Dr. G. Song's Curriculum Vitae

University of Houston

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Highlights of Dr. Song's CV

- **Ph.D., Columbia University**, 1995
- **Assistant Professor**, University of Akron, 1998-2002
  Promoted to Associate Professor with Tenure in April, 2002
- **Associate Professor** with Tenure, University of Houston, 2002-2008
- **Full Professor** with Tenure, University of Houston, 2008-present
- Received the prestigious **Outstanding Technical Contribution Award** from the Aerospace Division of ASCE in 2008.
- Graduated **13 Ph.D.** students and **31 M.S.** students.
- Delivered **10 keynote speeches** and **82** invited talks, seminars, and short courses.
- Secured **$3, 230,000 External** Funding (Dr. Song's Credit), including **13 NSF awards** as PI or Co-PI.
- Published **96** peer-reviewed journal papers and **191** conference papers.
- Inventor or Co-inventor for **3** U.S. patents.
- Established a smart materials and structures curriculum that includes two graduate course, one undergraduate course, a supporting Smart Materials and Structures Laboratory (http://www.egr.uh.edu/smsl/), a remote laboratory extension (http://129.7.203.157/), postdoctoral training, graduate student training, and Research Experiences for Undergraduates (REU).
- Serving as an **Associate Editor** of ***Smart Materials and Structures***, a top journal in the field.
- Serving as an **Associate Editor** for **International Journal of Instrumentation Technology (IJIT)**

Part 1: Resume

Gangbing Song, Ph.D.

Professor

Director, Smart Materials and Structures Laboratory

Department of Mechanical Engineering

University of Houston, Houston, Texas, 77204

Phone (713) 743-4525 - Fax (713) 743-4503 Email: gsong@uh.edu

Education

1991 – 1995 **Ph.D.,** Department of Mechanical Engr., Columbia University New York

Ph.D. Dissertation Title: "Robust Control and Adaptive-Robust Control of Uncertain Robot Manipulators"

1989 – 1991 **M.S.,** Department of Mechanical Engr., Columbia University New York

1985 – 1989 **B.S.,** Department of Energy Engineering, Zhejiang University P. R. C

Appointments

Aug'08 – Present **Full Professor with Tenure**

Dept. of Mechanical Engineering, University of Houston, Houston, TX

Current research interests:

- Smart materials and structures in general
- Structural vibration control in general.
- Active vibration control of civil structures using smart materials
- Health monitoring of civil structures using smart materials
- Active vibration control using piezoceramic materials.
- Active position and shape control using shape memory alloy materials.
- Passive vibration damping using piezoceramic materials and shape memory alloys.
- MR fluids and its applications.
- Control theory: robust control, adaptive control, and other controls.

Advising 11 graduate students: 5 Ph.D. candidates and 6 MS students.

Aug'02 – Aug'08 **Associate Professor with Tenure**

Dept. of Mechanical Engineering, University of Houston, Houston, TX

Major activities: Initialized smart materials research and education program and established a Smart Materials & Structure Laboratory at University of Houston

Aug'02 – Aug'05 **Adjunct Associate Professor**

Dept. of Mechanical Engineering, University of Akron, Akron, OH

Mar'02 – Aug'02 **Associate Professor with Tenure**

2000 – Aug'02 **Director, Smart Materials and Structures Laboratory**

Aug'98 – Mar' 02 **Assistant Professor (Tenure track)**

Dept. of Mechanical Engineering, University of Akron, Akron, OH

- Established a Smart Materials and Structures Laboratory.
- Established a Smart Materials and Structures Research Program
- Initialized Smart Composite Research Program, a Collaboration between Mechanical and Civil Engineering Departments
- Taught Introduction to Smart Materials & Structures, Control of Smart Structures, Control System Design, System Dynamics and Response, and Design of Mechanic Systems.
- Funding agencies: **NSF (CAREER Grant, 2001), NASA, OSGC, and OBR, The University of Akron**.
- Graduated 7 graduate students

July 1996 – Aug 1998 **Assistant Research Professor (Non-tenure track)**

Aeronautics & Astronautics Dept., Naval Postgraduate School (NPS), Monterey, CA

Research projects involved:

- Flexible Spacecraft Vibration Control using Piezoelectric Material
- Vibration Control of a Cantilever Beam Using the Modular Control Patch (MCP)
- Flexible Spacecraft Vibration Reduction using Pulse-Width Pulse-Frequency Modulated Thruster
- Vibration Control of Space Truss Structure.
- Spacecraft Payload Vibration Isolation Platform
- Beam Shape Control Using Shape Memory Alloy Wires

July 1995 – June 1996 **Research Associate (Non-tenure track)**

***Mechanical Engineering Department, Naval Postgraduate School,* Monterey, CA**

Research projects and inventions involved

- Advanced Control of Electro-magnetic Bearing:
- Self-sensing Active Electro-magnetic Levitation and Bearing:
- A Microactuator with Active Electrostatic Levitation
- Friction Compensation for High Precision Motion Control:
- Articulated Mini-manipulator for Minimally Invasive Surgery (**US Patent**)

- Flexible Two-way Actuating Mechanism for End-effectors of Articulated Mini-manipulators:

Major Honors and Awards:

- **Outstanding Technical Contribution Award**, Aerospace Division of ASCE in 2008.
- **Best Paper Award**, as a co-author, in the Intelligent Sensor and Actuator Symposium at the Earth and Space'08 conferenceNSF (USA)
- **CAREER Award**, 2001
- **General Chair**, ASCE Earth and Space conference, 2010
- America Science and Engineering Who's Who, 1999.
- Naval Special Act Award, 1998.

Guest Professorship

- Guest Professor, Huazhong University of Science and Technology, China.
- Guest Professor, Wuhan University of Technology, China.
- Overseas Special Professor, Dalian University of Technology, China
- Guest Professor, Lanzhou University of Technology, China
- Guest Professor, Shenyang Jianzhu University, China

US Patent:

- Co-inventor, US Patent No.:5,810,716 – "Articulated Mini-manipulator for Minimally Invasive Surgery," Sept. 22, 1998.
- Co-inventor, US Patent No.:7,587,899 B2 -"Shape memory alloy actuated adaptive exhaust nozzle for jet engineering," issue date: Sept. 15, 2009.
- Co-inventor, No. 7, 796, 843, "Design and Performance of Fiber Bragg Grating Displacement Sensor for Measurement of Movement," issue date: Sept. 14, 2010.

Proposal Reviewer

- Proposal reviewer and panelist for National Science Foundation
  - Dynamic Systems
  - Control Systems
  - Sensor Technology
  - Nano-manufacturing
  - Course, Curriculum, and Laboratory Improvement
  - SBIR
- European Science Foundation
- National Science Foundation of China
- Chinese Ministry of Education
- Proposal reviewer for OSGC (Ohio Space Grant Consortium)
- Other funding agencies

Editorialship

- **Associate Editor** of ***Smart Materials and Structures***, a top journal in the field
- **Associate Editor** for **International Journal of Instrumentation Technology (IJIT)**
- **Editorial Board Member**, **Smart Materials Research**
- **Editorial Board Member**, **Civil Engineering and Management**

MS Students Advised or Co-advised (Total 31)

1. LT. Brian Kelly, US Navy
2. LT. Scott Johnson, US Navy
3. LT. John Vlattas, US Navy
4. Capt. Brent Andberg, US Marine Corp.
5. LCDR. George Beavers, US Navy
5. LT. Danny Busch, US Navy
7. LCDR. Steve Schmidt, US Navy
8. LCDR. Nick Buck, US Navy
9. Ms. M. Vechery, University of Akron
10. Mr. V. Chaudhry, University of Akron
11. Mr. Ken Hull, University of Akron
12. Mr. V. Dhruva, University of Akron
13. Mr. B. Kotejoshyer, U. of Akron
14. Mr. Abhay Prasad, University of Akron
15. Mr. Vineet Sethi, University of Akron
16. Mr. Ning Ma, University of Akron
17. Ms. Xiaoqin Zhou, University of Akron
18. Mr. Ming Zeng, University of Akron
19. Mr. Juntao Fei, University of Akron
20. Mr. Jinqiang Zhao, University of Akron
21. Mr. K. Otero, University of Houston
22. Mr. R. Wongapiwatkul, U. of Houston
23. Mr. Z. Hu, University of Houston
24. Mr. C. Olmi, University of Houston
25. Mr. H. Wang, University of Houston
26. Mr. Mithun Singla, University of Houston
27. Mr. Bosko Gajic, University of Houston
28. Mr. H. Ma, University of Houston
29. Mr. M. Ho, University of Houston
30. Ms. C. Chang, University of Houston
31. Mr. D. Patel, University of Houston

