DETAILED CURRICULUM VITAE AND BIOGRAPHICAL INFORMATION

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Personal Data:

DOB/Place: October 26, 1970 / Tehran, Iran

Citizenship: United States Citizen

Education:

Ph.D.	University of Connecticut, Storrs, CT, December 1998, Mechanical Engineering (Major in Dynamic Systems and Control, highest class honors with GPA of 4.05)
M.Sc.	Sharif University of Technology, Tehran, IRAN, May 1995, Mechanical Engineering (Major in Applied Mechanics, 1st class honors)
B.Sc.	Sharif University of Technology, Tehran, IRAN, August 1992, Mechanical Engineering (Major in Mechanical Systems and Design, 1st class honors)

Professional Experience and Appointments:

2006-present	**Associate Professor with Tenure:** Department of Mechanical Engineering, Clemson University, Clemson, SC (http://www.ces.clemson.edu/ssnems).
2000-2006	**Assistant Professor:** Department of Mechanical Engineering, Clemson University, Clemson, South Carolina (http://www.ces.clemson.edu/ssnems).
1999-2000	**Assistant Professor:** Department of Mechanical Engineering, Northern Illinois University, DeKalb, Illinois.
1999-1999	**Visiting Assistant Professor:** Department of Mechanical Engineering, Northern Illinois University, DeKalb, Illinois (January 1999 to August 1999).
1996-1998	**Research Assistant:** Advanced Laboratory for Automation, Robotics and Manufacturing (ALARM), University of Connecticut, Storrs, Connecticut.
1993-1995	**Design Engineer and Project Manager:** Iranian Shipyard Crane Manufacturing Company, Tehran, IRAN.
1992-1993	**Design Engineer and Project Consultant:** Kaveh Truck Manufacturing Company, Tehran, IRAN.

Research Interests and Expertise:

Mechatronics, dynamic modeling and vibration control of flexible and distributed structures, piezoelectric-based actuators and sensors comprised of functional nanomaterials, micro and nanomechanical sensors and actuators, and control and manipulation at the nanoscale.

Memberships:

- Member, American Society of Mechanical Engineers (ASME), 1996-present.
- Member, The International Society for Optical Engineering (SPIE), 2005-present.
- Member, Institute of Electrical and Electronics Engineers (IEEE), 1998-2004.

Professional Society Activities and Conference Organization:

Key Editorial Positions and Offices Held:

- Technical Editor, IEEE/ASME Transactions on Mechatronics (01/2005-12/2008).
- Associate Technical Editor, ASME Transactions, Journal of Dynamic Systems, Measurement and Control (06/2006-06/2009).
- Lead Guest Editor, Focused Section on Mechatronics for MEMS and NEMS, IEEE/ASME Transactions on Mechatronics (2008-2009).
- Lead Guest Editor, Special Issue on Dynamic Modeling, Control and Manipulation at the Nanoscale, ASME Transactions, Journal of Dynamic Systems, Measurement and Control (2008-2009).

Professional Conference Organizations:

- General Technical Program Chair for 2007 ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (IDETC/CIE), Las Vegas, NV (September 4-7, 2007).
- Technical Program Chair for the 21st Biennial Conference on Mechanical Vibration and Noise (VIB), 2007 ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, Las Vegas (September 4-7, 2007).
- Member of Organizing and Program Committees, 2008 ASME *Dynamic Systems and Controls Conference* (DSCC 2008), Ann Arbor, MI (October 2008).
- Member of Organizing Committee, *Nonlinear Dynamics and Passive/Adaptive Controls Symposium*, ASME Smart Materials, Adaptive Structures and Intelligent Systems Conference (SMASIS 2008), Washington DC (October 28-30, 2008).
- Lead Organizer for *Symposium on Active Control of Vibration and Noise,* ASME International, 20th Biennial Conference on Mechanical Vibration and Noise (2005 IDETC/CIE), Long Beach, California (September 2005).
- Symposia and Lead Sessions Organizer for Dynamic Systems and Control Division and Design Division of the ASME, International Mechanical Engineering Congress and Exposition; IMECE 2001, New York, NY; IMECE 2002, New Orleans, LA; IMECE 2003, Washington, DC; IMECE 2004, Anaheim, CA; IMECE 2005, Orlando, FL; IMECE 2006, Chicago, IL and IMECE 2007, Seattle, WA.
- International Program Committee Member for 2003 IEEE International Symposium on Intelligent Control (ISIC), October 2003, Houston, TX.
- Technical Session Chair for American Control Conference (ACC); ACC 2000, Chicago, IL and ACC 2001, Arlington, VA, as well as the ASME DETC Conference, DETC 2003, Chicago, IL and IMECE 2001, New York, NY; IMECE 2002, New Orleans, LA; IMECE 2003, Washington, DC; IMECE 2004, Anaheim, CA; IMECE 2005, Orlando, FL; IMECE 2006, Chicago, IL and IMECE 2007, Seattle, WA.
- Symposia Chair, Dynamic Systems and Control Division, IMECE 1999, Nashville, TN.

Technical Committee Membership and Activities:

- Founding Chair, Technical Committee on Vibration and Control of Smart Structures (TC-VCSS), ASME Dynamic Systems and Control Division (DSCD), (2006-2008).
- Chair, Vibration and Noise Control Panel of the ASME Dynamic Systems and Control Division (DSCD), (2003-2005).
- Member, IFAC Technical Committee on Mechatronic Systems, (2005-2008).
- Member, Mechatronics Technical Committee, ASME Dynamic Systems and Control Division (DSCD), (2006-2008).
- Member, Technical Committee on Vibration and Sound (TCVS) of the ASME Design Engineering Division (DED), (2004-2010).
- Member, Vehicle Design Committee (VDC) of the ASME Design Engineering Division (DED), (2004-2007).
- Vice-Chair, Vibration and Noise Control Panel of the ASME Dynamic Systems and Control Division (DSCD), (2001-2003).

Technical Review Activities:

- Proposal Reviewer (Review Panel Member and Panel Chair) for National Science Foundation (2004-2008).
- Proposal Reviewer for U.S. Civilian Research and Development Foundation (CRDF), the Science Center Programs of the U.S. Department of State (2003), and the Kentucky Science and Engineering Foundation (2002, 2006 and 2007).
- Textbook Reviewer for John Wiley & Sons, Inc (2002), and Springer (2005, 2006 and 2007).
- Paper Reviewer for ASME Transactions, Journal of Vibration and Acoustics; ASME Transactions, Journal of Dynamic Systems, Measurement and Control; IEEE Transactions on Control System Technology; IEEE/ASME Transactions on Mechatronics, Journal of Sound and Vibration; Journal of Vibration and Control; International Journal of Mechatronics; Transactions of the Canadian Society of Mechanical Engineers; Mathematical and Computer Modeling Journal and Journal of Multi-body Dynamics.

Industrial and Project Management Experience:

- Consultant for Tetramer Technologies L.L.C., Clemson, SC (2004-present), Consulting and advising on Piezo/pyroelectric Polymer Materials with Nanotube Reinforcement for Sensing, Vibration Dampening and Energy Harvesting Applications.
- Research Director for Several University Research Initiatives (URIs) and Regular Projects, Ingersoll-Rand Industrial Technologies (North Carolina, USA) through Clemson University Department of Mechanical Engineering (2006-2008). Actively involved with research projects on Tire Nitrogen Filling System.
- Research Director for Several URIs and Regular Projects, Michelin Americas Research & Development Corporation (South Carolina, USA) through Clemson University Department of Mechanical Engineering (2001-2006). Actively involved with directing research projects

on a variety of subjects including (i) Non-Uniformity-Induced Vibration in Vehicle Ride and Comfort; (ii) Vehicle Transfer Function Development and Modeling, (iii) Effect of Tire Radial Stiffness on Vehicle Comfort and Ride, and (iv) Piezoelectric-Based Active Control and Diagnostics for Rubber Materials with Application to *Smart Tires*.

- Research Director for Several URIs, Motorola Inc. (Illinois, USA) through Northern Illinois University Department of Mechanical Engineering (1999-2000). Actively involved with research projects on Design and Development of Vibration Absorbers and Isolators for Automotive Engine Control Unit (ECU).
- Design Engineer and Project Manager, Iranian Shipyard Crane Manufacturing Company (Tehran, IRAN), (1993-1995). Actively involved with directing several projects on Design, Dynamic Modeling and Simulation Analysis of Shipyard Cranes.
- Technical Advisor to the Electric Power Generation and Transmission Company (Tehran, IRAN) through Sharif University of Technology (1994-1995). Actively involved with research projects on Vibration of Machineries, Generators, and Transmission Lines.
- Design Engineer and Project Consultant, Kaveh Truck Manufacturing Company (Tehran, IRAN), (1992-1993). Actively involved with consulting on several projects on Chassis Design, Nonlinear Vibration Analysis of different Tractors and Trailers.

Selected Honors, Awards and Synergistic Activities:

National and International Awards:

- 2007 ASME Service Award in recognition of outstanding service and extraordinary dedication as General Technical Program Chair for the 2007 ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (IDETC/CIE), awarded by the ASME Design Engineering Division.
- 2007 ASME Service Award for valued services in advancing the engineering profession as Technical Program Chair for the 21st Biennial Conference on Mechanical Vibration and Noise (VIB), awarded by the ASME Design Engineering Division, Technical Committee on Vibration and Sound.
- Best Technical Poster Presentation Award from National Textile Center (NTC), 15th NTC Forum, Competency: Materials, PI: N. Jalili, Hilton Head Island, SC (February 2007).
- Best Technical Poster Presentation Award from National Textile Center (NTC), 12th NTC Forum, Competency: Materials, PI: N. Jalili, Hilton Head Island, SC (February 2004).
- 6th International Conference on Vibration Measurements by Laser Techniques Research Award, Awarded by the European Commission, Research DG, The Human Factor, Mobility and Marie Curie Activities - Series of Events (SCF), Ancona, Italy (June 2004).
- 2003 National Science Foundation CAREER[*] Awardee, NSF Division of Design, Manufacture and Industrial Innovations (DMII), Nanomanufacturing Program.
- Recipient of the 2002 Ralph E. Powe Junior Faculty Enhancement Award from the Department of Energy through Oak Ridge Associated Universities (ORAU).

[*] United States' most prestigious awards for new faculty members, recognizing a select few of the finest new science and engineering faculty in the nation.

- Listed in "Who's Who in America", MARQUIS Who'sWho® Publisher (2000-2008).
- Listed in "Who's Who in Science & Engineering", MARQUIS Who'sWho® Publisher (2000-2008).
- Listed in "Who's Who in the World", MARQUIS Who'sWho® Publisher (2000-2008).
- Listed in "Who'sWho in American Education", MARQUIS Who'sWho® Publisher (2004-2008).

Clemson University Awards and Recognitions:

- Clemson University Board of Trustees Award for Faculty Excellence in Research (2008).
- Recipient of Clemson University College of Engineering and Science Murray Stokley Award for Excellence in Teaching, the highest distinctions awarded to engineering faculty at Clemson University (2008),
- Recipient of the Inaugural Clemson University College of Engineering and Science Collaboration Award for demonstrated exemplary and synergetic collaboration in research with notable contributions to the College (co-winner with D.M. Dawson from ECE, 2007),
- Outstanding Young Investigator of the Year Award (Engineering and Physical Sciences), Awarded by Sigma Xi Clemson Chapter (2007).
- Recipient of the 2007 Faculty Award for commitment to excellence and success of Clemson University graduate students, Awarded by the Graduate Student Government (2007).
- Eugene H. Bishop Award for Excellence in Teaching (the highest teaching award given to Mechanical Engineering faculty), Awarded by Pi Tau Sigma Chapter, Department of Mechanical Engineering (2007).
- Ken Roby Advising Award for Excellence in Undergraduate Advising, Awarded by the ASME Chapter, Department of Mechanical Engineering (2007).
- Clemson University Board of Trustees Award for Faculty Excellence in Research (2007).
- Clemson University Research Foundation Certificate of Excellence for Patent Disclosure on "Electrospun Fabric having Piezo/Pyroelectric Response with Application to Sensing, Vibration Dampening and Energy Harvesting" (March 2005).
- Clemson University Board of Trustees Award for Faculty Excellence in Research (2006).
- Clemson University Board of Trustees Award for Faculty Excellence in Research (2005).
- Clemson University Board of Trustees Award for Faculty Excellence in Research (2004).
- Clemson University Board of Trustees Award for Faculty Excellence in Research (2003).

Student Advisees Awards and Recognitions:

- Major Advisor for Best Student Paper Finalist in ASME Dynamic Systems and Control Conference – DSCC 2008 (Mr. A. Salehi-Khojin, Ph.D. student in Mech. Eng), Awarded by the DSCD of the ASME (2008).

- Major Advisor for the ISA (Instrumentation, Systems and Automation Society) Educational Foundation 2008 Scholarship Awardee (Mr. R. Saeidpourazar, Ph.D. candidate in Mech. Eng.), Awarded by the ISA (2008).
- Major Advisor for the 2008 SPIE Scholarship in Optical Science and Engineering Awardee (Mr. R. Saeidpourazar, Ph.D. student in Mech. Eng.), Awarded by the SPIE (2008).
- Major Advisor for Excellence in Undergraduate Engineering Research Award Recipient (Mr. D. Eils, BS student in Mech. Eng.), Awarded by Clemson University Department of Mechanical Engineering (2008).
- Major Advisor for the 2008 Clemson University Student Leadership Awardee (Mr. R. Saeidpourazar, Ph.D. student in Mech. Eng.), Awarded by Clemson University Division of Student Affairs (2008).
- Major Advisor for one of the few $10,000 Distinguished Ph.D. Fellowship Recipients during 2008-09 academic year at Clemson University (Mr. R. Saeidpourazar, Ph.D. student in Mech. Eng.), Awarded by Clemson University Graduate School (2008).
- Major Advisor for Best Student Paper Finalist in IMECE 2007 (Mr. S. Bashash, Ph.D. student in Mech. Eng), Awarded by the DSCD of the ASME (2007).
- Major Advisor for the 2007 SEMA Memorial Scholarship Awardee (Mr. R. Saeidpourazar, Ph.D. student in Mech. Eng.), Awarded by the SEMA Educational Foundation (2007-08).
- Major Advisor for one of the three Endowed Teaching Fellows in the Department of Mechanical Engineering, Clemson University (Mr. S. Bashash, Ph.D. student, Academic Year 2008/09).
- Major Advisor for one of the few prestigious $10,000 R.C. Edwards Fellowship Recipients for Spring 2008 semester at Clemson University (Mr. S. Eslami, Ph.D. student in Mech. Eng.), Awarded by Clemson University Graduate School (2007).
- Major Advisor for Outstanding Doctoral Research Award Recipient (Mr. S.N. Mahmoodi, Ph.D. Candidate in Mech. Eng.), Awarded by Clemson University Department of Mechanical Engineering (2007).
- Major Advisor for Outstanding Masters Research Award Recipient (Ms. M. Afshari, MS student in Mech. Eng.), Awarded by Clemson University Department of Mechanical Engineering (2007).
- Major Advisor for Excellence in Undergraduate Engineering Research Award Recipient (Mr. J. Eichman, BS student in Mech. Eng.), Awarded by Clemson University Department of Mechanical Engineering (2007).
- Major Advisor for one of the three Endowed Teaching Fellows in the Department of Mechanical Engineering, Clemson University (Mr. R. Saeidpourazar, Ph.D. student, Academic Year 2007/08).
- Major Advisor for one of the only two $10,000 Distinguished Ph.D. Fellowship Recipients during 2007-08 academic year at Clemson University (Mr. S. Bashash, Ph.D. student in Mech. Eng.), Awarded by Clemson University Graduate School (2007).

