biological materials," Paper #4702-40, Proceedings of the Smart NDE and Health Monitoring of Structural and Biological Systems Conf., 9th SPIE Smart Structures and Materials, held in San Diego, CA, March 18-21, 2002 – **2003 Best paper award** (3rd place out of over 100 papers).
8. Y. Bar-Cohen, "EAP as Biomimetic Actuation Materials," **Invited presentation** at the "Biologically Inspired Intelligent Robotics," AAAS Meeting, Denver, CO, Feb. 16, 2003
9. Y. Bar-Cohen, "Planetary prospective for future development of sensors," **Keynote Presentation** and a panelist, Special Forum, sponsored by NSF, SPIE Smart Structures Symposium, March 5, 2003
10. Y. Bar-Cohen, "Planetary prospective for future development of sensors," **Keynote Presentation** and a panelist, NSF Forum, Advances in Structural Control and Sensors Technologies, A Special Session of the American Control Conference 2003, Denver, CO, June 4, 2003
11. Y. Bar-Cohen, "Biologically Inspired Intelligent Robots Using Artificial Muscles," **Keynote Presentation**, International Conference on MEMS, NANO, and Smart Systems held in Banff, Alberta – Canada, July 20 - July 23, 2003
12. Y. Bar-Cohen, S. Sherrit, X. Bao and Z. Chang, "Real-time Sensing while Drilling using the USDC and Integrated Sensors," **Keynote presentation**, Proceedings of the EuroSensors XVII Conference, Guimaraes, Portugal, September 21-24, 2003.
13. Y. Bar-Cohen, "Biomimetic Robots using EAP as Artificial Muscles – Progress and Challenges," **Invited Plenary presentation**, Proceedings of the 2nd conference on Artificial Muscles - AIST Kansai, Ikeda city, Osaka Prefecture, Japan 20 - 21 May, 2004.
14. Y. Bar-Cohen, "Bionic Humans using EAP as Artificial Muscles – Reality and Challenges," **Keynote Presentation** at the "Technology: The Next 50 Years of Artificial Organs" 50th anniversary meeting of the American Society of Artificial Internal Organs (ASAIO), June 17-19, 2004.
15. Y. Bar-Cohen, "Electroactive Polymers (EAP) as actuators for potential future planetary mechanisms," **Invited Paper**, 6th NASA/DoD Conference on Evolvable Hardware (EH-2004) Seattle, WA, on June 24-26, 2004.

16. Y. Bar-Cohen, "Biologically inspired robots as artificial inspectors - science fiction and engineering reality," **Keynote Paper**, Proceedings of the 16th World Conference on NDT, Montreal, Canada, August 30 - September 3, 2004,
17. Y. Bar-Cohen, "Biologically-Inspired Robotic Inspectors the Engineering Reality and Future Outlook" **Plenary Paper**, Proceedings of the ICEM 2004, The 3rd International Conference on Experimental Mechanics, Singapore, 29th November – 1st December 2004.
18. Y. Bar-Cohen, "Biologically Inspired Technologies Using Artificial Muscles," **Plenary Paper**, Photonics West 2005, MOEMS-MEMS Micro & Nanofabrication Symposium, San Jose, California, (22–27 January 2005),
19. Y. Bar-Cohen, "Biomimetics: biologically inspired technology," **Plenary Paper, II** ECCOMAS Thematic Conf. on Smart Structures and Materials, Lisbon, Portugal, July 18 - 21, 2005
20. Y. Bar-Cohen, "Biomimetics - using nature as an inspiring model for innovation," **Keynote Paper**, ASNT Research Symposium, Orlando, FL March 2006
21. Y. Bar-Cohen, "Biomimetic Actuators using Electroactive Polymers as Artificial Muscles," **Plenary Paper**, Society for Advancement of Material and Process Engineering (SAMPE) Symposium, Long Beach, California, May 3, 2006.
22. Y. Bar-Cohen, "Biologically inspired technologies using artificial muscles," **Keynote paper**, International Symposium for Biologically Inspired Design in Science and Engineering, Georgia Institute of Technology, Atlanta, GA, May 10-12, 2006
23. Y. Bar-Cohen, "Biomimetics as a model for inspiring human innovation," **Plenary Paper**, CANSMART 2006, International Workshop on Smart Materials and Structures, Toronto, Canada, October 12-13, 2006
24. Y. Bar-Cohen, S. Sherrit, X. Bao, M. Badescu, J. Aldrich, S.-S. Lih and Z. Chang, "Piezoelectric Materials as Enabling Actuators for Terrestrial and Planetary Mechanisms," **Invited Paper**, CANSMART 2007 - International Workshop Smart Materials and Structures, Montreal, Quebec, Canada, October 10, 2007
25. Y. Bar-Cohen, "Human-like robotic inspectors - science fiction and reality," **Plenary Paper**, IV Conference of the Pan-America Committee for NDT (PANNDT), Buenos Aires, Argentina, 22-26 October 2007
26. Y. Bar-Cohen, "EAP actuators for biomimetic technologies with humanlike robots as one of the ultimate challenges" **Plenary Paper**, 3rd International CIMTEC 2008 Conference on "Smart Materials, Structures and Systems" Acireale, Sicily, Italy on June 8 to 13, 2008.
27. Y. Bar-Cohen, "Humanlike robots – the upcoming revolution in robotics" **Keynote Presentation**, Proceedings of the Biomimetics and Bioinspiration Conference, SPIE Nanoscience and Engineering Symposium, San Diego, CA, August 2-3, 2009.
28. Y. Bar-Cohen "Electroactive polymers for refreshable Braille displays," **Feature Article** <http://spie.org/x37076.xml> SPIE Newsroom homepage and the Industrial Sensing & Measurement website, DOI: 10.1117/2.1200909.1738 (Sept. 11, 2009)