PhD Students Advised or Co-advised (Total 13)

1. Dr. V. Sethi, University of Houston
2. Dr. M. Xu, University of Akron
3. Dr. N. Ma, University of Houston
4. Dr. H. Gu, University of Houston
5. Dr. X. Zhao, Harbin Inst of Tech (Co-advisor)
6. Dr. M. Liu, Harbin Inst of Tech (Co-advisor)
7. Dr. D. Cui, Dalian U of Tech. (Co-advisor)
8. Dr. Luyu Li, Harbin Inst of Tech (Co-advisor)
9. Dr. B. Fan, University of Houston
10. Dr. C. Olmi, University of Houston
11. Dr. Y. Yu, University of Houston
12. Dr. XK Zhao, Univ. of Sci & Tech. Beijing (Co-advisor)
13. Dr. A. Kilicarslan, University of Houston (Co-advisor)

Publication Highlights:

96 refereed journal papers and **190** conference papers.

Presentation Highlights:

- **10 Keynote Speeches** at international conferences
- **82 Invited Talks, Seminars, and Short Courses** at various universities

Committees Served

- **General Chair, Earth and Space Conference 2010**, Aerospace Division, ASCE.
- **Conference Vice Chair** for Interactive and Tutorial Sessions, 49th IEEE Conference on Decision and Control (CDC), Atlanta, Georgia, 2010.
- **Symposium Co-Chair**, The Symposium of "New Development and Challenging Issues in 21st Engineering Education in Dynamics, Controls, and Structures," Eleventh Biennial International Conference on Engineering, Construction and Operations in Challenging Environments, ASCE Earth and Space Conference 2008, Long Beach, CA.
- **Chair and Member**, **Dynamics and Control Committee**, Aerospace Division, ASCE.
- **Member,** Technical Program Committee on the topic of "Optical Fiber Sensing Technologies," the 9th International Conference on Optical Communications and Networks (ICOCN2010), October 2010, Nanjing, China.
- **Member,** Scientific Committee Member, the 3rd International Conference on Smart Materials and Nanotechnology in Engineering (SMN2011), November, 2011, Shenzhen, China.
- **Member, Technical Committee,** 2011 International Symposium on Innovation & Sustainability of Structures in Civil Engineering (ISISS'11), Xiamen, China.
- **Member, International Science Committee,** The first International Conference on Smart Structures and Systems (ICOSSS'11), September 2011, Korea.
- **Board Member**, Asian-Pacific Network of Centers for Research in Smart Structures Technology (ANCRiSST)
- **Member**, **Organizing Committee**, 2010 IEEE/ASME International Conference on Advanced Intelligent Mechatronics, July, 2010, Canada
- Member, **Organizing and Program Committees**, 49th IEEE Conference on Decision and Control (CDC), Atlanta, Georgia, 2010.
- Member, **Adaptive Structures and Material Systems Technical Committee**, Aerospace Division, ASME
- Member, **International Advisory Committee**, International Symposium on Life-Cycle Performance of Bridges and Structures, Changsha, China, 2010.
- Member, **International Scientific Committee**, the 22th International Symposium on Structural Engineering, Guangzhou, China, 2010.
- Member, **Advance Materials Committee**, Aerospace Division, ASCE.
- Member, **Smart Materials Committee**, Asian-Pacific Network of Centers for Research in Smart Structures Technology (ANCRiSST)