- Major Advisor for Best Student Paper Finalist in IMECE 2006 (Mr. S. Bashash, Ph.D. student in Mech. Eng), Awarded by the DSCD of the ASME (2006).
- Major Advisor for Outstanding Masters Research Award Recipient (Mr. S. Bashash, MS student in Mech. Eng.), Awarded by Clemson University Department of Mechanical Engineering (2006).
- Major Advisor for one of the three Endowed Teaching Fellows in the Department of Mechanical Engineering, Clemson University (Mr. S.N. Mahmoodi, Ph.D. student, Academic Year 2005/06).
- Major Advisor for Best Student Paper Finalist in IMECE 2004 (Mr. A. Ramaratnum, MS student in Mech. Eng), Awarded by the DSCD of the ASME (2004).
- Major Advisor for Outstanding Masters Research Award Recipient (Mr. M. Dadfarnia, MS student in Mech. Eng.), Awarded by Clemson University Department of Mechanical Engineering (2003).
- Major Advisor for Best Student Paper in IMECE 2002 (Mr. R. Derkhorenian, MS student in Mech. Eng), Awarded by the DSCD of the ASME (2002).
- Major Advisor for Best Student Paper in IMECE 2001 (Mr. D. Knowles, MS student in Mech. Eng), Awarded by the DSCD of the ASME (2001).

Awards and Recognitions As Student:

- Listed in "Who's Who Among Students in American Universities and Colleges", MARQUIS Who'sWho® publishers (1999).
- Outstanding Scholar Fellowship ($26,500/yr for 3 years), Univ. of Connecticut (1995-1998).
- DSCD Student Travel Award, IMECE 1998, Anaheim, California (November 1998).
- 37th IEEE Conference on Decision Control Student Award (1998).
- Doctoral Dissertation Fellowship, University of Connecticut Research Foundation and Research Advisory Council (1997 and 1998)
- MS First Class Honors (+400) at Sharif University of Technology, Awarded by the Minister of Higher Education in Iran, 1995.
- BS First Class Honors (+750) at Sharif University of Technology, Awarded by the President of Iran, 1992.
- Gold and Silver Medals, National Volleyball Univ. Sport Olympiad, Iran (1988 and 1993).

Funded Projects and Grants (total funding: over **$2.0M**; current funding: over **$0.9M**)**:**

- "Structural Damping via Nanotube-Reinforced Functional Composites", PI, National Science Foundation thru Clemson University NSF Center for Advanced Engineering Fibers and Films, 08/16/08 to 06/30/09, **$15,000** *(direct costs).*
- "CAREER – A Mechatronic-based Research and Educational Framework for Next Generation Actuators and Sensors Comprised of Functional Nanotube Composites", PI, National Science Foundation, Nanomanufacturing Program of CMMI Division, 05/16/03 to 04/30/09, **$400,000**.
- "IREE – Collaborative Research and Education in Nanomechanical Cantilever Biosensors", PI, National Science Foundation, Nanomanufacturing Program of CMMI Division, 09/01/06 to 04/30/09, **$40,000**.
- "Acquisition of A Microsystem Analyzer for Integrated Research and Education in Dynamic Analysis, Surface Topography, and Characterization of Active Microstructures", PI, (Co-PIs: D.M. Dawson, Y. Huang, J. Luo, I. Luzinov, C.E. Sosolik, J. Tzeng and A. Vertegel) National Science Foundation, Dynamical Systems Program of CMMI Division, 08/15/06 to 07/31/07, **$315,267** ($280,300 NSF and $34,977 CU cost-share).
- "Piezoelectric Polymeric Materials", PI, Tetramer Technologies Inc., 01/01/08 to 08/15/09, **$45,000.**
- "Distributed Sensors and Actuators via Electronic-Textiles", PI, (Co-PIs: B.C. Goswami and D.M. Dawson) Department of Commerce through National Textile Center, 05/01/04 to 04/30/08, **$470,000**.
- "Tire Nitrogen Filling System", PI, Ingersoll-Rand Industrial Technologies, 02/16/06 to 08/15/08, **$45,000**.
- "Characterization of Mechanisms and Factors Contributing to Vehicle Nonuniformity-Induced Vibration", PI, (Co-PI: I. Haque) Michelin Americas Research & Development Corporation, 09/01/03 to 05/15/06, **$160,000**.
- "Functional Fabric with Embedded Nanotube Actuators and Sensors", PI, (Co-PIs: B.C. Goswami, D.M. Dawson and A.M. Rao) Department of Commerce through National Textile Center, 05/01/03 to 04/30/04, **$50,000**.
- "Next Generation Nanotube-based Actuators: An Initiation Grant", PI, Department of Energy, 05/16/02 to 05/15/03, **$10,000**.
- "Piezoelectric-Based Active Control and Diagnostics for Rubber Materials", PI, (Co-PI: J. Wagner) Michelin Americas Research & Development Corporation, 08/15/01 to 12/31/02, **$26,707**.
- "Vehicle Transfer Function Development and Modeling", PI, (Co-PI: E.H. Law) Michelin Americas Research & Development Corporation, 01/15/02 to 08/15/02, **$10,746**.
- "Effect of Tire Radial Stiffness on Vehicle Comfort and Ride", Co-PI, (PI: E.H. Law) Michelin Americas Research & Development Corporation, 01/15/02 to 12/31/02, **$8,500**.

- "Laptop Program Implementation for ME 202: Foundations of Mechanical Systems", PI, Clemson University Laptop Awards Program, 05/01/02 to 12/31/02, **$2,000**.
- "A novel Technique for Structural Vibration Attenuation using Active Resonator Absorber (ARA)", PI, Clemson University Research Grant Award, 01/01/01 to 06/31/01, **$3,000**.
- "A New Perspective for Semi-Automated Structural Vibration Control", PI, Graduate School Fund for Summer 2000, Northern Illinois University, 05/16/00 to 08/15/00, **$7,200**.
- "Undergraduate/Graduate Laboratory Development and Innovation in System Dynamics & Control", PI, College of Engineering and Engineering Technology, Northern Illinois University, 05/16/99 to 12/31/99, **$30,000**.

Patents:

1. **Jalili, N.**, Wagener, E.H., Ballato, J.M. and Smith, D.W., "Electroactive Polymeric Composite Materials Incorporating Nanostructures", *US Provisional Application Serial No. 60/685,789* (filed May 31, 2005).

Publications:

Technical Project Reports (**Total of 21**)

2. **Jalili, N.** (PI), Hosseini, M. R., and Salehi-Khojin (Grad Students), "Next-generation Actuators and Sensors Comprised of Nanotube-based Materials", *Annual Report to National Science Foundation* (April 2008).
3. **Jalili, N.** (PI), Bradley C. (Grad Student) and Eils, D. (Undergrad Student), "Collaborative Research and Education in Nanomechanical Cantilever Biosensors", *Final Report to National Science Foundation* (October 2007).
4. **Jalili, N.** (PI), Vertegel, A., Sosolik, C.E., Luo, J. and Huang, Y. (Co-PIs), Luzinov, I., Dawson, D.M. and Tzeng, J. (Co-Invs), Mahmoodi, S.N., Afshari, M., Bashash, S., Saeidpourazar, R., Hosseini, M.R., Bradley, C., Salehi-Khojin, A., Qaroush, Y.K., Wang, W., Lake, R., Thompson, G., Qian, H., Kayyar, A., Chen, H. and Burtovyy, O. (Grad Students), Eils, D. and Willis, C. (Undergrad Students), "Acquisition of A Microsystem Analyzer for Integrated Research and Education in Dynamic Analysis, Surface Topography, and Characterization of Active Microstructures", *Final Report to National Science Foundation* (October 2007).
5. **Jalili, N.** (PI) and Raju, A. (Grad Student), "Tire Nitrogen Filling System", *An Interim Report on Phase III Results to Industrial Technologies Sector of Ingersoll Rand Corporation*, (October 2007).
6. **Jalili, N.** (PI), Goswami, B.C. and Dawson, D.M. (Co-PIs), Laxminarayana, K., Rajoria, H., Bashash, S., Hiremath, S., Saeidpourazar, R., Mahmoodi, S.N., McIntyre, M., Braganza, D. and Mohan, S. (Grad Students), and Kikendall, M. and Lau, S. (Undergrad Students), "Distributed Sensors and Actuators via Electronic-Textiles", *Final Report to National Textile Center* (NTC Project: M04-CL05), (September 2007).

7. **Jalili, N.** (PI) and Venkataraman, P. (Grad Student), "Tire Nitrogen Filling System", *Final Report on Phase II Results to Industrial Technologies Sector of Ingersoll Rand Corporation*, (June 2007).
8. **Jalili, N.** (PI), Hosseini, M. R., Salehi-Khojin, A. and Afshari, M. (Grad Students), "Next-generation Actuators and Sensors Comprised of Nanotube-based Materials", *Annual Report to National Science Foundation* (March 2007).
9. **Jalili, N.** (PI), Goswami, B.C. and Dawson, D.M. (Co-PIs), Laxminarayana, K., Rajoria, H., Bashash, S., Hiremath, S., Saeidpourazar, R., McIntyre, M., Braganza, D. and Mohan, S. (Grad Students), and Kikendall, M. and Lau, S. (Undergrad Students), "Distributed Sensors and Actuators via Electronic-Textiles", *Annual Report to National Textile Center* (NTC Project: M04-CL05), (November 2006).
10. **Jalili, N**. (PI), Haque, I. (Co-PI), Ayglon, V. and Mangun, D. (Grad Students), "Development of a Toolkit for Characterization of Non-Uniformity-Induced Vibration on Vehicle Ride and Comfort – Phase II", *Final Report to Michelin Americas Research & Development Corporation* (March 2006).
11. **Jalili, N.** (PI) and Zhou, Y. (Grad Student), "Tire Nitrogen Filling System", *Final Report on Phase I Results to Industrial Technologies Sector of Ingersoll Rand Corporation*, (August 2006).
12. **Jalili, N.** (PI), Hosseini, M.R. and Bashash, S. (Grad Students), "Next-generation Actuators and Sensors Comprised of Nanotube-based Materials", *Annual Report to National Science Foundation* (April 2006).
13. **Jalili, N.** (PI), Goswami, B.C. and Dawson, D.M. (Co-PIs), Bashash, S., Laxminarayana, K., Rajoria, H., Hiremath, S., Braganza, D. (Grad Students), and Kikendall, M. (Undergrad Student), "Distributed Sensors and Actuators via Electronic-Textiles", *Annual Report to National Textile Center* (NTC Project: M04-CL05), (November 2005).
14. **Jalili, N.** (PI), Laxminarayana, K., Ramaratnam, A., Rajoria, H (Grad Students), "Next-generation Actuators and Sensors Comprised of Nanotube-based Materials", *Annual Report to National Science Foundation* (May 2005).
15. **Jalili, N.** (PI), Haque, I. (Co-PI), Cherian, V. and Dillinger, B. (Grad Students), "Development of a Toolkit for Characterization of Non-Uniformity-Induced Vibration on Vehicle Ride and Comfort", *Final Report to Michelin Americas Research & Development Corporation* (January 2005).
16. **Jalili, N.** (PI), Goswami, B.C., Rao, A.M. and Dawson, D.M. (Co-PIs), Yuan, N., Laxminarayana, K., Ramaratnam, A., Rajoria, H., Cherian, V., Lonkar, K. and Zhang, X. (Grad Students), "Functional Fabric with Embedded Nanotube Actuators/Sensors", *Final Report to National Textile Center* (NTC Project: M03-CL07s), (November 2004).
17. **Jalili, N.** (PI), Goswami, B.C. and Dawson, D.M. (Co-PIs), Yuan, N., Laxminarayana, K., Bashash, S., Rajoria, H., Abraham, A. and Braganza, D. (Grad Students), "Distributed Sensors and Actuators via Electronic-Textiles", *Annual Report to National Textile Center* (NTC Project: M04-CL05), (November 2004).
18. **Jalili, N.** (PI), Laxminarayana, K., Ramaratnam, A., Rajoria, H (Grad Students), "Next-generation Actuators and Sensors Comprised of Nanotube-based Materials", *Annual Report to National Science Foundation* (May 2004).

19. Jalili, N. (PI), Goswami, B.C., Rao, A.M. and Dawson, D.M. (Co-PIs), Laxminarayana, K., Ramaratnam, A., Rajoria, H., Cherian, V., Lonkar, K. and Zhang, X. (Grad Students), "Functional Fabric with Embedded Nanotube Actuators/Sensors", *Annual Report to National Textile Center* (NTC Project: M03-CL07s), (November 2003).

20. Jalili, N. (PI), Wagner, J. (Co-PI) and Grier, M. (Grad Student), "Piezoelectric-Based Active Control and Diagnostics for Rubber Materials, Phase II: Damping of Structural Vibration with Piezoelectric Materials and Passive Electrical Networks", *Final Report to Michelin Americas Research & Development Corporation* (January 2003).

21. Jalili, N. (PI), Law, E.H. (Co-PI) and Grier, M. (Grad Student), "Vehicle Transfer Function Development and Modeling: Parametric and Nonparametric Vehicle Model Identification", *Final Report to Michelin Americas Research & Development Corporation* (July 2002).

22. Jalili, N. (PI), Wagner, J. (Co-PI), Grier, M., Junkes, M. and Noble, D. (Undergrad Students), "Active Vibration Control of Rubber Beams Using Piezoelectric Patch Actuators, Phase I", *Final Report to Michelin Americas Research & Development Corporation* (December 2001).