CHAIR/CO-CHAIR CONFERENCES

1. Chair, Electroactive Polymer Actuators and Devices (EAPAD) SPIE's 6th Annual International Symposium on Smart Structures and Materials to be held in Newport Beach, California, March 1-2, 1999.

2. Co-Chair, NDE of Aging Aircraft, Airports, and Aerospace Hardware. SPIE's 6th Annual International Symposium on Smart Structures and Materials to be held at Newport Beach, California, from March 1-6, 1999
3. Co-Chair, 8th Annual NDE Research Symposium that was held in conjunction with the ASNT 1999 Spring Conference, Orlando, Florida. March 22-26, 1999,
4. Co-Chair, Symposium FF: Electroactive Polymers, Materials Research Society, 1999 Fall Meeting, Nov. 29 - Dec. 3, 1999, Boston, MA
5. Chair, Electroactive Polymer Actuators and Devices (EAPAD) SPIE's 7th Annual International Symposium on Smart Structures and Materials, held in Newport Beach, California, March 6-8, 2000.
6. Co-Chair, NDE of Aging Aircraft, Airports, and Aerospace Hardware. SPIE's 4th Annual International Symposium on NDE and Health Monitoring of Structures and Materials, held at Newport Beach, CA, from March 7-8, 2000
7. Chair, Electroactive Polymer Actuators and Devices (EAPAD) SPIE's 8th Annual International Symposium on Smart Structures and Materials, held in Newport Beach, California, March 5-8, 2001.
8. Co-Chair, Advanced NDE and Structural Health Monitoring. SPIE's 5th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held at Newport Beach, CA, from March 6-8, 2001,
9. Co-Chair, Symposium EE: Electroactive Polymers, Materials Research Society, 2001 Fall Meeting, Boston, MA Nov. 26-30, 2001.
10. Chair, "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 9th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 18-22, 2002.
11. Co-Chair, "Smart NDE and Health Monitoring of Structural and Biological Systems," SPIE's 7th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held in San Diego, California, March 18-22, 2002.
12. Chair, "Transducing Materials and Devices," Conference part of the SPIE's Photonics Fabrication Europe, Brugge, Belgium, October 30 to November 1, 2002
13. Y. Bar-Cohen, C. Breazeal, and D. Hanson, "Biologically Inspired Intelligent Robotics," AAAS Meeting, Denver, CO, Feb. 16, 2003
14. Chair, "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 10th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 3-6, 2003.
15. Co-Chair, "Smart NDE and Health Monitoring of Structural and Biological Systems," SPIE's 8th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held in San Diego, California, March 3-6, 2003.
16. Co-Chair, "Nondestructive Detection and Measurement for Homeland Security," SPIE's 8th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held in San Diego, California, March 3-6, 2003.
17. Co-Chair, SPIE's 11th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 14-18, 2004.
18. Chair, "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 11th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 14-18, 2004.

19. Co-Chair, "Smart NDE and Health Monitoring of Structural and Biological Systems," SPIE's 9th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held in San Diego, California, March 14–18, 2004.
20. Co-Chair, "Nondestructive Detection and Measurement for Homeland Security," SPIE's 9th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held in San Diego, California, March 14–18, 2004.
21. Co-Chair the International Conference on MEMS, NANO, and Smart Systems (ICMENS 2004) Banff, Alberta, Canada, August 25 - 27, 2004
22. Co-Chair, SPIE's 12th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 7–10, 2005.
23. Chair, "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 12th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 7–10, 2005.
24. Co-Chair, "Smart NDE and Health Monitoring of Structural and Biological Systems," SPIE's 10th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held in San Diego, California, March 7–10, 2005.
25. Co-Chair, "Nondestructive Detection and Measurement for Homeland Security," SPIE's 10th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held in San Diego, California, March 7–10, 2005.
26. Co-Chair the International Conference on MEMS, NANO, and Smart Systems (ICMENS 2005) Banff, Alberta, Canada, July 24 - 29, 2005
27. Co-Chair, "Electro-Responsive Polymers and Their Applications" 2005 MRS Fall Symposium W, Boston, MA, Nov. 28 to Dec. 2, 2005
28. Executive Chair, SPIE's 13th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, Feb. 26 to March 2, 2006
29. Chair, 8th "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 13th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, Feb. 26 to March 2, 2006
30. Co-Chair, "Smart NDE and Health Monitoring of Structural and Biological Systems," SPIE's 11th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held in San Diego, California, Feb. 26 to March 2, 2006
31. Co-Chair, "Nondestructive Detection and Measurement for Homeland Security," SPIE's 11th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held in San Diego, California, Feb. 26 to March 2, 2006
32. Co-Chair, "Smart Dielectric Polymer Properties, Characterization, and Their Devices" 2006 MRS Fall Symposium C, Boston, MA, November 27-December 1, 2006.
33. General Co-Chair, IEEE International Conference on Robotics and Biomimetics (ROBIO 2006), Kunming, China, December 17-20, 2006.
34. Executive Chair, SPIE's 14th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 18-22, 2007.
35. Chair, 9th "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 14th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 18-22, 2007.
36. Chair, 10th "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 15th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 9-13, 2008.