- Member, **Steering Committee and Technical Committee**, 12th Biennial International Conference on Engineering, Construction and Operations in Challenging Environments, 2010, Honolulu, Hawaii.
- Member, **International Scientific Committee**, 6th International Conference on Vibration Engineering, 2008, Dalian, China.
- **Organization Committee**, International Conference on Smart Materials and Nanotechnology in Engineering, **2008**, China.
- **Technical Chair** of Intelligent Sensors and Actuators Symposium, **Steering Committee** and **Technical Committee**, Eleventh Biennial International Conference on Engineering, Construction and Operations in Challenging Environments, **2008**, Los Angeles, CA.
- **International Scientific Committee**, International Conference on Smart Materials and Nanotechnology in Engineering, **2007**, China.
- **Local Organization Committee**, the World Forum on Smart Materials and Smart Structures Technology (SMSST '07), **2007**, China.
- **Organization Committee**, 4th China-Japan-US Symposium on Structural Health Monitoring and Control, Hangzhou, China, Oct. **2006**.
- **Steering Committee** and **Technical Committee**, Tenth Biennial International Conference on Engineering, Construction and Operations in Challenging Environments, **2006**, Houston, Texas.
- **Technical Committee**, Ninth Biennial International Conference on Engineering, Construction and Operations in Challenging Environments, **2004**, Houston, Texas.
- **International Committee Member**, IEEE International Symposium on Intelligent Control, conference was held in Sept. **2004**, Taipei, Taiwan.
- **International Committee Member**, IEEE International Symposium on Intelligent Control, conference was held in June. **2005**, Limassol, Cyprus.
- **Program Committee,** 2005 IEEE/ASME International Conference on Advanced Intelligent Mechatronics**,** July, **2005** Monterey, California.
- **Scientific Committee**, The 9th International Symposium on Structural Engineering for Young Experts (ISSEYE-9), August, **2006**.
- **International Scientific Committee** and **Organization Committee**, 3rd China-Japan-US Symposium on Structural Health Monitoring and Control, the conference was held in Dalian, China, in Oct. **2004**.

Professional Membership

- Member, ASME (American Society of Mechanical Engineering)
- Member, ASCE (American Society of Civil Engineering)
- Member, SPIE (The International Society for Optical Engineering)
- Member, ASEE (American Society for Engineering Education)

Part 2: Research Funding

Total Awarded External Funding: $3, 230,000 (Dr. Song' Credit)

A. External Funding with Dr. Song as the Sole PI

1) "Innovative Multi-functional Structural Health Monitoring System for Wind Turbine Blade," **$197,000**, The State of Texas Norman Hackerman Advanced Research Program (NHARP), 2010-2012.
2) "Automatic Electrical De-icing System using Emerging Carbon Nano-fiber Paper: a Pilot Field Testing," **$50,000**, Alaska University Transportation Center, 2010-2011.
3) "Continued support for Innovative research of active materials for oil and gas exploration," Total: **$37,000**, Cameron, 2010.
4) "A Pilot Study of an FBG sensor System for Continuous Force Measurement," Total: **$13,000**, Texas Heart Institute, 2010.
5) "A Career Plan for Research and Education in Smart Materials and Structures," a CAREER Award, **$395,000**, National Science Foundation, 2001-2007.
6) "Collaborative Research: Development of Multifunctional Nanocomposites with Engineered Carbon Nanopaper," **$100,000 (UH)** (Dr. Song is the sole PI at University of Houston), National Science Foundation, 2006-2009.
7) "Proposal and Justification for Additional Labor Cost to Build and Deliver Two Testing Equipment for OptiSolar," **$39,900**, OptiSolar, 2008-2009
8) "A fellowship for research in intelligent sensors for hear assist devices" at University of Houston", **$21,000**, University of Texas Medical Branch (UTMB), 2007-2008.
9) "International Research and Education in Engineering (IREE) Supplementary Funding: Study of interlayer behavior of the nanocomposites using fiber optical sensor in collaboration with Harbin Institute of Technology (HIT), China", Total: **$27,900**, National Science Foundation, 2007-2008 .
10) "Develop an interactive smart flexible beam experiment with active vibration control," Naval Postgraduate School, Total: **$12,500.**
11) "Develop an Interdisciplinary Course 'Introduction to Smart Space Structures (ISSS)' at University of Houston", **$15,000**, Texas Space Grant Consortium, 2006-2008.
12) "Development of a Smart Vibration Platform Experiment," **$88,000**, National Science Foundation, 2004-2007.
13) "Research in Innovative Use of Smart Materials in Propulsion System Components -- Control and Experimental Issues," **$50,000**, NASA Glenn, 2004-2006.
14) "Develop a Smart Flexible Beam Experiment Using Piezoceramic Sensors and Actuators," **$100,000**, National Science Foundation, 2005-2008.
15) "Develop an Innovative Interactive Smart Material Exhibit for Children's Museum of Houston", **$75,000**, National Science Foundation, 2006-2008.