Books and Monographs (**Total of 5**)

23. Jalili, N., *Piezoelectric-based Vibration-control Systems: Applications to Micro/Nano Sensors and Actuators*, in preparation, Springer, Norwell, MA (scheduled to appear in 2009).

24. Afshari, M. and **Jalili, N.**, *Nanomechanical Cantilever Biosensors: Conceptual Design, Recent Developments and Practical Implementation*, Chapter 13 of Biomedical Applications of Vibration and Acoustics for Imaging and Characterization, ASME PRESS, **13**, 353-374 (2008).

25. Jalili, N. and Esmailzadeh, E., *Vibration Control*, Chapter 23 of the Vibration and Shock Handbook, CRC Press LLC, ISBN/ISSN: 0-84931580, **23**, 1047-1092 (2005).

26. Jalili, N., *Semi-active Suspension Systems*, Chapter 12 of the Mechanical Systems Handbook: Modeling, Measurement and Control, CRC Press LLC, ISBN/ISSN: 0-849385962, **12**, 197-220 (2001).

27. Jalili, N., *Laboratory Manual for Control Systems Design and Implementation*, Version 1.0, Northern Illinois University Bookstore Publication, DeKalb, IL (2000).

Refereed Journal Publications (**Total of 85**)

A. Submitted Papers: **(Total of 20)**

28. Saeidpourazar, R., Bashash, S. and **Jalili, N.**, "Laserless Atomic Force Microscopy: A Fast and Reliable Solution to Imaging Surfaces with Complex Texture", in preparation for submission to *IEEE/ASME Transactions on Mechatronics* (November 2008).

29. Hosseini, M.R. and **Jalili, N.**, "Comprehensive Multiphysics, Multiscale Analysis of CVD-based CNTs Fabrication Process – Part I: CVD Reactor Scale Modeling", in preparation for submission to *Nanotechnology* (November 2008).

30. Hosseini, M.R. and **Jalili, N.**, "Comprehensive Multiphysics, Multiscale Analysis of CVD-based CNTs Fabrication Process – Part II: Substrate Scale Modeling", in preparation for submission to *Nanotechnology* (November 2008).

31. Bradley, C., Nett, S., **Jalili, N.**, Chu, L. and Berger, R., "Application of Static Mode Microcantilever Sensor for Detection of Polymers Lower Critical Solution Temperature", in preparation for submission to *Applied Physics Letter* (November 2008).

32. Ansari, M., Esmailzadeh, E. and **Jalili, N.**, "Vibration and Parameters Sensitivity Analyses of Rocking-mass Vibrating Gyroscopes", submitted to *Journal of Sound and Vibration* (October 2008).

33. Bashash, S., Vora, K. and **Jalili, N.**, "Distributed-Parameters Modeling and Control of Rod-Like Solid-State Actuators", submitted to *Journal of Vibration and Control* (October 2008).

34. Hosseini, M.R., **Jalili, N.** and Bruce, D.A. "A Time-Dependent Multiphysics, Multiphase Modeling Framework for Carbon Nanotube Synthesis using Chemical Vapor Deposition", submitted to *Physical Chemistry C* (October 2008).

35. Hosseini, M.R., **Jalili, N.** and Bruce, D.A. "Experimental Study of Feed Gas Ratio and Fabrication Temperature Effects on CNTs and Amorphous Carbon Production during Chemical Vapor Deposition Process", submitted to *Thin Solid Films* (October 2008).

36. Bashash, S., Saeidpourazar, R. and **Jalili, N.**, "Tracking Control of Time-varying Discontinuous Trajectories with Application to Probe-based Imaging and Nanopositioning", submitted to *Control Engineering Practice* (October 2008).

37. Ansari, M., Esmailzadeh, E. and **Jalili, N.**, "Exact Frequency Analysis of a Rotating Cantilever Beam with Tip Mass Subjected to Torsional-Bending Vibrations", submitted to *Journal of Vibration Control* (August 2008).

38. Delnavaz, A., Mahmoodi, S.N., **Jalili, N.** and Zohoor, H., "Linear and Nonlinear Vibration and Frequency Response Analyses of Microcantilevers subjected to Tip-Sample Nonlinear Interaction", submitted to *International Journal of Nonlinear Mechanics* (August 2008).

39. Mahboobi, S. H., Meghdari, A., **Jalili, N.** and Amiri F., "Atomistic Simulation of Metallic Nanoparticles in Nanomanipulation Process", submitted to *International Journal of Nanomanufacturing* (July 2008).

40. Mahmoodi, S.N., **Jalili, N.**, Daqaq, M.F. and Ahmadian, M., "Subharmonics Analysis of Nonlinear Flexural Vibrations of Piezoelectrically Actuated Microcantilevers", submitted to *Nonlinear Dynamics* (July 2008).

41. Mahboobi, S. H., Meghdari, A., **Jalili, N.** and Amiri F., "Qualitative Study of Nanoassembly Process: 2D Molecular Dynamics Simulations", submitted to *Chaos, Sol. and Fractals* (July 2008).

42. Mahmoodi, S.N. and **Jalili, N.**, "Piezoelectrically-driven Microcantilevers: An Experimental Nonlinear Vibration Analysis", submitted to *Sensors and Actuators A: Physical* (July 2008).

43. Mahboobi, S. H., Meghdari, A., **Jalili, N.** and Amiri F., "Planar Molecular Dynamics Simulation of Metallic Nanoparticles Manipulation", submitted to *Micro Nano Letters* (June 2008).

44. Salehi-Khojin, A., Bashash, S., **Jalili, N.**, Thompson, G.L. and Vertegel, A., "Modeling Piezoresponse Force Microscopy for Low Dimensional Materials Characterization: Theory and Experiment", submitted to *ASME Journal of Dynamic Systems, Measurement and Control* (June 2008).

45. Bashash, S., Salehi-Khojin, A. and **Jalili, N.**, "A New Framework for Modal Analysis and Forced Vibrations of Flexible Euler-Bernoulli Beams with Multiple Cross-sectional Discontinuities", submitted to *Journal of Vibration* and Control (April 2008).

46. Salehi-Khojin, A., Hosseini, M.R. and **Jalili, N.**, "Underlying Mechanics of Active Nanocomposites with Tunable Properties", submitted to *Composite Science Technology* (March 2008).

47. Mahmoodi, S.N., Daqaq, M.F. and **Jalili, N.,** "On the Nonlinear-Flexural Response of Microcantilever Sensors", submitted to *Journal of Sensors and Actuators A: Physical* (February 2008).

B. Published or in Print Papers: **(Total of 65)**

48. Bashash, S., Salehi-Khojin, A., **Jalili, N.**, Thompson, G.L., Vertegel, A., Müller, M. and Berger, R., "Mass Detection of Elastically-distributed Ultrathin Layers using Piezoresponse Force Microscopy", *Journal of Micromechanics and Microengineering*, accepted pending revision (October 2008).

49. Salehi-Khojin, A., Bashash, S., **Jalili, N.**, Müller, M. and Berger, R., "Nanomechanical Cantilever Active Probes for Ultrasmall Mass Detection", accepted pending minor revisions, *Journal of Applied Physics* (October 2008).

50. Salehi-Khojin, A., **Jalili, N.** and Mahmoodi, S.N., "Vibration Analysis of Vector Piezoresponse Force Microscopy with Coupled Flexural-Longitudinal and Lateral-Torsional Motions", accepted, *Journal of Sound and Vibration* (October 2008).

51. Mahboobi, S. H., Meghdari, A., **Jalili, N.** and Amiri F., "Qualitative Study of Nanocluster Positioning Process: Molecular Dynamics Simulations", accepted, *Current Applied Physics Journal* (October 2008).

52. Bashash, S. and **Jalili, N**., "Adaptive Robust Control of Coupled Parallel Piezo-flexural Nano-positioning Stages", accepted, *IEEE/ASME Transactions on Mechatronics* (July 2008)

53. Saeidpourazar, R. and **Jalili, N.,** "Towards Microcantilever-based Force Sensing and Manipulation: Modeling, Control Development and Implementation", *The International Journal of Robotics Research*, in print, 1-20 (July 2008).

54. Saeidpourazar, R. and **Jalili, N**., "Microcantilever-based Force Tracking with Applications to High-Resolution Imaging and Nanomanipulation", *IEEE Transactions on Industrial Electronics*, **55**(11), 1-9 (November 2008).

55. Saeidpourazar, R. and **Jalili, N.**, "Nano-robotic Manipulation using a RRP Nanomanipulator: Part B – Robust Control of Manipulator's Tip using Fused Visual Servoing and Force Sensor Feedbacks", *Journal of Applied Mathematics and Computation*, in-print, 1-15 (2008).

56. Saeidpourazar, R. and **Jalili, N.**, "Nano-robotic Manipulation using a RRP Nanomanipulator: Part A –Mathematical Modeling and Development of a Robust Adaptive Driving Mechanism", *Journal of Applied Mathematics and Computation*, in-print, 1-10 (2008).

57. Saeidpourazar, R and **Jalili, N.**, "Towards Fused Vision and Force Robust Feedback Control of Nanorobotic-based Manipulation and Grasping", *Mechatronics, An International Journal*, **18**, 566-577 (2008).

58. Salehi-Khojin, A., Bashash, S. and **Jalili, N.**, "Modeling and Experimental Vibration Analysis of Nanomechanical Cantilever Active Probes", *Journal of Micromechanics and Microengineering*, **18**, 085008+11 (2008).

59. Mahmoodi, S.N. and **Jalili, N.,** "Coupled Flexural-Torsional Nonlinear Vibrations of Piezoelecrically-actuated Microcantilevers with Application to Friction Force Microscopy", *ASME Journal of Vibration and Acoustics*, **130** (6), 061003+10 (2008).

60. Bashash, S. and **Jalili, N**., "A Polynomial-based Linear Mapping Strategy for Feedforward Compensation of Hysteresis in Piezoelectric Actuators", *ASME Journal of Dynamic Systems, Measurement and Control*, **130**, 031008+10 (2008).

61. Salehi-Khojin, A. and **Jalili, N.**, "A Comprehensive Model for Load Transfer in Nanotube Reinforced Piezoelectric Polymeric Composites subjected to Electro-Thermo-Mechanical Loadings", *Journal of Composites, Part B: Engineering*, **39** (6), 986-998 (2008).

62. Mahmoodi, S.N., **Jalili, N.** and Daqaq, M.F., "Modeling, Nonlinear Dynamics and Identification of a Piezoelectrically-actuated Microcantilever Sensor", *IEEE/ASME Transactions on Mechatronics*, **13** (1), 1-8 (2008).

63. Salehi-Khojin, A. and **Jalili, N.**, "Buckling of Boron Nitride Nanotube Reinforced Piezoelectric Polymeric Composites subject to Combined Electro-Thermo-Mechanical Loadings", *Composites Science and Technology*, **68** (6), pp. 1489-1501 (2008).

64. Mahmoodi, S.N., Afshari, M. and **Jalili, N.**, "Nonlinear Vibrations of Piezoelectric Microcantilevers for Biologically-induced Surface Stress Sensing", *Journal of Communications in Nonlinear Science and Numerical Simulation*, **13**, 1964-1977 (2008).

65. Mahmoodi, S.N., **Jalili, N.**, and Khadem, S.E., "An Experimental Investigation of Nonlinear Vibration and Frequency Response Analysis of Cantilever Viscoelastic Beams", *Journal of Sound and Vibration*, **311** (3-5), 1409-1419 (2008).

66. Bhadbhade, V. and **Jalili, N.,** Mahmoodi, S.N., "A Novel Piezoelectrically Actuated Flexural/Torsional Vibrating Beam Gyroscope", *Journal of Sound and Vibration*, **311**, 1305-1324 (2008).

67. Dillinger, B.L., **Jalili, N.** and Haque, I., "Analytical Modeling and Experimental Verification of Tire Nonuniformity", *International Journal of Vehicle Design*, **46** (1), 1-22 (2008).

68. Gurjar, M. and **Jalili, N.**, "Towards Ultrasmall Mass Detection using Adaptive Self-sensing Piezoelectrically-driven Cantilevers", *IEEE/ASME Transactions on Mechatronics*, **12** (6), 680-688 (2007).

69. Bashash, S. and **Jalili, N.**, "Robust Multiple-frequency Trajectory Tracking Control of Piezoelectriccally-driven Micro/Nano-positioning Systems", *IEEE Transactions on Control Systems Technology*, **15** (5), 867-878 (2007).

70. Mahmoodi, S.N. and **Jalili, N.,** "Nonlinear Vibrations and Frequency Response Analysis of Piezoelectrically-driven Microcantilevers", *International Journal of Non-Linear Mechanics*, **42** (4), 577-587 (2007).

71. Afshari, M. and **Jalili, N.**, "Towards Nonlinear Modeling of Molecular Interactions Arising from Adsorbed Biological Species on the Microcantilever Surface", *International Journal of Non-Linear Mechanics*, **42** (4), 588-595 (2007).

72. Bashash, S. and **Jalili, N**., "Intelligent Rules of Hysteresis in Feedforward Trajectory Control of Piezoelectrically-driven Nanostagers", *Journal of Micromechanics and Microengineering*, **17**, 342-349 (2007).

73. Esmaeili, M., **Jalili, N.** and Durali, M., "Dynamic Modeling and Performance Evaluation of A Vibrating Microgyroscope under General Support Motion", *Journal of Sound and Vibration*, **301** (1-2), 146-164 (2007).

74. Pishkenari, H.N., **Jalili, N.** and Meghdari, A., "Acquisition of High-Precision Images for Non-Contact Atomic Force Microscopy", *International Journal of Mechatronics*, **16** (10), 655-664 (2006).

75. Esmaeili, M., Durali, M. and **Jalili, N.,** "Ring Microgyroscope Modeling and Performance Evaluation", *Journal of Vibration and Control*, **12** (5), 537-553 (2006).

76. Bashash, S. and **Jalili, N.**, "Underlying Memory-dominant Nature of Hysteresis in Piezoelectric Materials", *Journal of Applied Physics*, **100** (1), 14103-14109 (2006).

77. Ramaratnam, A. and **Jalili, N.**, "Reinforcement of Piezoelectric Polymers with Carbon Nanotubes: Pathway to Development of Next-Generation Sensors", *Journal of Intelligent Material Systems and Structures*, **17** (3), 199-208 (2006).

78. Mahmoodi, S.N., Khadem, S.E. and **Jalili, N.,** "Theoretical Development and Closed-Form Solution of Nonlinear Vibrations of A Directly Excited Nanotube-Reinforced Composite Cantilevered Beam", *Archive of Applied Mechanics*, **75**, 153-163 (2006).