37. Chair, Symposium E: MINING SMARTNESS FROM NATURE - From Bio-inspired Materials to Bionic Systems," part of the 3rd International CIMTEC 2008 Conference on "Smart Materials, Structures and Systems," held at Acireale, Sicily, Italy on June 8 to 13, 2008.
38. Chair, 11th "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 16th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 8-12, 2009.

ORGANIZED NASA AND DoD MEETING

1. T. O'Donnell and Y. Bar-Cohen, 1st NASA-Wide Meeting on "Materials, Processes and NDE Standards," Held at Jet Propulsion Lab, Pasadena, CA, March 23 to 24, 1993.
2. Y. Bar-Cohen, Editor of the NASA NDE Working Group, Nominated at the 1st NASA NDE Working Group Meeting which was held in April, 1993 at Houston, TX.
3. T. O'Donnell and Y. Bar-Cohen, 2nd NASA-Wide Meeting on "Materials and Processes Standards," Held at Johnson Space Center, Houston, TX, April 5-6, 1994.
4. T. O'Donnell and Y. Bar-Cohen, 3rd NASA-Wide Meeting on "Materials and Processes Standards," Held at Marshall Space Flight Center, Huntsville, AL, April 11-12, 1995.
5. Y. Bar-Cohen and R. Neuschaefer, 2nd NASA NDE Working Group Workshop, NASA Marshall, Huntsville, AL May 8-10, 1995.
6. Y. Bar-Cohen, R. Tilley, 3rd NASA NDE Working Group Workshop, NASA Kennedy, Florida, February 21-22, 1996.
7. Y. Bar-Cohen, "Corrosion Detection Technologies Insertion Program Selection," NATIBO Second Workshop of the DoD and the Canadian DND, JPL, Pasadena, CA, July 8 and 9, 1998.

TRACK COORDINATION AND SESSION CHAIRING

1. Track Coordinator, "Process Monitoring and Control" and Chair 2 Sessions, ASNT Spring Conf., Norfolk, VA, March 18-22, 1996.
2. Session Chair, 1st US-Japan Symposium on Advances in NDE, June 24 - 28, 1996, Kahuku, Oahu, Hawaii
3. Chair, Cyberspace forum discussion, NDT.net Forum, Transducer Online Workshop on the Ultrasonic Testing Online Journal, Sept' 96 issue,
4. Chair 2 Sessions, NDE of Aircraft and Spacecraft Structures and International NDE, ASNT Fall Conf., Seattle, WA, Oct. 1996.
5. Chair Session 8 on NDE, Golden Gate Materials and Welding Conference, , San Mateo, CA, Feb. 26, 1997
6. Track Coordinator "Space NDE" and Co-Chair 4 Sessions, ASNT Spring Conf., Houston, TX March 17-20, 1997.
7. Track Coordinator "Tech Transfer" and Co-Chair 5 Sessions, ASNT Fall Conference, Pittsburgh, PA Oct. 20-23, 1997.
8. Track Coordinator "Aging Aircraft" and Co-Chair 4 Sessions ASNT Spring Conf., Anaheim, CA March 24-27, 1998.
9. Co-Chair 2 Sessions, SPIE's NDE Techniques for Aging Infrastructure & Manufacturing, Conference NDE of Materials and Composites II, 31 March-2 April, 1998,
10. Chaired an internet Virtual Session, Cyberspace discussion forum, NDT.net Forum, Sept. 1998