16) "An Over-Height Collision Protection System Using Smart Materials," **$20,000**, Ohio Department of Transportation via University of Akron, 2004-2006.

17) "Research in Innovative Use of Smart Materials in Propulsion System Components -- Control and Experimental Issues (Renewal for 2003)," **$68,700**, NASA Glenn, 2003.

18) "Research in Innovative Use of Smart Materials in Propulsion System Components -- Control and Experimental Issues (Renewal for 2002)," **$84,000**, NASA Glenn, 2002

19) "Research in Innovative Use of Smart Materials in Propulsion System Components -- Control and Experimental Issues," **$68,700**, NASA Glenn, 2001.

20) "Adaptive Components in Engine Propulsion System Using Smart Materials," **$20,000**, Ohio Board of Regents, February, 2002-2003.

21) "Research Experiences for Teachers (RET) in Smart Materials and Structures," Supplement to CAREER award, **$10,000**, National Science Foundation, 2001-2002.

22) "Research Experiences for Undergraduate Students in Smart Materials and Structures," **$12,500**, Supplement to CAREER award, National Science Foundation, 2001-2002.

23) "Innovative Use of Smart Materials in Propulsion System Components," **$17,100**, Ohio Board of Regents, 2001-2002.

24) "Research in Smart Materials and Structures," **$20,000**, Ohio Board of Regents, February, 2001-2002.

25) "Precision Control of Piezoelectric Smart Structures with Temperature and Hysteresis Compensation," **$5,000**, a Research Infrastructure Seed Grant award, Ohio Space Grant Consortium (OSGC), 2000.

26) "Advanced Control of Aerospace Smart Structures using Shape Memory Alloy Actuators," **$10,000**, a Research Infrastructure Seed Grant award, Ohio Space Grant Consortium (OSGC), 1999.

27) "Development of a New Aerospace Related Course – Introduction to Smart Materials and Structures in The University of Akron," **$2,500**, a Higher Education Award, Ohio Space Grant Consortium (OSGC), 2000.

28) "Development of a New Graduate Course – Control of Smart Structures," **$2,500**, a Higher Education award, Ohio Space Grant Consortium (OSGC), 2002.

29) Travel grant to present a research paper entitled, "Structural Vibration Control Using Piezoceramic Patch Actuator," in International Conference on Advances and New Challenges in Earthquake Engineering Research (ICANCEER2002) in Harbin and Hong Kong, P.R. China, **$1850**, National Science Foundation, 2002.

30) Travel grant to deliver an invited talk entitled "Precision position regulation of a shape memory alloy wire actuator using sliding-mode based robust control" US-India Symposium on Elastic Vibrations and Smart Structures, India, **$2500**, National Science Foundation, 2001.

B. External Funding with Multiple Investigators

31) "Durability Study of a New Damper for Jumper Vibration Control," Total: **$28,000**, PI. G. Song, Co-PI: LY. Mo, Dr. Song's Portion: **$20,000;** Cameron, 2010.

32) "Continued support for Innovative research of active materials for oil and gas exploration," Total: **$35,000**, PI. G. Song, Co-PI: L. Sun, Dr. Song's Portion: **$25,000;** Cameron, 2010.

33) "New Multifunctional nanocomposites for airport runways and related infrastructures," Total: **$125,000**, PI: Vipu, Co-PIs: G. Song and YL Mo, Dr. Song's Portion: **$41,700**, DoD via Rice University, 2009-11.

34) "Experimental Investigation of Innovative vibration damping of an undersea device using large models," Total: **$59,000**, PI: G. Song, Co-PIs: YL Mo, Dr. Song's Portion: **$38,000**, Cameron, 2010.

35) "Collaborative Research: Develop Innovative Labs-to-Go Kits for Multidisciplinary Undergraduate Engineering and Technology Education," Total: **$170,000**, PI: G. Song, Co-PI: YL Mo, H. Malki, and XJ Yuan, Dr. Song's Portion: **$120,000;** NSF, 2010-2012.

36) "Collaborative Research: Next generation unified framework for remote laboratory experiments," Total: **$146,000**, PI: G. Song, Co-PI: L. Sun, Dr. Song's Portion: **$102,200;** NSF, 2009-2011.