79. Ramaratnam, A. and **Jalili, N.**, "A Switched Stiffness Approach for Structural Vibration Control: Theory and Real-time Implementation", *Journal of Sound and Vibration*, **291** (1-2), 258-274 (2006).

80. Fang, Y., Feemster, M., Dawson D.M. and **Jalili, N.**, "Nonlinear Control Techniques For An Atomic Force Microscope System", *Journal of Control Theory & Applications*, **3** (1), 85-92 (2005).

81. Laxminarayana, K. and **Jalili, N.,** "Functional Nanotube-based Textiles: Pathway to Next Generation Fabrics with Enhanced Sensing Capabilities", *Textile Research Journal*, **75** (9), 670-680 (2005).

82. Rajoria, H. and **Jalili, N.**, "Passive Vibration Damping Enhancement Using Carbon Nanotube-Epoxy Reinforced Composites", *Composites Science and Technology*, **65** (14), 2079-2093 (2005).

83. Dadfarnia, M., **Jalili, N.** and Esmailzadeh, E., "A Comparative Study of Galerkin Approximation Utilized in the Timoshenko Beam Theory", *Journal of Sound and Vibration*, **280** (3-5), 1132-1142 (2005).

84. Dadfarnia, M., **Jalili, N**., Xian, B. and Dawson, D.M., "Lyapunov-based Vibration Control of Translational Euler-Bernoulli Beams using the Stabilizing Effect of Beam Damping Mechanisms", *Journal of Vibration and Control*, **10**, 933-961 (2004).

85. Jalili, N., Dadfarnia, M. and Dawson, D.M., "A Fresh Insight into the Microcantilever-Sample Interaction Problem in Non-Contact Atomic Force Microscopy", *ASME Journal of Dynamic Systems, Measurements and Control*, **126** (2), 327-335 (2004).

86. Dadfarnia, M., **Jalili, N.**, Xian, B. and Dawson, D.M., "A Lyapunov-based Piezoelectric Controller for Flexible Cartesian Robot Manipulators", *ASME Journal of Dynamic Systems, Measurements and Control*, **126** (2), 347-358 (2004).

87. Jalili, N. and Laxminarayana, K., "A Review of Atomic Force Microscopy Imaging Systems: Application to Molecular Metrology and Biological Sciences", *International Journal of Mechatronics*, **14** (8), 907-945 (2004).

88. Jalili, N. and Knowles, D.W., "Structural Vibration Control using an Active Resonator Absorber: Modeling and Control Implementation", *Smart Materials and Structures*, **13** (5), 998-1005 (2004).

89. Dadfarnia, M., **Jalili, N**., Liu, Z. and Dawson, D.M., "An Observer-based Piezoelectric Control of Flexible Cartesian Robot Arms: Theory and Experiment", *Journal of Control Engineering Practice*, **12** (8), 1041-1053 (2004).

90. Esmailzadeh, E. and **Jalili, N.**, "Response to Comments on 'Vehicle-passenger-structure Interaction of Uniform Bridges Traversed by Moving Vehicles (2003 J. of Sound and Vibration **260**, 611-635)' ", *Journal of Sound and Vibration*, **271**, 1099-1112 (2004).

91. Derkhorenian, R., **Jalili, N.** and Dawson, D.M., "Design and Real-time Implementation of an Adaptive Vibration Absorber for Uncertain Mechanical Systems subjected to Unknown Disturbances", *Journal of Vibration and Control*, **10**, 55-84 (2004).

92. Jalili, N., Wagner, J. and Dadfarnia, M., "A Piezoelectric Driven Ratchet Actuator Mechanism with Application to Automotive Engine Valves", *International Journal of Mechatronics*, **13**, 933-956 (2003).

93. Xian, B., **Jalili, N.**, Dawson, D.M. and Fang, Y., "Adaptive Tracking Control of Linear Uncertain Mechanical Systems Subjected to Unknown Sinusoidal Disturbances", *ASME Journal of Dynamic Systems, Measurements and Control*, **125** (1), 129-134 (2003).

94. Jalili, N., and Esmailzadeh, E., "A Nonlinear Double-winged Adaptive Neutralizer for Optimum Structural Vibration Suppression", *Journal of Communications in Nonlinear Science and Numerical Simulation*, **8** (2), 113-134 (2003).

95. Esmailzadeh, E. and **Jalili, N.**, "Vehicle-Passenger-Structure Interaction of Uniform Bridges Traversed By Moving Vehicles", *Journal of Sound and Vibration*, **260** (4), 611-635 (2003).

96. Jalili, N., "A Comparative Study and Analysis of Semi-Active Vibration-Control Systems", *ASME Journal of Vibration and Acoustics*, **124**, 593-605 (2002).

97. Jalili, N. and Esmailzadeh, E., "Dynamic Interaction of Vehicles Moving on Uniform Bridges", *Journal of Multi-body Dynamics*, **216**, 343-350 (2002).

98. Jalili, N. and Fallahi, B., "Design and Dynamics Analysis of an Adjustable Inertia Absorber for Semi-Active Structural Vibration Attenuation", *ASCE Journal of Engineering Mechanics*, **128** (12), 1342-1348 (2002).

99. Jalili, N. and Esmailzadeh, E., "Adaptive-passive Structural Vibration Attenuation using Distributed Absorbers", *Journal of Multi-body Dynamics*, **216**, 223-235 (2002).

100. **Jalili, N.** and Esmailzadeh, E., "Closure to 'Discussion of 'Optimum Design of Vibration Absorbers for Structurally Damped Timoshenko Beams (1998, ASME J. Vib. Acoust., 120, pp. 833-841)' ", *ASME Journal of Vibration and Acoustics*, **123** (3), 549 (2001).

101. **Jalili, N.**, "An Infinite Dimensional Distributed Base Controller for Regulation of Flexible Robot Arms", *ASME Journal of Dynamic Systems, Measurements and Control*, **123** (4), 712-719 (2001).

102. **Jalili, N.**, Fallahi, B. and Kusculuoglu, Z.K., "A New Approach to Semi-Active Vibration Suppression using Adjustable Inertia Absorbers", *International Journal of Modeling and Simulation*, **21** (2), 148-154 (2001).

103. **Jalili, N.** and Esmailzadeh, E., "Optimum Active Vehicle Suspensions with Actuator Time Delay", *ASME Journal of Dynamic Systems, Measurements and Control*, **123**, 54-61 (2001).

104. **Jalili N.**, "A New Perspective for Semi-Automated Structural Vibration Control", *Journal of Sound and Vibration*, **238** (3), 481-494 (2000).

105. **Jalili, N.** and Olgac, N., "Identification and Re-tuning of Optimum Delayed Feedback Vibration Absorber", *AIAA Journal of Guidance, Control, and Dynamics*, **23** (6), 961-970 (2000).

106. **Jalili, N.** and Olgac, N., "A Sensitivity Study of Optimum Delayed Feedback Vibration Absorber", *ASME Journal of Dynamic Systems, Measurements, and Control*, **122**, 314-321 (2000).

107. **Jalili, N.** and Olgac, N., "Multiple Identical Delayed-Resonator Vibration Absorbers for Multi-Degree-of-Freedom Mechanical Structures", *Journal of Sound and Vibration*, **223** (4), 567-585 (1999).

108. Olgac, N. and **Jalili, N.**, "Optimal Delayed Feedback Vibration Absorber for Flexible Beams", *Smart Structures*, **65**, 237-246 (1999).

109. Esmailzadeh, E. and **Jalili, N.**, "Optimum Design of Vibration Absorbers for Structurally Damped Timoshenko Beams", *ASME Journal of Vibration and Acoustics*, **120**, (4), 833-841 (1998).

110. **Jalili, N.** and Olgac, N., "Time-Optimal/Sliding Mode Control Implementation for Robust Tracking of Uncertain Flexible Structures", *International Journal of Mechatronics*, **8** (2), 121-142 (1998).

111. Olgac, N. and **Jalili, N.**, "Modal Analysis of Flexible Beams with Delayed-Resonator Vibration Absorber: Theory and Experiments", *Journal of Sound and Vibration*, **218** (2), 307-331 (1998).

112. Esmailzadeh, E. and **Jalili, N.**, "Parametric Response of Cantilever Timoshenko Beams with Tip Mass Under Harmonic Support Motion", *International Journal of Non-Linear Mechanics*, **33** (5), 765-781 (1998).

Conference Proceedings (**Total of 134**)

A. *Submitted Papers:* **(Total of 4)**

113. Salehi-Khojin, A. Bashash, S., **Jalili, N.**, Thompson, G.L. and Vertegel, A., "*Invited:* Detection of Local Stiffness and Piezoelectric Properties of Materials via Piezoresponse Force Microscopy", submitted to *2009 American Control Conference*, St. Louis, Missouri (June 2009).

114. Bashash, S., Saeidpourazar, R. and **Jalili, N.**, "*Invited:* Tracking Control of Time-Varying Discontinuous Trajectories with Application to Probe-Based Imaging and Nanopositioning", submitted to *2009 American Control Conference*, St. Louis, Missouri (June 2009).

115. Mahboobi, S. H., Meghdari, A., **Jalili, N.** and Amiri F., "Effect of Metallic Ultra Thin Film Lubricant on Nanomanipulation Process: A Planar Computational Study", submitted to *ICNN 2008*, Tabriz, IRAN (October 28-30, 2008).

116. Mahboobi, S. H., Meghdari, A., **Jalili, N.** and Amiri F., "Planar Molecular Dynamics Simulation of Metallic Nanoparticles Manipulation", submitted to *IEEE Nano 2008*, Texas (August 18-21, 2008).

B. *Published or in Print Papers:* **(Total of 130)**

117. Hosseini, M.R. and **Jalili, N.**, "Atomic Scale Investigation of Nanoparticle and Fabrication Temperature Effects on Carbon Nanotube Diameter and Chirality", to appear in *Proceedings of 2008 ASME International Mechanical Engineering Congress & Exposition*, Boston, MA (November 2-6, 2008).

118. Mahmoodi, S.N. and **Jalili, N.**, "Experimental Nonlinear Vibration Analysis of Piezoelectrically Actuated Microcantilevers", to appear in *Proceedings of 2008 ASME International Mechanical Engineering Congress & Exposition*, Boston, MA (November 2-6, 2008).

119. Hosseini, M.R. and **Jalili, N.**, "A Comprehensive Multiphysics Multiscale Study of Reactor Chamber and Substrate Orientation Effects on Carbon Nanotube Synthesis during Chemical Vapor Deposition Process", to appear in *Proceedings of 2008 ASME International Mechanical Engineering Congress & Exposition*, Boston, MA (November 2-6, 2008).

120. Mahboobi, S. H., Meghdari, A., **Jalili, N.** and Amiri F., "Qualitative Study of Nanocluster positioning Process: 2D Molecular Dynamics Simulations", to appear in *Proceedings of 2008 ASME International Mechanical Engineering Congress & Exposition*, Boston, MA (November 2-6, 2008).

121. Saeidpourazar, R. and **Jalili, N.**, "Forced-controlled Nanomanipulation utilizing Nano-Robotic Manipulator and Nanomechanical Cantilever", to appear in *Proceedings of 2008 ASME Smart Materials, Adaptive Structures and Intelligent Systems Conference (SMASIS 2008)*, Washington, DC (October 28-30, 2008).

122. Eslami, S. and **Jalili, N.**, "A Neural Network-based Controller for A Piezoelectrically-actuated Nano/Micromanipulator", to appear in *Proceedings of 2008 ASME Smart Materials, Adaptive Structures and Intelligent Systems Conference (SMASIS 2008)*, Washington, DC (October 28-30, 2008).

123. Salehi-Khojin, A., Bashash, S. and **Jalili, N.**, "Modeling and Experimental Vibration Analysis of Nanomechanical Cantilever Active Probes with Application to Ultra Small Mass Detection", to appear in *Proceedings of the 2008 ASME Dynamic Systems and Control Conference (DSCC'08)*, Ann Arbor, MI (October 20-22, 2008).

124. Bashash, S., Vora, K. and **Jalili, N.**, "Modeling and Forced Vibration Analysis of Rod-Like Solid-State Actuators", to appear in *Proceedings of the 2008 ASME Dynamic Systems and Control Conference (DSCC'08)*, Ann Arbor, MI (October 20-22, 2008).

125. Saeidpourazar, R. and **Jalili, N.**, "Microcantilever-based Force Tracking with Applications to High-Resolution Imaging and Nanomanipulation", to appear in *Proceedings of the 2008*

ASME Dynamic Systems and Control Conference (DSCC'08), Ann Arbor, MI (October 20-22, 2008).

126. Bashash, S., Vora, K., **Jalili, N.**, Evans, P.G., Dapino, M.J. and Slaughter, J., "Modeling Major and Minor Hysteresis Loops In Galfenol-Driven Micro-Positioning Actuators Using A Memory-Based Hysteresis Framework", to appear in *Proceedings of the 2008 ASME Dynamic Systems and Control Conference (DSCC'08),* Ann Arbor, MI (October 20-22, 2008).

127. Mahmoodi, S.N., **Jalili, N.** and Daqaq, M., "Nonlinear Dynamics of A Piezoelectrically-actuated Microcantilever Sensor", *Proceedings of 2008 ENOC,* Saint Petersburg, Russia (June 30–July 4, 2008).

128. Saeidpourazar, R. and **Jalili, N.**, "Towards Nanomechanical Cantilever-based Control and Manipulation", *Proceedings of* 2008 *International Symposium on Flexible Automation (ISFA),* Atlanta, GA (June 23–26, 2008).

129. Mahmoodi, S.N, Daqaq, M.F., and **Jalili, N**., "Nonlinear Flexural Vibrations of Microcantilever Sensors", *Proceedings of 12th Conference on Nonlinear Vibrations, Dynamics and Multibody Systems*, Blacksburg, VA (June 1-5, 2008).

130. Bradley, C., Mahmoodi, S.N., **Jalili, N.**, Mueller, M. And Berger, R., "*Invited:* Focused Ion Beam Deposited Mass Detection using Piezoelectrically-actuated Active Probes", *Proceedings of 2008 International Workshop on Nanomechanical Cantilever Sensors,* Mainz, Germany (May 19-21, 2008).

131. Mahboobi, S. H., Meghdari, A., **Jalili, N.** and Amiri F., "Two-Dimensional Atomistic Simulation of Metallic Nanoparticles Pushing", *Proceeding of the 5th International Symposium on Mechatronics and its Applications (ISMA08),* Amman, Jordan (May 27-29, 2008).