11. Track Coordinator "Emerging Technology" and Co-Chair 3 Sessions, ASNT Fall Conf., Nashville, TN, October 23-26, 1998,
12. Co-Chair 2 Sessions, SPIE's 6th Annual International Symposium on Smart Structures and Materials that was held at Newport Beach, CA, from March 1-6, 1999. Co-Chair "Medical" Session, 8th Annual NDE Research Symposium that was held in conjunction with the ASNT '99 Spring Conference, Orlando, Florida, March 22-26, 1999.
13. Session Chair, "Inspection and Other Applications for Advanced NDE Methods," 44th International SAMPE Symposium and Exhibition, May 24-27, 1999, Long Beach CA.
14. Track Coordinator "Emerging Technology," ASNT Fall Conf., Phoenix, AZ, October 11-15, 1999. Chair one session on "Near the Dawn of the New Millennium".
15. Session Chair, "Electroactive Polymers as Emerging Actuators," at the Electroactive Polymer Actuators and Devices (EAPAD) Conf., SPIE's 7th Annual International Symposium on Smart Structures and Materials, held in Newport Beach, California, March 6-8, 2000.
16. Session Chair, "Electroactive Polymers as Emerging Actuators," at the Electroactive Polymer Actuators and Devices (EAPAD) Conf., SPIE's 8th Annual International Symposium on Smart Structures and Materials, held in Newport Beach, California, March 5-8, 2001.
17. Session Chair, SESSION 3, "Advanced Nondestructive Evaluation for Structural and Biological Health Monitoring," conference part of the 6th SPIE Symposium on NDE for Health Monitoring and Diagnostics," SPIE Conf. 4335, held at Newport Beach, CA, March 6-8, 2001
18. Session Chair, "Electroactive Polymers as Emerging Actuators," at the Electroactive Polymer Actuators and Devices (EAPAD) SPIE's 9th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 18-22, 2002.
19. Session Chair, SESSION 5, "Smart NDE and Health Monitoring of Structural and Biological Systems," SPIE's 6th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held in San Diego, California, March 18-22, 2002
20. Session chair, SESSION 1, SPIE's Transducing Materials and Devices Conference, Photonics Fabrication Europe, Brugge, Belgium, October 30 to November 1, 2002.
21. Session Chair, SESSION 1, "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 10th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 3, 2003.
22. Session Chair, SESSION 1, "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 11th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 14, 2004
23. Session Chair, SESSION 1, "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 12th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 7, 2005
24. Session Chair, SESSION 1, "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 13th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, Feb. 27, 2006
25. Session Chair, Electroactive Polymers, 2006 Society for Advancement of Material and Process Engineering (SAMPE) Symposium, Long Beach, California, from 30 April to 4 May 2006.
26. Session Chair, SESSION 1, "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 14th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 20, 2007

27. Session Chair, Planetary Mechanisms Driven by Electroactive Actuation Materials, Earth and Space Conf., Long Beach, CA, March 4, 2008
28. Session Chair, SESSION 1, "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 15th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 10, 2008
29. Chair, Special Session on Electroactive Polymers of Symposium A – Smart Materials and Micro/Nanosystems, at the 3rd International CIMTEC 2008 Conference on "Smart Materials, Structures and Systems," held at Acireale, Sicily, Italy on June 8 to 13, 2008.
30. Session Chair, SESSION 1, "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 16th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 9, 2009
31. Session Chair, Session 3: Biomechatronics I, Biomimetics and Bioinspiration Conference, SPIE Nanoscience and Engineering Symposium, San Diego, CA, August 2, 2009.

CONF./SYMP. ORGANIZATION COMMITTEES

1. Member of the Organization committee, Workshop on Intelligent NDE Sciences for Aging and Futuristic Aircraft, Held at the University of Texas, El Paso (UTEP), Sept. 30 to October 2, 1997.
2. Member of the Organization committee, International Symposium on Nondestructive Testing, "Contribution to the Infrastructure Safety Systems in the 21st Century" Torres, RS, Brazil, November 22 to 26, 1999
3. Member of the Organization Committee, National Space & Missile Materials Symposium (NSMMS), San Diego, CA, 27 Feb. to 2 March 2000.
4. Member of the Symposium Executive Committee, 7th SPIE SSM/NDE Symposia, Newport Beach, CA, March 6-10, 2000
5. Member of the Symposium Executive Committee, 8th SPIE SSM/NDE Symposia, Newport Beach, CA, March 5-9, 2001
6. Member of the International Advisory Committee, 6th Cansmart Meeting, INTERNATIONAL WORKSHOP on SMART MATERIALS AND STRUCTURES, October 16-17, 2003, Montreal, Quebec, Canada
7. Member of the Symposium Executive Committee, 1^{1th} SPIE SSM/NDE Symposia, San Diego, CA, March 15-19, 2004
8. Member of the Symposium Executive Committee, 12th SPIE SSM/NDE Symposia, San Diego, CA, March 7-11, 2005
9. Member of the Scientific Committee, II ECCOMAS Thematic Conf. on Smart Structures and Materials, Lisbon, Portugal, July 18 - 21, 2005
10. Member of the Program Committee for IEEE International Conference on Robotics and Biomimetics (IEEE ROBIO), Hong Kong from June 29 to July 03, 2005.
11. Member of the Symposium Executive Committee, 13th SPIE SSM/NDE Symposia, San Diego, CA, Feb. 26 to March 1, 2006
12. Member of the Symposium Executive Committee, 14th SPIE SSM/NDE Symposia, San Diego, CA, March 19-22, 2007
13. Member of the Program Organization Committee for the Conference "Health Monitoring of Structural and Biological Systems I," 2007 SPIE SSM/NDE Symposia, San Diego, CA, March 18-22, 2007
14. Member of the Program Organization Committee for the Conference "Nondestructive