37) "Doctoral education and training in wind energy at National Wind Energy Center, U of Houston," **Total: $525,750**, PI. SS Wang, Co-PIs: G. Song, L. Sun, R. Flumerfelt, Dr. Song's Portion: **$131,437;** Department of Education, 2009-12.

38) "Continued support for Innovative research of active materials for oil and gas exploration," Total: **$70,000**, PI. G. Song, Co-PI: L. Sun, Dr. Song's Portion: **$49,000;** Cameron, 2009.

39) "Infusing Advanced Sensor Network Research into Cross-disciplinary Undergraduate Education," Total: **$200,000;** PI: XJ Yuan, Co-PI: G. Song and H. Malki, Dr. Song's Portion: **$20,000;** NSF, 2009-2011.

40) "Design of Nanofabricated piezoelectric sensors for the structural health monitoring of total hip replacement," Total: **$75,000**, PI. G. Song, Co-PI: L. Sun, CL. Chen, Dr. Song's Portion: **$40,000;** DoD via Alliance for NanoHealth.

41) "Innovative vibration damping of an undersea device," Total: **$47,000**, PI. G. Song, Co-PI: L. Sun, Dr. Song's Portion: **$30,000;** Cameron, 2009.

42) "NeTS-NECO: A Framework for Cooperative Active Sensing in Wireless Structure Health Monitoring**,**" Total: **$400,000**; PI: R. Zheng; Co-PI: G. Song; Dr. Song's Portion: **$140,000**, National Science Foundation, 2008-2011

43) "Collaborative Research: Phase II development of an innovative multi-functional smart vibration platform," Total: **$500,000**; UH Total: **$315,000**, PI: G. Song; Co-PIs: YL. Mo, H. Malki, L. Shieh, H. Hutchins; Dr. Song's Portion: **$180,000**, National Science Foundation, 2007-2010. .

44) "NEESR Payload: Damage Detection of Reinforced Concrete Columns Subjected to Combined Actions," **$100,000**, PI: YL. Mo; Co-PI: G. Song; Dr. Song's Portion: **$50,000**, National Science Foundation, 2007-2008.

45) "Innovative Research of Active Materials for Oil and Gas Exploration," Total: **$68,000**; PI: G. Song; Co-PI: L. Sun; Dr. Song's Portion: **$44,200**, Cameron, 2008-2009

46) "REU SITE: Sensor Networks and Security Infrastructure," Total: **$219,638**, PI: Malki; Co-PI: XJ. Yuan; Senior Person: G. Song; Dr. Song's Portion: **$ 21,964**, National Science Foundation, 2008-2010

47) "Rupture and Fatigue Test of New Photovoltaic Glass Plates," Total: **$12,000**, PI: G. Song; Co-PI: L. Sun; Dr. Song's Portion: **$7,200**, OptiSolar, 2008-2009

48) "International Research and Education in Engineering (IREE) Supplementary Funding: Hysteresis loop reshaping for MR dampers to achieve improved damping in collaboration with Harbin Institute of Technology (HIT), China", Total: **$31,800**, PI: K. Grigoriadis; Co-PI: G. Song; Dr. Song's Portion: **$15,900**, National Science Foundation, 2007-2008 .

49) "International Research and Education in Engineering (IREE) Supplementary Funding: Testing of Smart Aggregates in large scale civil structures at National Center for Research on Earthquake Engineering(NCREE), Taiwan", Total: **$34,000**, PI: YL Mo; Senior Person: G. Song; Dr. Song's Credit: **$17,000**, National Science Foundation, 2007-2008.

50) "Dynamic Structural Testing of OptiSolar Panels," OptiSolar, Total **$52,150**, PI: G. Song, Co-PIs: D. Zimmerman, C. Dalton, M. Franchek, Dr. Song's Credit: **$25,000**.

51) "Collaborative Research: Hysteresis Compensation Using Linear Parameter Varying Control Methods," **$263,007**, PI: K. Grigoriadis; Co-PI: G. Song; Dr. Song's Portion: **$75,000**, National Science Foundation, 2006-2009

52) "Integrate Mobile Technology in Controls Laboratories," **$75,000**, PI: G. Song; Co-PIs: M. Franchek and H. Malki; Dr. Song's Portion: **$45,000**, Hewlett Packard, 2006-2008.