132. Bashash, S., Salehi-Khojin, A. and **Jalili, N.**, "Forced Vibration Analysis of Flexible Euler-Bernoulli Beams with Geometrical Discontinuities", *Proceedings of 2008 American Control Conference,* Seattle, WA (June 2008).

133. Saeidpourazar, R. and **Jalili, N.**, "New Modeling and Control Framework for MEMS Characterization utilizing Piezoresistive Microcantilever Sensors", *Proceedings of 2008 American Control Conference*, Seattle, WA (June 2008).

134. Saeidpourazar, R., Bradley, C., **Jalili, N.** and Daqaq, M., "Microcantilever-based Biosensing Enhancement using Delayed Feedback Control", *Proceedings of 2008 IBE Conference*, Chapel Hill, NC (March 2008).

135. Afshari, M., Saeidpourazar, R., **Jalili, N.** and Daqaq, M., "Experimental Investigation of DNA Immobilization using Nanomechanical Cantilever Biosensor", *Proceedings of 2008 IBE Conference*, Chapel Hill, NC (March 2008).

136. Saeidpourazar, S., Mahmoodi, S.N. and **Jalili, N.**, "Piezoelectric- and Piezoresistive-based Microcantilever Sensors and Actuators", *Proceedings of 2008 NSF Engineering Research and Innovation Conference*, Knoxville, Tennessee (January 2008).

137. Hosseini, M.R. and **Jalili, N.**, "Towards Multiphysics, Multiscale Modeling and Control of Nanotube-based Piezoelectric Materials for Mass/Heat Sensing Application", *Proceedings of 2008 NSF Engineering Research and Innovation Conference*, Knoxville, Tennessee (January 2008).

138. Davis, Z., Tang, M., Hales, J., Bradley, C., Boisen, A. and **Jalili, N.**, "Au Nanoparticle Detection using Silicon Nitride Micro/nano Mechanical Devices with Integrated Strain", *Proceedings of the IEEE International Conference of Nano/Micro Engineered and Molecular Systems* (2008).

139. Mahboobi, S. H., Meghdari, A., **Jalili, N.** and Amiri F., "Atomistic Simulation of Metallic Nanoparticles in Nanomanipulation Process", *Proceedings of the 2nd Conference on Nanostructures* (NS2008), Kish University, Kish Island, Iran (March 11-14, 2008).

140. Delnavaz, A., **Jalili, N.** and Zohoor, H., "Vibration Control of AFM tip for Nano-manipulation using Combined Sliding Mode Techniques", *Proceedings of 7th IEEE International Conference on Nanotechnology* (IEEE-Nano 2007), Hong Kong, 2007.

141. Saeidpourazar, R. and **Jalili, N.,** "Automated Nanomanipulation utilizing Piezoresistive-based Microcantilever Force Sensors and Actuators", *Proceedings of 2007 ASME International Mechanical Engineering Congress & Exposition,* Seattle, WA (November 2007).

142. Hosseini, M.R. and **Jalili, N.**, "Multiphysics, Multiscale Modeling of Carbon Nanotube Synthesis Process by Chemical Vapor Deposition", *Proceedings of 2007 ASME International Mechanical Engineering Congress & Exposition,* Seattle, WA (November 2007).

143. Salehi-Khojin, A. and **Jalili, N.,** "A New Modeling Framework for Piezoresponse Force Microscopy", *Proceedings of 2007 ASME International Mechanical Engineering Congress & Exposition,* Seattle, WA (November 2007).

144. Saeidpourazar, R., Ayalew B. and **Jalili, N.,** "Design and Development of H∞ and μ-synthesis Controllers for Nanorobotic Manipulation and Grasping Applications", *Proceedings of 2007 ASME International Mechanical Engineering Congress & Exposition,* Seattle, WA (November 2007).

145. Bradley, C., Daqaq, M.F. and **Jalili, N.**, "A Time-delayed Sensitivity Enhancement Strategy for Ultrasmall Mass Detection using Parametrically-excited Cantilevers", *Proceedings of 2007 ASME International Mechanical Engineering Congress & Exposition*, Seattle, WA (November 2007).

146. Bashash, S. and **Jalili, N.**, "Adaptive Robust Control of Piezo-flexural Nano-positioning Stages with Parametric Uncertainties, Unknown Hysteresis nonlinearity, and External Disturbances", *Proceedings of 2007 ASME International Mechanical Engineering Congress & Exposition,* Seattle, WA (November 2007).

147. Salehi-Khojin, A. and **Jalili, N.,** "An Analytical Modeling Framework for Boron Nitride Nanotube based Microcantilever Actuators with Thermal Effects Consideration", *Proceedings of 2007 ASME International Mechanical Engineering Congress & Exposition,* Seattle, WA (November 2007).

148. Saeidpourazar, R. and **Jalili, N.,** "Design and Development of A Fused Vision Force Controller for Nanofiber Grasping and Manipulation", *Proceedings of 2007 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference,* Las Vegas, NV (September 4-7, 2007).

149. Bashash, S., Ayalew, B. and **Jalili, N.**, "H^{∞} Robust Control of Systems with Unknown Hysteresis Nonlinearity and Parametric Uncertainties", *Proceedings of 2007 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference,* Las Vegas, NV (September 4-7, 2007).

150. Mahmoodi, S.N., Afshari, M. and **Jalili, N.,** "Nonlinear Vibrations of Microcantilevers for Biologically-induced Surface Stress Sensing", *Proceedings of 2007 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Las Vegas, NV (September 4-7, 2007).

151. Hosseini, M.R. and **Jalili, N.**, "A New Nanomechanical Cantilever Sensing Paradigm using Piezoelectric Boron Nitride Nanotube-based Actuation", *Proceedings of 2007 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Las Vegas, NV (September 4-7, 2007).

152. Salehi-Khojin, A. and **Jalili, N.**, "A Shear-Lag Model for Nanotube Reinforced Piezoelectric Polymeric Composites subjected to Electro-Thermo-Mechanical Loadings", *Proceedings of 2007 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Las Vegas, NV (September 4-7, 2007).

153. Afshari, M and **Jalili, N.**, "A Sensitivity Study on Static and Dynamic Detection Modes of Adsorption-Induced Surface Stress in Microcantilever Biosensors", *Proceedings of 2007 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Las Vegas, NV (September 4-7, 2007).

154. Daqaq, M.F., Bradley, C. and **Jalili, N.**, "Experimental Investigation of Sensitivity Enhancement of A Delayed Feedback Cantilever-based Mass Sensing Platform", *Proceedings of 2007 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Las Vegas, NV (September 4-7, 2007).

155. **Jalili, N.**, "*Invited:* A Fresh Insight into the Microcantilever-Sample Interaction Problem: From Atomic Force Microscopy to Biological Mass Detection", *Proceedings of 15th Annual International Conference of Mechanical Engineering*, Tehran, IRAN (May 15-17, 2007).

156. **Jalili, N.**, "*Invited:* Vibration-Control Systems: Conceptual Design, Recent Developments and Practical Implementation", Vibration-Control Systems", *Proceedings of the 4th International Symposium on Mechatronics and its Applications (ISMA07*), Sharjah, U.A.E. (March 26-29, 2007).

157. Saeidpourazar, R. and **Jalili, N.**, "Modeling, Path Planning and Discrete Set-Point Control of A Nanomanipulator", *Proceedings of 4th International Symposium on Mechatronics and its Applications* (ISM07), Sharjah, U.A.E. (March 26-29, 2007).

158. Saeidpourazar, R. and **Jalili, N.**, "Fused Vision Force Feedback Robust Controller utilizing Soft Switching for Nanomanipulation Applications", *Proceedings of 2nd International Conference on Modeling, Simulation, and Applied Optimization* (ICMSAO' 07), Abu Dhabi, U.A.E. (March 24-27, 2007).

159. Saeidpourazar, R. and **Jalili, N.**, "A Novel Approach for Microcantilever-Sample Interaction Force Identification for use in Nanomanipulation Applications", *Proceedings of 2nd International Conference on Modeling, Simulation, and Applied Optimization* (ICMSAO' 07), Abu Dhabi (March 24-27, 2007).

160. Bashash, S. and **Jalili, N.**, "Feedforward Multiple-frequency Trajectory Tracking Control of Piezoelectrically-driven Micro/Nano-Positioning Systems", *Proceedings of 2007 American Control Conference,* (June 2007).

161. Gurjar, M. and **Jalili, N.**, "An Adaptive Self-sensing Strategy for Dynamic Mass Estimation using Piezoelectrically-driven Cantilevers", *Proceedings of 2007 American Control Conference,* (June 2007).

162. Bashash, S. and **Jalili, N.**, "Modeling of Piezo-flexural Nanopositioning Systems Subjected to Rate-varying Inputs", *Proceedings of SPIE 14th Annual Symposium on Smart Structures and Materials,* Active and Passive Smart Structures and Integrated Systems, San Diego, CA (March 2007).

163. Saghafi, M. and **Jalili, N.**, "Nonlinear Modeling of Piezoelectric Layered Beams", *Proceedings of SPIE 14th Annual Symposium on Smart Structures and Materials,* Active and Passive Smart Structures and Integrated Systems, San Diego, CA (March 2007).

164. Hosseini, M.R. and **Jalili, N.**, "Thermal Effects Investigation of Microcantilevers Actuated by Boron-Nitride Nanotubes", *Proceedings of SPIE 14th Annual Symposium on Smart Structures and Materials,* Behavior and Mechanics of Multifunctional and Composite Materials, San Diego, CA (March 2007).

165. Salehi-Khojin, A. and **Jalili, N**., "Axially Compressed Buckling of an Embedded Boron Nitride Nanotube subjected to Thermo-electro-mechanical Loadings", *Proceedings of SPIE 14th Annual Symposium on Smart Structures and Materials,* Behavior and Mechanics of Multifunctional and Composite Materials, San Diego, CA (March 2007).

166. Mahmoodi, S.N. and **Jalili, N**., "Coupled Flexural-Torsional Nonlinear Vibrations of Microcantilever Beams", *Proceedings of SPIE 14th Annual Symposium on Smart Structures and Materials,* Nano-, Micro- and Bio-Sensors and Systems, San Diego, CA (March 2007).

167. Saeidpourazar, R. and **Jalili, N.**, "Memory-based Robust Adaptive Control of a Variable Length Stepping Nanomanipulator", *Proceedings of SPIE 14th Annual Symposium on Smart Structures and Materials,* Nano-, Micro- and Bio-Sensors and Systems, San Diego, CA (March 2007).

168. Hiremath, S. and **Jalili, N.,** "Towards Feedback Control of Electrospinning Process", *Proceedings of 2006 ASME International Mechanical Engineering Congress & Exposition,* Chicago, IL (November 2006).

169. Mahmoodi, S.N. and **Jalili, N.,** "Coupled Torsional/Bending Nonlinear Vibrations of Microbeams", *Proceedings of 2006 ASME International Mechanical Engineering Congress & Exposition,* Chicago, IL (November 2006).

170. Bashash, S., **Jalili, N.,** McIntyre, M. L. and Dawson, D.M., "Adaptive Hysteresis Compensation in Piezoceramic Actuators", *Proceedings of 2006 ASME International Mechanical Engineering Congress & Exposition,* Chicago, IL (November 2006).

171. Bhadbhade, V. and **Jalili, N**., "Modeling and Vibration Analysis of Cantilever-based Rocking Mass Gyroscope", *Proceedings of 2006 ASME International Mechanical Engineering Congress & Exposition,* Chicago, IL (November 2006).

172. Afshari, M. and **Jalili, N.,** "Modeling Molecular Interactions Arising from Adsorbed Biological Species on the Microcantilever Biosensor Surface", *Proceedings of 2006 ASME International Mechanical Engineering Congress & Exposition,* Chicago, IL (November 2006).

173. Gurjar, M. and **Jalili, N.,** "Adaptive Self-sensing Microcantilever-based Mass Sensors", *Proceedings of 2006 ASME International Mechanical Engineering Congress & Exposition,* Chicago, IL (November 2006).

174. Ayglon, V., **Jalili, N.** and Haque, I., "Nonlinear Modeling and Experimental Validation of Tire Nonuniformity Induced Tangential Steering Wheel Vibrations", *Proceedings of 2006 ASME International Mechanical Engineering Congress & Exposition*, Chicago, IL (November 2006).

175. Bashash, S. and **Jalili, N.,** "A New Modeling and Control Paradigm for Precision Trajectory Tracking of Piezoelectrically-driven Micro/Nano-positioning Systems", *Proceedings of 2006 ASME International Mechanical Engineering Congress & Exposition*, Chicago, IL (November 2006).

176. Saeidpourazar, R. and **Jalili, N.,** "Modeling and Observer-based Robust Tracking Control of A Nano/Micro-manipulator for Nanofiber Grasping Applications", *Proceedings of ASME International Mechanical Engineering Congress & Exposition,* Chicago, IL (November 2006).

177. Subramanian, E. and **Jalili, N.,** "Precision Trajectory Control of a 3-D Micromanipulator for use in Scanning Tunneling Microscope", *Proceedings of 2006 ASME International Mechanical Engineering Congress & Exposition*, Chicago, IL (November 2006).

178. Hosseini, M.R. and **Jalili, N.,** "Investigation of Carbon Diffusivity into the Nanoparticles During CVD Nanotube Fabrication Process by Molecular Dynamics Technique", *Proceedings of 2006 ASME International Mechanical Engineering Congress & Exposition*, Chicago, IL (November 2006).

179. Salehi-Khojin, A. and **Jalili, N.,** "A Shear lag Model for Nano-Reinforced Composite Systems under Transient Heat Transfer", *Proceedings of 2006 ASME International Conference on Multifunctional Nano-composites*, Hawai (September 2006).

180. Mahmoodi, S.N. and **Jalili, N.,** "Nonlinear Vibrations of Microcantilever Biosensors subjected to Adsorption Induced Surface Stresses", *Proceedings of 11th Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures*, Virginia Tech, Blacksburg, VA (August 2006).

181. Hosseini, M.R. and **Jalili, N.**, "Towards Multiphysics, Multiscale Modeling and Control of Nanotube-based Piezoelectric Materials", *Proceedings of 2006 NSF Design, Service, and Manufacturing Grantees and Research Conference*, St. Louis, Missouri (July 2006).

182. Bashash, S. and **Jalili, N.**, "On the Modeling, System Identification, and Feedforward Trajectory Control of Piezoelectrically-driven Nanostagers", *Proceedings of 2006 Actuator*, Bremen, Germany (June 2006).