- Characterization for Composite Materials, Aerospace Engineering, Civil Infrastructure, and Homeland Security I,” SPIE SSM/NDE Symposia, San Diego, CA, March 18-22, 2007
15. Member of the International Scientific Committee, “International Conference on Smart Materials and Nanotechnology in Engineering (SMN2007),” Harbin, China, July 1 – 4, 2007.
 16. Member of the International Advisory Committee of the CANSMART 2007 - International Workshop Smart Materials and Structures, Montreal, Canada from October 10 - 11, 2007.
 17. Scientific Committee of the IV Conference of the Pan-America Committee for NDT (PANNDT), Buenos Aires, Argentina, October 22-26, 2007
 18. Member of the Symposium Executive Committee, 15th SPIE SSM/NDE Symposia, San Diego, CA, March 10-13, 2008
 19. Member of the Program Organization Committee for the Conference “Health Monitoring of Structural and Biological Systems I,” SPIE SSM/NDE Symposia, San Diego, CA, March 10-13, 2008
 20. Member of the Program Organization Committee for the Conference “Nondestructive Characterization for Composite Materials, Aerospace Engineering, Civil Infrastructure, and Homeland Security II,” SPIE SSM/NDE Symposia, San Diego, CA, March 10-13, 2008
 21. Member of the International organizing committee of the “Biological Approaches to Engineering Conference,” University of Southampton, Highfield, United Kingdom, March 17-19, 2008
 22. Member of the Steering Committee of the 3rd International CIMTEC 2008 Conference on “Smart Materials, Structures and Systems,” held at Acireale, Sicily, Italy on June 8 to 13, 2008.
 23. Member of the International Scientific Advisory Committee of the 4th International Conf. on "Comparing Design in Nature with Science and Engineering" that will be held in Algarve, Portugal, June 24 – 26, 2008.
 24. Member of the Organization Committee, Symposium on Bio-Inspired Smart Materials and Structures, part of the Smart Materials, Adaptive Structures and Intelligent Systems, Ellicott City, MD, Oct. 28-30, 2008.
 25. Member of the Program Committee, 2008 IEEE International Conf. on “Robotics and Biomimetics (ROBIO), Bangkok, Thailand, Feb. 21-26, 2009.
 26. Member of the Symposium Executive Committee, 16th SPIE SSM/NDE Symposia, San Diego, CA, March 9-12, 2009
 27. Member of the Program Organization Committee for the Conference “Health Monitoring of Structural and Biological Systems III,” SPIE SSM/NDE Symposia, San Diego, CA, March 9-12, 2009
 28. Member of the Program Organization Committee for the Conference “Nondestructive Characterization for Composite Materials, Aerospace Engineering, Civil Infrastructure, and Homeland Security III,” SPIE SSM/NDE Symposia, San Diego, CA, March 9-12, 2009
 29. Member of International Program Committee, IEEE International Symposium on Industrial Electronics, ISIE 2009, held at the Seoul Olympic Parktel, Seoul, Korea from July 05 to 08, 2009.
 30. Member of the Organization Committee, “2nd International Conference on Smart Materials and Nanotechnology in Engineering (SMN2009),” Weihai, China, July 8 - 11, 2009.
 31. Member of the Scientific Committee, ECCOMAS International Conference on Smart Structures and Materials (SMART’09), Campus of the Faculty of Engineering of the University of Porto, Portugal, July 20-22, 2009.

32. Member of the organization Committee of Symposium 6: “Bio-inspired Smart Materials and Structures” of the ASME 2009 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. This Conference was held in Oxnard, California, from Sept. 21 to 23, 2009.

MODERATOR

EAP-in-Action

1. 1st Electroactive Polymer Actuators and Devices (EAPAD) SPIE's 6th Annual International Symposium on Smart Structures and Materials to be held in Newport Beach, California, March 1, 1999.
2. 2nd, Electroactive Polymer Actuators and Devices (EAPAD) SPIE's 7th Annual International Symposium on Smart Structures and Materials, held in Newport Beach, California, March 6, 2000.
3. 3rd Electroactive Polymer Actuators and Devices (EAPAD) SPIE's 8th Annual International Symposium on Smart Structures and Materials, held in Newport Beach, California, March 5, 2001.
4. 4th “Electroactive Polymer Actuators and Devices (EAPAD),” SPIE's 9th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 18, 2002.
5. 5th “Electroactive Polymer Actuators and Devices (EAPAD),” SPIE's 10th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 3, 2003.
6. 6th “Electroactive Polymer Actuators and Devices (EAPAD),” SPIE's 11th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 14, 2004.
7. 7th “Electroactive Polymer Actuators and Devices (EAPAD),” SPIE's 12th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 7, 2005.
8. 8th “Electroactive Polymer Actuators and Devices (EAPAD),” SPIE's 13th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, Feb. 26, 2006.
9. 9th “Electroactive Polymer Actuators and Devices (EAPAD),” SPIE's 14th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 19, 2007.
10. 10th “Electroactive Polymer Actuators and Devices (EAPAD),” SPIE's 15th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 10, 2008.
11. 11th “Electroactive Polymer Actuators and Devices (EAPAD),” SPIE's 16th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 9, 2009.