183. Bashash, S. and **Jalili, N.**, "Sliding Mode Control of Piezoelectric Actuators with Perturbation Estimation Compensation, *Proceedings of 2006 American Control Conference*, Minneapolis, MN (June 2006).

184. Bashash, S. and **Jalili, N.**, "Adaptive Sliding Controller Design for Piezoelectric Actuators with Parametric Uncertainties and Unknown Hysteresis Nonlinearity", *Proceedings of 2006 ASME International Student Conference*, Istanbul, Turkey (May 26-28, 2006).

185. Gurjar, M., Afshari, M. and **Jalili, N**., "Frequency Regulation of Self-sensing Microcantilevers for Biological Species Detection", *Proceedings of International Workshop on Nanomechanical Sensors*, Copenhagen, Denmark (May 7-11, 2006).

186. Bashash, S. and **Jalili, N.**, "Feedforward Hysteresis Compensation in Trajectory Control of Piezoelectrically-driven Nanostagers", *Proceedings of SPIE 13th Annual Symposium on*

Smart Structures and Materials, Smart Structures and Integrated Systems, San Diego, CA (February 2006).

187. Gurjar, M.K. and **Jalili, N.**, "Closed Form Expression for Self-sensing Microcantilever-based Mass Sensing", *Proceedings of SPIE 13th Annual Symposium on Smart Structures and Materials,* Smart Structures and Integrated Systems, San Diego, CA (February 2006).

188. Hiremath, S. and **Jalili, N.**, "Optimal Control of Electrospinning for Fabrication of Nonwoven Textile-based Sensors and Actuators", *Proceedings of 3rd International Conference of Textile Research Division,* Cairo, Egypt (April 2006).

189. Delnavaz, A., **Jalili, N.** and Ahmadian, M., "Dynamic Modeling of Moving Load on Beam Resting on a Visco-elastic Foundation," *Proceeding of 9th International Conference of Mechanical Engineers* (ISME 2005), Tehran, IRAN (May 2005).

190. Esmaeili, M., Durali, M. and **Jalili, N.,** "Modeling And Vibration Analysis of Vibrating Beam Microgyroscopes Under Longitudinal Rotation of The Support", *Proceedings of 2005 ASME International Mechanical Engineering Congress & Exposition,* Symposium on Microelectromechanical Systems, Orlando, FL (November 2005).

191. Esmaeili, M., Durali, M. and **Jalili, N.,** "Ring Microgyroscope Modeling and Performance Evaluation", *Proceedings of 2005 ASME International Mechanical Engineering Congress & Exposition,* Symposium on Microelectromechanical Systems, Orlando, FL (November 2005).

192. Bashash, S. **Jalili, N.**, "A New Hysteresis Model for Piezoelectric Actuators with Application to Precision Trajectory Control", *Proceedings of 2005 ASME International Mechanical Engineering Congress & Exposition,* Symposium on Vibration and Noise Control, Orlando, FL (November 2005).

193. Cherian, V., **Jalili, N.** and Haque, I., "Nonlinear Modeling and Theoretical Development of Tire Nonuniformity Induced Tangential Steering Wheel Vibrations ", *Proceedings of 2005 ASME International Mechanical Engineering Congress & Exposition,* Symposium on Vibration and Noise Control, Orlando, FL (November 2005).

194. Ayglon, V.S., Cherian, V. and **Jalili, N.**, "Experimental Testing and Validation of Tangential Steering Wheel Vibrations Due to Tire Nonuniformity", *Proceedings of 2005 ASME International Mechanical Engineering Congress & Exposition,* Symposium on Automotive and Transportation Systems, Orlando, FL (November 2005).

195. Mahmoodi, S.N., **Jalili, N.** and Khadem, S.E., "Passive Nonlinear Vibrations of A Directly Excited Nanotube-Reinforced Composite Cantilever Beam", *Proceedings of 2005 ASME International Mechanical Engineering Congress & Exposition,* Symposium on Vibration and Noise Control, Orlando, FL (November 2005).

196. Pishkenari, H.N., **Jalili, N.** and Meghdari, A., "Acquisition of High Precision Atomic-Resolution Images for Non-Contact Atomic Force Microscopy via Direct Identification of Sample/Tip Distance", *Proceedings of 2005 ASME International Mechanical Engineering Congress & Exposition,* Symposium on Dynamics and Control of Micro and Nanosystems, Orlando, FL (November 2005).

197. Bashash, S. and **Jalili, N.**, "Trajectory Control of Piezoelectric Actuators Using Nonlinear Variable Structure Control", *Proceedings of International Symposium on Collaborative Research in Applied Science (ISOCRIAS),* Vancouver, BC, Canada (October 2005).

198. Pishkenari, H.N., **Jalili, N.,** Meghdari, A. and Alasti, A., "Nonlinear Dynamic Analysis and Chaotic Behavior in Atomic Force Microscopy", *Proceedings of 20th ASME Biennial*

Conference on Mechanical Vibration and Noise, Symposium on Active Control of Vibration and Noise, Long Beach, CA (September 2005).

199. Esmaeili, M., Durali, M. and **Jalili, N.,** "Dynamic Modeling And Performance Evaluation Of An Oscillating Microgyroscope Modeled As A Cantilever Flexible Beam", *Proceedings of 20th ASME Biennial Conference on Mechanical Vibration and Noise*, Symposium on Active Control of Vibration and Noise, Long Beach, CA (September 2005).

200. Esmaeili, M., Durali, M. and **Jalili, N.,** "Closed-Form Solution of Frequency Equations for A Cantilever Flexible Beam under General Base Excitation", *Proceedings of 20th ASME Biennial Conference on Mechanical Vibration and Noise*, Symposium on Active Control of Vibration and Noise, Long Beach, CA (September 2005).

201. Rajoria, H., **Jalili, N.** and Culpepper, M., "Passive Vibration Control of a Compliant Nanopositioner Using Carbon Nanotube Based Viscoelastic Material", *Proceedings of China International Conference on Nanoscience and Technology* (*ChinaNANO* 2005), Beijing Beijing, China (June 2005).

202. Laxminarayana, K., and **Jalili, N.**, "Novel Carbon Nanotube-based Fabric Sensors: A Pathway to Electronic-Textile", *Proceedings of 84th Textile Institute Annual World Conference*, Raleigh, NC (March 2005).

203. **Jalili, N.**, "Next Generation Actuators and Sensors Comprised of Nanotube Composites", *Proceedings of 2005 National Science Foundation DMII Grantees and Research Conference*, Scottsdale, AZ (January 2005).

204. Cherian, V., **Jalili, N.** and Haque, I., "Development of A Non-Linear Model of A Double Wishbone Suspension for the Characterization of Force Transmission to the Steering Column and Chassis", *Proceedings of 2004 ASME International Mechanical Engineering Congress & Exposition,* Symposium on Active Vibration and Noise Control, Anaheim, CA (November 2004).

205. Ramaratnam, A. and **Jalili, N.**, "Novel Carbon Nanotube Reinforced Electro-Active Polymer Sensors for Structural Vibration Control", *Proceedings of 2004 ASME International Mechanical Engineering Congress & Exposition*, Symposium on Active Vibration and Noise Control, Anaheim, CA (November 2004).

206. Rajoria, H. and **Jalili, N.**, "Determination of Strength and Damping Characteristics of Carbon Nanotube-Epoxy Composites", *Proceedings of 2004 ASME International Mechanical Engineering Congress & Exposition*, Symposium on Active Vibration and Noise Control, Anaheim, CA (November 2004).

207. Ramaratnam, A. and **Jalili, N**., "Vibration Control of Flexible Beams using Nanotube Based Piezoelectric Materials", *Proceedings of the 9th International Forum Mechatronics Conference*, Ankara, Turkey (August/September 2004).

208. Ramaratnam, A., **Jalili, N.** and Rajoria, H., "Development of A Novel Strain Sensor using Nanotube-Based Materials with Application to Structural Vibration Control", *Proceedings of 6th Intl Conference on Vibration Measurements by Laser Techniques, A*ncona, Italy (June 2004).

209. Ramaratnam, A., **Jalili, N.** and Dawson, D. M., "Semi-Active Vibration Control using Piezoelectric-Based Switched Stiffness", *Proceedings of the 23rd American Control Conference* (*ACC'04*), Boston, MA (June/July 2004).

210. Laxminarayana, K. and **Jalili, N.**, "Enhancing Quality of Carbon Nanotubes through a Real-time Controlled CVD Process with Application to Next-generation Nanosystems", *Proceedings of 2004 SPIE International Symposium on Smart Structures and Materials,* Conference on Smart Electronics, MEMS, BioMEMS & Nanotechnology, San Diego, CA (March 2004).

211. Ramaratnam, A. and **Jalili, N.**, "Feasibility Study of Actuators and Sensors using Electroactive Polymers Reinforced with Carbon Nanotubes", *Proceedings of 2004 SPIE International Symposium on Smart Structures and Materials,* Conference on Electroactive Polymer Actuators and Devices (EAPAD), San Diego, CA (March 2004).

212. Laxminarayana, K., Ramaratnam, A. and **Jalili, N.**, "Towards Control-Based Manufacturing of CVD-Grown Carbon Nanotubes", *Proceedings of 2004 National Science Foundation Design, Service and Manufacture and Industrial Innovation Grantees and Research Conference*, Dallas, TX (January 2004).

213. Dadfarnia, M., **Jalili, N.** and Dawson, D.M., "An Investigation of Damping Mechanisms in Translational Euler-Bernoulli Beams using a Lyapunov-based Stability Approach", *Proceedings of 2003 ASME International Mechanical Engineering Congress & Exposition,* Symposium on Active Vibration & Noise Control, Washington DC (November 2003).

214. Laxminarayana, K. and **Jalili, N.**, "A Review of Recent Developments in Atomic Force Microscopy Systems with Application to Molecular Manufacturing and Biological Processes", *Proceedings of 2003 ASME International Mechanical Engineering Congress & Exposition*, Symposium on Nanoscale Dynamics, Sensing and Control, Washington DC (November 2003).

215. Ramaratnam, A., **Jalili, N.** and Grier, M., "Piezoelectric Vibration Control of Translational Flexible Beams using Switched Stiffness", *Proceedings of 2003 ASME International Mechanical Engineering Congress & Exposition*, Symposium on Active Vibration and Noise Control, Washington DC (November 2003).

216. **Jalili, N.**, "Nanotube-based Actuator and Sensor Paradigm: Conceptual Design and Challenges", *Proceedings of 2003 ASME International Mechanical Engineering Congress & Exposition*, Symposium on Nanoscale Dynamics, Sensing and Control, Washington DC (November 2003).

217. Grier, M. and **Jalili, N.**, "Characterization, Modeling and Vibration Control of a Flexible Rubber Beam with Embedded Piezoelectric Actuators and Sensors", *Proceedings of 19th ASME Biennial Conference on Mechanical Vibration and Noise*, Symposium on Vibration and Noise Control, Chicago, Illinois (September 2003).

218. **Jalili, N.**, Dadfarnia, M. and Dawson, D.M., "Distributed-Parameters Base Modeling and Vibration Analysis of Micro-Cantilevers used in Atomic Force Microscopy", *Proceedings of 19th ASME Biennial Conference on Mechanical Vibration and Noise*, Symposium on Dynamics and Vibration of Robotic Systems, Chicago, Illinois (September 2003).

219. Dadfarnia, M., **Jalili, N.**, Xian, B. and Dawson D.M., "Lyapunov-based Piezoelectric Control of Flexible Cartesian Robot Manipulators", *Proceedings of 22nd American Control Conference* (*ACC'03*), Denver, Colorado (June 2003).

220. Fang, Y., Feemster, M., Dawson, D. and **Jalili, N.**, "Active Interaction Force Identification for Atomic Force Microscope Applications", *Proceedings of 41st IEEE Conference on Decision Control* (*CDC'02*), 3678-3683, Las Vegas, Nevada (December 2002).

221. **Jalili, N.**, Dawson, D.M., Carroll, D., "Next Generation Actuators Utilizing Single Wall Boron Nitride Nanotube Composites", *Proceedings of 2002 International Mechanical Engineering Congress & Exposition* (IMECE'02), Symposium on Nanocomposite Materials and Structures, New Orleans, Louisiana (November 2002).

222. Dadfarnia, M., **Jalili, N.** and Esmailzadeh, E., "On the Selection of Time-Functions in the Galerkin Approximation Used for the Timoshenko Beam Theory", *Proceedings of 2002 CanCNSM Conference*, Vol. II, pp. 559- 570, Vancouver, BC, CANADA (June 2002).

223. Derkhorenian, R., **Jalili, N.**, and Dawson, D.M., "Nonlinear Adaptive Vibration Absorber for Linear Uncertain Systems Experiencing Unknown Sinusoidal Disturbances", *Proceedings of 2002 International Mechanical Engineering Congress & Exposition* (IMECE'02), New Orleans, Louisiana (November 2002).

224. Xian, B., **Jalili, N.**, Dawson, D.M., and Fang, Y., "Adaptive Rejection of unknown Sinusoidal Disturbances in Linear SISO Uncertain Systems", *Proceedings of 21st American Control Conference* (ACC'02), 4015-4020 Anchorage, Alaska, USA (May 2002).

225. Fang, Y., Dawson, D.M., Feemster, M. and **Jalili, N.**, "Nonlinear Control Techniques for the Atomic Force Microscope System", *Proceedings of 2002 International Mechanical Engineering Congress & Exposition* (IMECE'02), New Orleans, Louisiana (Nov. 2002).

226. Liu, Z., **Jalili, N.**, Dadfarnia, M. and Dawson, D. M, "A Reduced-order Observer based Piezoelectric Control of Flexible Cartesian (SCARA) Robot Manipulator", *Proceedings of 2002 International Mechanical Engineering Congress & Exposition* (IMECE'02), New Orleans, Louisiana (November 2002).

227. **Jalili, N.**, Wagner, J. and Dadfarnia, M., "Design and Development of a Piezoelectric-Based Camless Automotive Engine Valve", *Proceedings of 8th Mechatronics Forum International Conference* (Mechatronics 2002), Enschede, Netherlands (June 2002).

228. **Jalili, N.**, Dadfarnia, M., Hong, F., and Ge, S.S., "Adaptive Non Model-Based Piezoelectric Control of Flexible Beams with Translational Base", *Proceedings of 21st American Control Conference* (ACC'02), 3802-3807, Anchorage, Alaska, USA (May 2002).

229. Knowles, D., **Jalili, N.** and Ramadurai, S., "Piezoelectric Structural Vibration Control using Active Resonator Absorber", *Proceedings of 2001 International Mechanical Engineering Congress & Exposition* (IMECE'01), New York, NY (November 2001).