Open Discussion

1. Chair, Panel Session, 2nd, Electroactive Polymer Actuators and Devices (EAPAD) SPIE's 7th Annual International Symposium on Smart Structures and Materials, held in Newport Beach, California, March 8, 2000.

2. Chair, Panel Session, 3rd Electroactive Polymer Actuators and Devices (EAPAD) SPIE's 8th Annual International Symposium on Smart Structures and Materials, held in Newport Beach, California, March 7, 2001.
3. Chair, Panel Session, 4th "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 9th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 20, 2002.
Participants: Yoshihito Osada, Hokkaido Univ. (Japan); Rainer W. Gülch, Eberhard-Karls-Univ. Tübingen (Germany); Seung-Ki Lee, Dankook Univ. (Korea); John D. Madden, Massachusetts Institute of Technology; Siavouche Nemat-Nasser, Univ. of California/San Diego; Mohsen Shahinpoor, Environmental Robotics, Inc.; Leonard J. Buckley, Naval Research Lab.; Danilo De Rossi, Univ. degli Studi di Pisa (Italy); Gordon G. Wallace, Univ. of Wollongong (Australia)
4. Chair, Panel Session, "Homeland Defense Using NDE Technology," "Smart NDE and Health Monitoring of Structural and Biological Systems," SPIE's 6th SPIE Annual International Symposium on NDE for Health Monitoring and Diagnostics, held in San Diego, California, March 18-22, 2002
Panelists: Lynne D. Herold, Los Angeles County Sheriff's Dept.; George Zentai, Varian Medical Systems, Inc.; Kam Ng, Office of Naval Research; Alison Flatau, Shih C. Liu, National Science Foundation
5. Chair, Panel Session, 5th "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 10th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 5, 2003.
6. Chair, Panel Session, 6th "Electroactive Polymer Actuators and Devices (EAPAD)," SPIE's 11th Annual International Symposium on Smart Structures and Materials, held in San Diego, California, March 16, 2004.
7. Chair, Panel Session, *Panelists:* Andre Premont, Belgium; Afzal Suleman, Portugal; J.N. Reddy, USA; Jan Holnicki-Szulc, Poland; and Eswar Prasad, Canada. II ECCOMAS Thematic Conf. on Smart Structures and Materials, Lisbon, Portugal, July 18 - 21, 2005
8. *Panelist* at "Robotics and the New Age of Space Exploration" Session of the American Astronautical Society (AAS) National Conference having the theme "The Human and Machine Equation." The conference was held in Pasadena on November 14, 2006.
9. *Panelist* as a Materials Expert in the "Materialistic Dreams" Technical Panel Discussion as part of the ASME 2009 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. This Conference was held in Oxnard, California on Sept. 21, 2009.

CONFERENCE PROCEEDINGS & OTHER PUBLICATIONS

1. O. Ishai and Y. Bar-Cohen, "Hygrothermal Degradation of GFRP Laminates as Manifested in the Dispersion of Ultrasonic Data," Proceeding on New Horizons - Materials and Processes for the Eighties, The 11th National SAMPE Technical Conference, USTC11, Boston, MA, November 13-15 (1979), pp. 211-217.
2. R. L. Crane and Y. Bar-Cohen, "NDE of Fiber-Reinforced Composites with Backscattering Measurements," Proceeding of the 29th Defense Conference on Nondestructive Testing, Sacramento Air Logistics Center, McClellan AFB, CA, November 17-20, (1980), pp. 233-252.
3. Y. Bar-Cohen and R. L. Crane, "Nondestructive Evaluation of Composite Materials with Backscattering Measurements," Review of Progress in Quantitative NDE,

- AFWAL-TR-4080, Air Force Wright Aeronautical Laboratories, Wright Patterson Air Force Base, OH, (1981), pp. 78-80.
4. Y. Bar-Cohen and R. L. Crane, "Ultrasonic Backscattering - An NDE Method of Characterization of Composite Materials," Proceedings of the Materials Engineering Conference 1981, Haifa, Israel, December 20-22, (1981), pp. 17-21.
 5. Y. Bar-Cohen and R. L. Crane, "Nondestructive Evaluation of Fiber-Reinforced Composites with Acoustic Backscattering Measurements," ASTM STP 787, American Society for Testing and Materials, Philadelphia, PA, (1981), pp. 343-354.
 6. Y. Bar-Cohen and R. L. Crane, "Characterization of Multiple Defects in Composites Using a New Ultrasonic Technique," Proceeding of the Qualtest - I, Pittsburgh, PA, October 4-7, (1982), pp. 475-479.
 7. Y. Bar-Cohen and D. E. Chimenti, "Leaky Lamb Waves in Fiber-Reinforced Composite Plates," Review of Progress in Quantitative NDE, Vol. 3B, D. O. Thompson and D. E. Chimenti (Eds.), Plenum Press, New York and London (1984), pp. 1043-1049.
 8. Y. Bar-Cohen and D. E. Chimenti, "NDE of Defects in Composites using Leaky Lamb Waves," Proceeding of the 5th Symposium on Nondestructive Evaluation, D. W. Moore and G. E. Matzkanin, (Eds.), Southwest Research Institute, San Antonio, TX (1985), pp. 202-208.
 9. Y. Bar-Cohen and D. E. Chimenti, "Detection of Porosity in Composites Using Leaky Lamb Waves," Proceeding of the 11th World Conference on Nondestructive Testing, Vol. III hosted by ASNT, Taylor Publishing Co., Dallas, TX, (1985), pp. 1661-1668.
 10. D. E. Chimenti and Y. Bar-Cohen, "Signal Analysis of Leaky Lamb Wave Spectra for NDE of Composites," Proceeding of IEEE 1985 Ultrasonic Symposium, B. R. McAvoy (Ed.), IEEE, New York (1986), pp. 1028-1031.
 11. Y. Bar-Cohen and D. E. Chimenti, "NDE of Composites Laminates by Leaky Lamb Waves," Review of progress in Quantitative NDE, Vol. 5B, D. D. Thompson, and D. E. Chimenti (Eds.) Plenum Press, New York, (1986), pp. 1199-1206.
 12. Y. Bar-Cohen and D. E. Chimenti, "NDE of Composite Laminates by Leaky Lamb Waves and a Bubbler," Nondestructive Characterization of Materials II, J. F. Bussiere, J. P. Monchalin, C. D. Rudd, and R. E. Green (Eds.), Plenum Press, NY. (1987), pp. 89-93.
 13. Y. Bar-Cohen, "Nondestructive Characterization of Defects Using Ultrasonic Backscattering," Ultrasonic International 87, Conference Proceedings, Butterworth & Co., Surrey, UK (1987), pp. 345-352.
 14. A. K. Mal and Y. Bar-Cohen, "Ultrasonic NDE of Bonded Solids," Proceedings of the International Workshop on NDE of Performance of Civil Structures, University of Southern California, Los Angeles, CA, M.S. Agbaian and S.F. Masri, (Feb. 3-4, 1988) pp. 299-308.
 15. Y. Bar-Cohen and A. K. Mal, "Ultrasonic NDE of Bonded Structures," Transcript of the Presentations at the Workshop on NDE of Adhesive Bond Strength, Sponsored by AMTL and Organized by ASNT, Held at Orlando, FL, April 13-14 (1988), pp. 201-227.
 16. A. K. Mal and Y. Bar-Cohen, "Stress Waves in Layered Composite Laminates," Proceedings of the Fourth Japan - United States Conference on Composite Materials, Technomic Publishing, Lancaster, Basel (1988), pp. 361-370.
 17. A. K. Mal, C. -C. Yin, and Y. Bar-Cohen, "Guided Waves in Unidirectional Fiber-Reinforced Plates," Proceedings on Techniques in Applied Mathematics and Applications, Calcutta University Symposium, Calcutta, India, Dec. 28-29 (1988).

18. A. K. Mal and Y. Bar-Cohen, "Ultrasonic Characterization of Composite Laminates," Wave Propagation in Structural Composites, Proceedings of the Joint ASME and SES meeting, AMD-Vol. 90, A. K. Mal and T. C. T. Ting (Eds.), ASME, NY, (1988), pp. 1-16.
19. A. K. Mal, C. -C. Yin, and Y. Bar-Cohen, "The Influence of Material Dissipation and Imperfect Bonding on Acoustic Wave Reflection From Layered Solids," Review Progress in Quantitative NDE, Vol. 7B, D. O. Thompson, and D. E. Chimenti (Eds.), Plenum Press, New York, (1988), pp. 927-934.
20. C. M. Teller, K. J. Diercks, Y. Bar-Cohen, and N. N. Shah, "Nondestructive Evaluation of Adhesive Bonds Using Leaky Lamb Waves," *ibid*, pp. 935-942.
21. A. K. Mal and Y. Bar-Cohen, "Ultrasonic Evaluation of Adhesive Bonding," New Directions in the Nondestructive Evaluation of Advanced Materials, J.L. Rose, and A.A. Tseng, ASME, New York, MD-Vol. 9 (1988), pp. 85-89.
22. A. K. Mal and Y. Bar-Cohen, "NDE of Strength Related Properties of Adhesive Joints," Advances in Fracture Research, K. Salama, et al (Eds.), Proceedings of the 7th International Conference on Fracture (ICF 7), Volume 5, Pergamon Press, New York (1989), pp. 3197-3204.
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221. Y. Bar-Cohen, "Compact Actuators for Sample Motion," In-Situ Instruments Workshop, held in Pasadena, California, June 11-13, 2002.
222. Y. Bar-Cohen, "Biologically-Inspired Intelligent Robots using Electroactive Polymers as Artificial Muscles," IXth International Seminar on the Technology of Inherently Conductive Polymers, held in Monterey, California, June 17-19, 2002.