230. **Jalili, N.** and Esmailzadeh, E., "Nonlinear Vibration and Periodicity Analysis of Timoshenko Beams under Harmonic Base Excitation", *Proceedings of 2001 International Mechanical Engineering Congress & Exposition* (IMECE'01), New York, NY (November 2001).

231. Knowles, D., **Jalili, N.** and Khan, T., "On the Nonlinear Modeling and Identification of Piezoelectric Inertial Actuators", *Proceedings of 2001 International Mechanical Engineering Congress & Exposition* (IMECE'01), New York, NY (November 2001).

232. Esmailzadeh, E. and **Jalili, N.**, "Induced Vibration of Suspension Bridges Traversed by Moving Vehicles", *Proceedings of 2001 International Mechanical Engineering Congress & Exposition* (IMECE'01), New York, NY (November 2001).

233. **Jalili, N.**, "Regulation of a Lightweight One-Link Flexible Robot Arm using an Exponentially Stable Variable Structure Controller", *Proceedings of 20th American Control Conference* (ACC'01), Arlington, VA (June 2001).

234. **Jalili, N.**, "On Adaptive-Passive Vibration Suppression using Distributed-Parameter Absorbers ", *Proceedings of 2000 International Mechanical Engineering Congress & Exposition* (IMECE'00), Orlando, FL (November 2000).

235. **Jalili, N.** and Esmailzadeh, E., "Stability Analysis of Optimal Time-Delayed Vehicle Suspension Systems", *Proceedings of 19th American Control Conference* (ACC'00), Chicago, IL (June 2000).

236. Esmailzadeh, E. and **Jalili, N.**, "Dynamics and Stability Analysis of Optimal Active Vehicle Suspension Systems", *Proceedings of 5th IAA Annual Conference, Automotive Technologies*, Tehran, IRAN (December 2000).

237. Esmailzadeh, E. and **Jalili, N.**, "Vibration Analysis of Bridges Subjected to Moving Vehicles", *Proceedings of 5th IAA Annual Conference, Automotive Technologies*, Tehran, IRAN (December 2000).

238. **Jalili, N.** and Olgac, N., "On the Semi-Automated Structural Vibration Control using Smart Materials", *Proceedings of 7th Mechatronics Forum International Conference*, Atlanta, Georgia (September 2000).

239. **Jalili, N.**, "A New Approach to Optimum Active Vehicle Suspensions using Delayed Feedback", *Proceedings of 5th International Symposium on Advanced Vehicle Control* (AVEC'00), Ann Arbor, Michigan (August 2000).

240. **Jalili, N.** and Olgac, N., "A Quasi On-line Tuning Structure for Optimum Delayed Feedback Vibration Absorber", *Proceedings of 18th American Control Conference* (ACC'99), San Diego Bay, CA (June 1999).

241. **Jalili, N.** and Olgac, N., "Optimum Delayed Feedback Vibration Absorber for MDOF Mechanical Structures", *Proceedings of 37th IEEE Conference on Decision Control* (CDC'98), Tampa, Florida (December 1998).

242. **Jalili, N.** and Olgac, N., "Stability Analysis of Multiple Delayed Resonator Vibration Absorbers", *Proceedings of 1998 International Mechanical Engineering Congress & Exposition* (IMECE'98), Anaheim, California (November 1998).

243. Olgac, N. and **Jalili, N.**, "On Piezoelectric Control of Flexible Beams with Delayed-Resonator Vibration Absorber: Theory and Experiments", *Proc. of 1998 NATO Advanced Research Workshop on Smart Materials* (SMART'98), Warsaw, Poland (June 1998).

244. **Jalili, N.** and Olgac, N., "Robust Tracking for Uncertain Flexible Structures using Mixed Time-Optimal and Sliding Mode Control", *Proceedings of 1997 ASME Design Engineering Technical Conference* (DETC'97), Sacramento, California (September 1997).

245. **Jalili, N.**, Elmali, H., Moura, J. and Olgac, N., "Tracking Control of a Rotating Flexible Beam Using Frequency-Shaped Sliding Mode Control", *Proceedings of 16th American Control Conference* (ACC'97), 2552-2556, Albuquerque, New Mexico (June 1997).

246. Esmailzadeh, E. and **Jalili, N.**, "Optimal Vibration Absorbers for Timoshenko Beams", *Proceedings of 15th Canadian Congress of Applied Mechanics* (CANCOM'95), Victoria, BC, Canada (May 1995).

Selected Invited Presentations:

1. **Jalili, N.**, "Control and Manipulation at the Nanoscale: From Molecular Manufacturing to Molecular Recognition", An *invited* seminar presentation, Department of Mechanical, Industrial and Manufacturing Engineering, Northeastern University, Boston, MA (October 23, 2008).
2. **Jalili, N.**, "Control and Manipulation at the Nanoscale: From Molecular Manufacturing to Molecular Recognition", An *invited* seminar presentation, Mechanical Engineering Department, University of Washington, Seattle, WA (October 10, 2008).
3. **Jalili, N.**, "Control and Manipulation at the Nanoscale", An *invited* workshop and short-course presentation, Workshop on Nanorobotics, IROS2008, Nice, FRANCE (September 22, 2008).
4. **Jalili, N.**, "Control and Manipulation at the Nanoscale: From Molecular Manufacturing to Molecular Recognition", An *invited* seminar presentation, Department of Mechanical and Industrial Engineering, Concordia University, Montreal, Quebec, CANADA (September 12, 2008).
5. **Jalili, N.**, "Control and Manipulation at the Nanoscale: From Molecular Manufacturing to Molecular Recognition", An *invited* seminar presentation, School of Mechanical Engineering, Purdue University, West Lafayette, IN (September 4, 2008).
6. **Jalili, N.**, "Control and Manipulation at the Nanoscale: From Molecular Manufacturing to Molecular Recognition", An *invited* seminar presentation, Department of Mechanical Engineering, Sharif University of Technology, Tehran, IRAN (May 24, 2008).
7. **Jalili, N.**, "Focused Ion Beam Deposited Mass Detection using Piezoelectrically-actuated Active Probes", An *invited* seminar presentation during 2008 Nanomechancial Cantilever Sensor (NMC) Workshop, Max Planck Institute for Polymer Research, Mainz, GERMANY (May 19, 2008).
8. **Jalili, N.**, "Control and Manipulation at the Nanoscale: From Molecular Manufacturing to Molecular Recognition", An *invited* seminar presentation as the 2007 Outstanding Young Investigator of the Year, Sigma Xi Clemson Chapter, Clemson University, Clemson, SC (April 8, 2008).
9. **Jalili, N.**, "Embedding Piezoelectric-based Actuators and Sensors in Smart Tires", An *invited* seminar presentation, The 24th Annual Tire Industry Conference, Hilton Head Island, Hilton Head, SC (March 13, 2008).
10. **Jalili, N.**, "Control and Manipulation at the Nanoscale: From Molecular Manufacturing to Molecular Recognition", An *invited* seminar presentation, Department of Mechanical, Industrial and Manufacturing Engineering, Northeastern University, Boston, MA (February 27, 2008).
11. **Jalili, N.**, "Control and Manipulation at the Nanoscale: From Molecular Manufacturing to Molecular Recognition", An *invited* seminar presentation, Department of Mechanical, Aerospace & Nuclear Engineering, Rensselaer Polytechnic Institute, Troy, NY (February 20, 2008).
12. **Jalili, N.**, "Control and Manipulation at the Nanoscale: From Scanning Probe Microscopy to Biological Mass Detection", An *invited* presentation, NSF CMMI Grantees Conference, Knoxville, TN (January 9, 2008).

13. **Jalili, N.**, "A Fresh Insight in to the Microcantilever-Sample Interaction Problem: From Atomic Force Microscopy to Biological Mass Detection", An *invited* seminar presentation, School of Mechanical Engineering, Purdue University, West Lafayette, IN (November 1, 2007).
14. **Jalili, N.**, "Microelectromechanical and Nanoelectromechanical Actuators and Sensors", An *invited* tutorial presented during *2007ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Las Vegas, NV (September 4, 2007).
15. **Jalili, N.**, "A Fresh Insight into the Microcantilever-Sample Interaction Problem: From Atomic Force Microscopy to Biological Mass Detection", An *invited* seminar presentation, Max Planck Institute for Polymer Research, Mainz, GERMANY (June 10, 2007).
16. **Jalili, N.**, "Microelectromechanical and Nanoelectromechanical Actuators and Sensors", An *invited* tutorial presented during *15th. Annual (International) Conference on Mechanical Engineering* (ISME 2007), Tehran, IRAN (May 17, 2007).
17. **Jalili, N.**, "A Fresh Insight in to the Microcantilever-Sample Interaction Problem: From Atomic Force Microscopy to Biological Mass Detection", An *invited* seminar presentation, *15th. Annual (International) Conference on Mechanical Engineering* (ISME 2007), Tehran, IRAN (May 15, 2007).
18. **Jalili, N.**, "Microelectromechanical and Nanoelectromechanical Actuators and Sensors", An *invited* tutorial during *4th International Symposium on Mechatronics and its Applications* (ISMA07), Sharjah, U.A.E. (March 26, 2007).
19. **Jalili, N.**, "Vibration-Control Systems: Conceptual Design, Implementation and Recent Advances", An invited tutorial during *International Conference on Modeling, Simulation, and Applied Optimization* (ICMSAO' 07), Abu Dhabi, U.A.E. (March 27, 2007).
20. **Jalili, N.**, "Vibration-Control Systems Design and Implementation", An *invited* seminar presentation, *4th International Symposium on Mechatronics and its Applications* (ISMA07), Sharjah, U.A.E. (March 28, 2007).
21. **Jalili, N.,** "A Fresh Insight into the Microcantilever-Sample Interaction Problem: From Atomic Force Microscopy to Biological Mass Detection", An *invited* seminar presentation, Mechanical, Industrial and Manufacturing Engineering Department, University of Toledo, Toledo, OH (September 15, 2006).
22. **Jalili, N.,** "Introduction to Nanotechnology: New Trends and Future Directions", An *invited* seminar presentation to General Public, Department of Mechanical Engineering, Clemson University, Clemson, SC (March 22, 2006).
23. **Jalili, N.**, "Passive Vibration Damping via Nanotube-Reinforced Composites", An *invited* seminar presentation, Department of Materials Science and Engineering, Sharif University of Technology, Tehran, IRAN (June 20, 2005).
24. **Jalili, N., "**Macroscopic Functional Materials Comprised of Nanotube-Reinforced Composites with Application to Vibration Damping", An *invited* seminar presentation, Department of Mechanical Engineering, MIT, MA (May 20, 2005).
25. **Jalili, N.,** "A Fresh Insight into the Microcantilever-Sample Interaction Problem in Non-Contact Atomic Force Microscopy", An *invited* seminar presentation, Department of Mechanical Engineering, University of Connecticut, CT (May 19, 2005).

26. Jalili, N., "Macroscopic Functional Materials (Actuators/Sensors) Comprised of Nanotube-Reinforced Composites: Application to Energy Harvesting and Vibration Dampening", An *invited* seminar presentation, Department of Mechanical Engineering, University of Toronto, Toronto, ON, CANADA (December 20, 2004).

27. Jalili, N., "Introduction to Nanotechnology", An *invited* seminar presentation, University of Mashad, Mashad, IRAN (May 10, 2004).

28. Jalili, N., "Nanotechnology, The Future Trend", An *invited* seminar presentation, 1st Germany-Iran Joint Seminar on Nanostructured Materials (IGNM 2004), Iran University of Science and Technology, Tehran, IRAN (May 2-3, 2004).

29. Jalili, N., "System Theory-Based Control of Mechatronic Systems with Application to Automotive Technology", An *invited* seminar presentation, School of Mechanical Engineering, Sharif University of Technology (June 3, 2003) and Niro Moharekeh Inc., Tehran, IRAN (August 5, 2003).

30. Jalili, N., "System Theory-Based Control of Mechatronic Systems: Next-Generation Actuator/Sensor Subsystems Comprised of Functional Nanomaterials", An *invited* seminar presentation, Department of Mechanical Engineering, Virginia Tech, Blacksburg, VA (April 28, 2003).

31. Jalili, N., "A Systems Theory-Based Control of Mechatronic Systems with Application to Active Vibration Control utilizing Nanotube-based Actuators and Sensors", An *invited* seminar presentation, Department of Mechanical Engineering, University of British Columbia, BC, CANADA (June 10, 2002) and University of Victoria, Victoria, CANADA (June 3, 2002).

32. Jalili, N., "Optimum Vibration Suppression of Flexible Structures via Active Vibration Absorption", An *invited* seminar presentation, Department of Mechanical, Industrial and Manufacturing Engineering, Northeastern University, Boston, MA (May 22, 2000).

33. Jalili, N., "Piezoelectric-based Active Vibration Absorption of Mechanical Structures", An *invited* seminar presentation, Mechanical, Industrial and Manufacturing Engineering Department, University of Toledo, Toledo, OH (April 21, 2000).

34. Jalili, N., "On the Active Vibration Absorption via Delayed Feedback Vibration Absorbers: Experimental Implementation Challenges", An *invited* seminar presentation, Department of Mechanical Engineering, Northern Illinois University, DeKalb, IL (April 28, 1999).

35. Jalili, N., "Optimum Vibration Suppression of Flexible Structures using Delayed Feedback", An *invited* seminar presentation, Department of Mechanical and Materials Engineering, Wright State University, Dayton, OH (February 24, 1999).

36. Jalili, N., "On the Active Vibration Absorption via Delayed Feedback Vibration Absorbers: A Novel Technique", An *invited* seminar presentation, Department of Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC (January 14, 1999).

Professional Development Activities:

Workshop Participation:

- "Short Course in Nanofiber-based Technology", University of British Columbia, BC, CANADA, October 7-10, 2005.
- "Short Course on Laser Vibrometry", A Short Course Sponsored by 6th International Conference on Vibration Measurements by Laser Techniques, AIVELA held on June 22, 2004 in Ancona, Italy.
- "Short Course in Smart Structures and Nanotechnology", Virginia Tech, Blacksburg, VA, May 18-20, 2004.
- ASME's Continuing Education Institute (CEI) Nanotechnology tutorials, held in November 13-14, 2001 during ASME's IMECE 2001 Conference, New York, NY.
- "Inquiry-Based Collaborative Learning", NCIIA Summer Institute, June 11-13, 2001, Hampshire College, MA.
- "Share The Future - II: A Working Conference", held in March 18-20, 2001 in Conference Center and Inn, Clemson University, Clemson, SC.