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240. Y. Bar-Cohen, Biologically Inspired Intelligent Robotics Using Artificial Muscles," Colloquium at Fermilab, Chicago, IL, April 30, 2003.
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243. Y. Bar-Cohen, "Biologically Inspired Intelligent Robots Using Artificial Muscles," **Keynote Presentation**, International Conference on MEMS, NANO, and Smart Systems held in Banff, Alberta – Canada, July 20 - July 23, 2003
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260. Y. Bar-Cohen, "Concluding Remarks," 2nd conference on Artificial Muscles - AIST Kansai, Ikeda city, Osaka Prefecture, Japan 20 - 21 May, 2004.
261. Y. Bar-Cohen, "Bionic Humans using EAP as Artificial Muscles – Reality and Challenges," **Invited Paper** at the "Technology: The Next 50 Years of Artificial Organs" 50th anniversary meeting of the American Society of Artificial Internal Organs (ASAIO), June 17-19, 2004.
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263. S. Sherrit, M. Badescu, X. Bao, Y. Bar-Cohen, and Z. Chang, "Novel Horns for Power Ultrasonics," IEEE International Ultrasonics Symposium, UFFC, Montreal, Canada, August 24-27, 2004
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266. Y. Bar-Cohen, "Biologically-Inspired Robotic Inspectors the Engineering Reality and Future Outlook" **Plenary Paper**, Proceedings of the ICEM 2004, The 3rd International Conference on Experimental Mechanics, Singapore, 29th Nov. – 1st Dec. 2004.
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268. Y. Bar-Cohen, S. Lih, X. Q. Bao, and S. Sherrit, "Ferroelectric-based multiple radiations source for in-situ multifunctional analytical instruments," Smart Sensor Technology and Measurement Systems Conference, SPIE Smart Structures and Materials Symposium, Paper #5758-42, San Diego, CA, March 6 – 10, 2005.
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270. Y. Bar-Cohen, "Biomimetics: mimicking and inspired-by biology," Conference, SPIE Smart Structures and Materials Symposium, Paper #5759-02, San Diego, CA, March 7 – 10, 2005.
271. X. Bao, Y. Bar-Cohen, Z. Chang, S. Sherrit, and M. Badescu, "Wirelessly controllable inflated electroactive polymer (EAP) reflectors," EAPAD Conference, SPIE Smart Structures and Materials Symposium, Paper #5759-52, San Diego, CA, March 7 – 10, 2005.
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 281. Y. Liu, C. Mavroidis Y. Bar-Cohen, and Z. Chang, “Optimal design of the coring bit cutting edge in percussive / vibratory drilling,” Proceedings of the 2005 ASME International Design Engineering Technical Conferences & Computers and Information In Engineering Conference, held in Long Beach, California, September 24-28, 2005.
 282. A. Vinogradov, J. Su, C. Jenkins, and Y. Bar-Cohen, “State-of-the-Art Developments in the Field of Electroactive Polymers” 2005 MRS Fall Symposium W - Electro-Responsive Polymers and Their Applications, Boston, MA, Nov. 28 to Dec. 2, 2005
 283. Y. Bar-Cohen, “Biomimetics: Using nature as an inspiring model for human innovation,” the International Conference on Recent Advances in Engineering Mechanics (RAEM), J. Kreiner and C. Putch (Ed.), California State University, Fullerton, (January 12-14, 2006).
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- penetrator of packed soil,” SPIE Smart Structures and Materials Symposium, Paper #6171-08, San Diego, CA, Feb. 27 to March 2, 2006.
289. Z. Chang, S. Sherrit, M. Badescu, X. Bao, Y. Bar-Cohen, and P. Backes, “Reaction force of percussive corer, rotary-friction corer, and rotary-percussive corer,” SPIE Smart Structures and Materials Symposium, Paper #6171-06, San Diego, CA, Feb. 27 to March 2, 2006.
 290. Y. Bar-Cohen, "Biomimetics - using nature as an inspiring model for innovation," **Keynote Paper**, ASNT Research Symposium, Orlando, FL March 2006
 291. Y. Bar-Cohen, "Biomimetic Actuators using Electroactive Polymers as Artificial Muscles,” Proceedings of the Society for Advancement of Material and Process Engineering (SAMPE) Symposium, Long Beach, California, 30 April to 4 May 2006.
 292. X. Bao, Y. Bar-Cohen, Z. Chang, S. Sherrit and M. Badescu, "Rock Sampling using the Ultrasonic/Sonic Driller/Corer (USDC) for In-situ Planetary Exploration," 35th Annual UIA Symposium, San Diego, CA, March 13, 2006
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