Mentoring:

- Providing technical help and financial supports to Edwards Middle School and Lakeside Middle School Robotics teams to participate in the FIRST Lego League Robotics Competition. This support made a significant improvement in the two teams' achievements and placed them 3rd overall in South Carolina (2006-07).
- Several high-school interns through Summer Program for Research Interns (SPRI) during summer 2008 and summer 2001 from South Carolina Governor's School for Science and Mathematics.
- Several exchanged students from Germany (Fall 2000 and Fall 2001) involved in experimental verification of delayed feedback vibration absorber using PZT actuators.

Lecturing:

- Mechanical Engineering Dept., Sharif University of Technology, Tehran, Iran, from Sep '93-Aug '95, taught subjects on Kinematics, Machine Design, Vehicle Dynamics and Chassis Design.
- Mechanical Engineering Department, Azad University of Karaj, Karaj, Iran, from Sep '94-Aug '95, taught subjects on undergraduate Machine Design and Optimum Design.

Teaching Assistant (TA):

- Mechanical Engineering Department, University of Connecticut, Storrs Connecticut, from Jan '97-Dec '98, teaching assistant for both undergraduate and graduate courses.
- Mechanical Engineering Dept., Sharif University of Technology, Tehran, Iran, from Sep '93-Aug '95, TA for Kinematics, Advanced Control, and Continuous Systems Vibration.

Graduate/Undergraduate Courses Taught:

Northern Illinois University (*Spring 1999 – Summer 2000*)

- MEE 220, Mechanisms Design, SP99, FA99 and SP00.
- MEE 322, Dynamic Systems and Control I, SP99, SP00 and SU00.
- MEE 521, Advanced Vibrations, FA99.

Clemson University (*Fall 2000 – present*)

- ME 202, Foundations of Mechanical Systems, FA00, SP01, FA01, SP02, FA02, SP03, FA03 and FA05.
- ME 205, Computer Analysis in Engineering, SU02.
- ME 305, Modeling and Analysis of Dynamic Systems, FA04, SP05, FA05, FA06 and SP07.
- ME 323L, Mechanical Engineering Laboratory III, FA01, SP02, FA02 and SP03.
- ME 402, Internship in Engineering Design, FA00, SP03, FA03 and SP07.
- ME 403, Control and Integration of Dynamic Systems, FA08.
- ME 821, Advanced Control Engineering, SP02, SP03, SP04, SP05, SP06, FA07 and FA08.
- ME 845, Vibration of Continuous Media, SP08 and SP09.
- ME 893, Smart Structures and Vibration-Control Systems, A totally new graduate-level course developed at Clemson University, SP07.
- ME 893, MEMS and NEMS Sensors and Actuators, A totally new graduate-level course developed at Clemson University, SP08.
- ME 893, PhD Seminar, A totally new PhD-level course developed at Clemson University, SP09.

Clemson University Committee Assignments and Activities:

- Chair, Dynamic Systems and Controls Group, Department of Mechanical Engineering (2008 – 2009).
- Chair, Department of Mechanical Engineering Ph.D. Qualifying Exam (2005 – 2007).
- Member, Department of Mechanical Engineering Graduate and Research Committee (2005 – 2009).
- Member, Department of Mechanical Engineering International Committee (2007 – 2009).
- Chair, Department of Mechanical Engineering Mechanical and Manufacturing Systems (MMS) Course Caucus Ad-hoc Committee (2006 – 2008).
- Chair, Department of Mechanical Engineering MMS Faculty Search Committee (2004 – 2006).
- Chair, Department of Mechanical Engineering Scholarship, Honors and Awards Committee (2003 – 2004).

- Member, Department of Mechanical Engineering Scholarship, Honors and Awards Committee (2002–2003).
- Member, Department of Mechanical Engineering Seminar Committee (2001 – 2002).
- Chair, Department of Mechanical Engineering Library Committee (2000 – 2001).
- Member, Department of Mechanical Engineering MMS Laboratory Ad-hoc Committee (2000 – 2003).
- Member, Department of Mechanical Engineering MMS Group Committee (2000 – present).

Collaborators and Other Affiliations:

Collaborators:

Profs. D.M. Dawson, B.C. Goswami, I. Haque, Y. Huang, E.H. Law, J. Luo, I. Luzinov, A.M. Rao, C.E. Sosolik, J. Tzeng, A. Vertegel and J. Wagner, all from Clemson University, SC.

Graduate Advisors:

M.Sc. Thesis Advisor: Prof. Ebrahim Esmailzadeh, Sharif Univ. of Technology, Tehran, IRAN, currently Professor of Mech. Eng., University of Ontario Institute of Technology, ON, Canada.

Ph.D. Thesis Advisor: Prof. Nejat Olgac, University of Connecticut, CT, USA.

Graduate Advisees:

Graduated Students (Served As Major Advisor):

1) Hosseini, M.R., **Ph.D.** in Mech. Eng. August 2008 (Dissertation: A Comprehensive Multiphysics, Multiscale Modeling Framework for Carbon Nanotube Fabrication Process by Chemical Vapor Deposition)
2) Salehi-Khojin, A., **Ph.D.** in Mech. Eng., May 2008 (Thesis: Vibration Analysis of Piezoelectric Microcantilever Sensors),
3) Bradley, C., MS in Mech. Eng., May 2008 (Thesis Title: On New Applications and Sensitivity Enhancement of Cantilever-based Sensing Systems),
4) Venkataraman, P., MS in Mech. Eng., December 2007 (Thesis Title: Experimental Investigation of Tire Nitrogen Filling on Vehicle Fuel Economy),
5) Mahmoodi, S.N., **Ph.D.** in Mech. Eng., August 2007 (Dissertation: Nonlinear Vibration and Frequency Response Analysis of Nanomechanical Cantilever Beams),
6) Chavare, S.D., MS in Mech. Eng., August 2007 (Thesis Title: Self-sensing Switched Stiffness Vibration Control of a Piezoelectrically-driven Cantilever Beam),
7) Afshari, M., MS in Mech. Eng., August 2007 (Thesis Title: Biological Species Detection via Microcantilever-based Mass Sensing),
8) Subramanian, E.C., MS in Mech. Eng., May 2007 (Thesis Title: Design and Development of an in-house Scanning Tunnelling Microscope System),

9) Hiremath, S., MS in Mech. Eng., December 2006 (Thesis Title: Development of an Automated Electrospinning Process for Nanofiber-based Electronic-Textile Fabrication),

10) Bhadbhade, V., MS in Mech. Eng., December 2006 (Thesis Title: Coupled Flexural-Torsional Vibrations of A Cantilever Beam Gyroscope with Application to Rocking Mass Gyroscopes),

11) Gurjar, M.K., MS in Mech. Eng., December 2006 (Thesis Title: An Adaptive Self-sensing Strategy for Ultrasmall Mass Detection using Piezoelectrically-driven Microcantilevers),

12) Ayglon, V.S., MS in Mech. Eng., August 2006 (Thesis Title: Development of An Objective/Subjective Assessment Tool for Vehicle Nibble Vibrations),

13) Bashash, S., MS in Mech. Eng., December 2005 (Thesis Title: Nonlinear Modeling and Control of Piezoelectrically-driven Nanostagers with Application to Scanning Tunnelling Microscopy),

14) Cherian, V., MS in Mech. Eng., December 2005 (Thesis Title: Modeling, Simulation and Experimental Testing of Suspension and Steering Subsystems for Steering Nibble Characterization),

15) Rajoria, H., MS in Mech. Eng., May 2005 (Thesis Title: Passive Vibration Damping Enhancement and Applications using Carbon Nanotube-Epoxy Reinforced Composites),

16) Laxminarayana, K., MS in Mech. Eng., August 2004 (Thesis Title: Towards Control-based Manufacturing of Nanotube Materials with Application to Smart Structures),

17) Ramaratnam, A., MS in Mech. Eng., August 2004 (Thesis Title: Semi-Active Vibration Control using Piezoelectric-based Switched Stiffness),

18) Dadfarnia, M., MS in Mech. Eng., August 2003 (Thesis Title: Lyapunov-Based Piezoelectric Control of Hybrid Flexible Structures),

19) Grier, M., MS in Mech. Eng., August 2003 (Thesis Title: Adaptive-Passive Vibration Control of Flexible Beams using Piezoelectric Materials and Electrical Shunt Networks),

20) Knowles, D., MS in Mech. Eng., May 2003 (Thesis Title: Structural Vibration Control using Active Resonator Absorber: Modeling and Control Implementation),

21) Derkhorenian, R., MS in Mech. Eng., May 2002 (Thesis Title: Nonlinear Adaptive Vibration Control of Linear Time Invariant Uncertain Mechanical Systems Experiencing Unknown Harmonic Disturbances).

Current Position of Former PhD Graduates:

- Mr. Saeid Bashash, expected PhD in Dec. 2008: Postdoctoral Fellow, University of Michigan, Ann Arbor, MI.
- Dr. Mahmoud Reza Hosseini, Ph.D., Aug. 2008: Research Scientist, Tetramer Technologies Inc., Pendelton, SC.
- Dr. Amin Salehi-Khojin, Ph.D., May 2008: Postdoctoral Fellow, University of Illinois at Urbana-Champaign, Urbana, IL.
- Dr. S. Nima Mahmoodi, Ph.D., August 2007: Visiting Assistant Professor, Virginia Tech., Blacksburg VA.

Graduated Students (Served As Co-Advisor):

- Simoneau, J.B., Ph.D. in Elec. Eng., Aug. 2007, Advisor: Wilson Person, ECE (Dissertation Title: Improving the Performance of Software Defined Radio by Employing Digital Feedback of Radio Frequency Properties),
- Pradhan, N., MS in Elec. Eng., May 2007, Advisor: Darren M. Dawson, ECE (Thesis Title: Software Development for Mechatronics Systems),
- Srivastava, N., Ph.D. in Mech. Eng., December 2006, Advisor: Imtiaz Haque, ME (Dissertation Title: Modeling and Simulation of Friction-limited Continuously Variable Transmissions),
- Nath, N., MS in Elec. Eng., December 2006, Advisor: Darren M. Dawson, ECE (Thesis Title: Nonlinear Control Techniques for Robot Manipulators),
- McIntyre, M., Ph.D. in Elec. Eng., May 2006, Advisor: Darren M. Dawson, ECE (Dissertation Title: Lyapunov Based Control of Nonlinear Mechatronic Systems),
- Cowans, J.Q., MS in Mech. Eng., May 2005, Advisor: Eric M. Austin, ME (Thesis Title: The Effects of Viscoelastic Behavior on the Operation of A Delayed Resonator Vibration Absorber),
- Zhang, T., Ph.D. in Elec. Eng., December 2004, Advisor: Darren M. Dawson, ECE (Dissertation Title: Output Feedback and Adaptive Control of Uncertain MIMO Nonlinear Systems with Non-symmetric Input Gain Matrix),
- Braganza, D., Ph.D. in Elec. Eng., August 2004, Advisor: Darren M. Dawson, ECE (Dissertation Title: Lyapunov Based Nonlinear Techniques for Mechatronic Systems),
- Dutt, N., MS in Elec. Eng., August 2004, Advisor: Darren M. Dawson, ECE (Thesis Title: Nonlinear Control Approach to the CVD Process and a Rehabilitation Robot),
- Bin, X., Ph.D. in Elec. Eng., May 2004, Advisor: Darren M. Dawson, ECE (Dissertation Title: Lyapunov Based Control for Nonlinear Systems),
- Ramadura, S., MS in Elec. Eng., August 2002, Advisor: Darren M. Dawson, ECE (Thesis Title: Nonlinear Control Strategies for Mechatronic Systems),
- Fang, Y., Ph.D. in Elec. Eng., December 2002, Advisor: Darren M. Dawson, ECE (Dissertation Title: Lyapunov-Based Control for Mechanical and Vision-Based Systems),
- Behal, A., Ph.D. in Elec. Eng., December 2001, Advisor: Darren M. Dawson, ECE (Dissertation Title: Lyapunov Based Nonlinear Control of Electrical and Mechanical System), and
- Costic, B., Ph.D. in Elec. Eng., August 2001, Advisor: Darren M. Dawson, ECE (Dissertation Title: Energy Management and Attitude Control for Spacecraft).

Current Students:

The following students are currently working under my supervision in the Smart Structures and NEMS Laboratory at Clemson University Dept. of Mech. Eng. (www.ces.clemson.edu/ssnems).

22) Saeidpourazar, R., Ph.D. in Mech. Eng. with Expected Date of Graduation of December 2008 (Dissertation: Microcantilever-based Manipulation)

23) Vora, K., MS in Mech. Eng. with Expected Date of Graduation of December 2008 (Thesis: Dynamic Modeling and Hysteresis Compensation Techniques for Magnetorestrictive Materials),

24) Bashash, S., Ph.D. in Mech. Eng. with Expected Date of Graduation of December 2008 (Thesis: Piezoelectric-based Manipulation, Vibration Control and Positioning),

25) Raju, A., MS in Mech. Eng. with Expected Date of Graduation of August 2009 (Thesis: Tire Nitrogen Filling),

26) Aphale, S., MS in Mech. Eng. with Expected Date of Graduation of August 2009 (Thesis: Adaptive Control of an Automated Nanofiber Fabrication Unit),

27) Siles, I., MS in Mech. Eng. with Expected Date of Graduation of August 2009 (Thesis: Adaptive Control of a Robot Manipulator),

28) Eslami, S., Ph.D. in Mech. Eng. With the Expected Date of Graduation of December 2010 (Dissertation: Modelling and Image-based Control of Nanomanipulators).

Undergraduate Thesis-Option Advisees:

29) Foderaro, G., BS in Mech. Eng. with the Expected Date of Graduation of May 2009 (Thesis Title: Structural Vibration Control using Nanomaterials),

30) Eils, D., BS in Mech. Eng., December 2007 (Thesis Title: Nanomechanical Cantilever Biosensors),

31) Eichman, J., BS in Mech. Eng., May 2006 (Thesis Title: Experimental Investigation and Control of Rocking Mass Gyroscopes).

32) Kikendall, M.L., BS in Mech. Eng., December 2005 (Thesis Title: Development of Carbon Nanotube-Based Electronic Textiles),

33) Lau, S., BS in Mech. Eng., May 2006 (Thesis Title: Enhancing Wound Healing through Carbon Nanotube-Based Materials), and

34) Grier, M., BS in Mech. Eng., December 2001 (Thesis Title: Experimental Study of Active Resonator Absorber Control Schemes).