53) "REU Site: Undergraduate Research Experience in Civil Infrastructure Engineering," **$76,947**, PI: Y.L. Mo; Co-PIs: K. Wang; Senior Person: G. Song, H. S. Rifai; Dr. Song's Portion: **$18,000**, NSF, 2007.

54) "Meeting Industries' Critical Workforce Needs: Aerospace and Defense Cluster," **$260,000**, PI at UH: K. Grigoriadis; Co-PIs: D. Zimmerman, M. Franchek, P. Sharma, K. Hollingsworth, G. Song; Dr. Song's Portion: **$40,000**, Texas Workforce Commission, 2007-08.

55) "Development of Effective Structural Composite Health Monitoring Systems by Smart Materials," PI: P. Qiao Co-PIs: **G. Song**, W. Lestari, W. Binienda; Ohio Aerospace Institute, **$73,000**, Dr. Song's Portion: **$25,000**, 2002-2004. Location of Project: The University of Akron.

C. Competitive Internal Funding as Principal Investigator (PI)

Total: $ 209,000

56) "Development of Innovative Undersea Blowout Preventer (BOP) Using Shape Memory Alloy Actuators," **$30,000**, a GEAR award, University of Houston, 2004-2005.

57) "Develop Internet Interactive Smart Structures Experiments," **$25,000**, a FIP-B award, University of Houston, 2004-2005.

58) "Increasing Concrete Structural Survivability Using Smart Materials," **$20,000**, a GEAR award, University of Houston, 2003-2004.

59) "Robust Control of a Smart Composite Beam using Shape Memory Alloy Wire Actuators," University of Akron Internal Faculty Research Grant, **$5500**, Spring, 2000.

60) "A Plan to Apply for Federal Curriculum Innovation Funding," Summer Teaching Innovation Grant, University of Akron, **$5000**, 2000.

61) "Research in Smart Composite Structures Using Piezoelectric Ceramics for Vibration Control and Health Monitoring," University of Akron for Fall'00 Internal Faculty Research Grant, **$5500**, Fall, 2000.

62) "To Initiate Smart Mini and Micro Legged-Robot Research In the College of Engineering," Firestone Research Initialization, University of Akron, **$5000,** 2000.

63) "Research Experiences for Undergraduate Students in Smart Materials and Structures," Summer Teaching Fellowship, University of Akron, **$5000**, 2001.

64) "Bring Innovative Demonstrations and Experiments to Classroom," Summer Teaching Grant, University of Akron, **$8000**, 1999.

65) "Initiate Research in Smart Composite Structures in College of Engineering," PI: G. Song, Co-PIs: P. Qiao and W.K. Binienda, **$100,000** (for a postdoc position for two years), funded by College of Engineering of University of Akron.

Part 3: Keynote Speeches

1) "Innovative Health Monitoring of Wind Turbine Blade using Wireless Sensor Network based Active Sensing Approach," The 11th International Symposium on Structural Engineering (ISSE-11). (Guangzhou, China), December, 2010. (Keynote Speech).

2) "Wireless Sensor Network for Novel Damage Detection of Wind Turbine Blade with Active Sensing Approach," Workshop on Higher Education in Sensor Networks (Wuxi, China), November, 2010. (Keynote Speech).

3) "Smart Materials and Structures: An Introduction and the State-of-the-Art," The 22nd. International Congress of Mechanical Engineering (of Mexico) (Monterrey, Mexico), Nov 5, 2009. (Keynote Speech).

4) "Piezoceramic Based Smart Aggregates: Novel Multi-functional Sensors for Health Monitoring of Concrete Structures," The 1st International Postgraduate Conference on Infrastructure and Environment (Hong Hong), June, 2009. (Keynote Speech). Presented by Dr. G. Song.

5) "Viscoelastic Materials and Structural Dampening," Cameron Worldwide Technology Conference (Houston, TX), May 20, 2009. (Keynote Speech).

6) "Smart Materials and Structures: the State-of-the-Arts," Cameron Worldwide Technology Conference (Houston, TX), May 14, 2008. (Keynote Speech).

7) Keynote Speech, "Smart Aggregates," 4th China-Japan-US Symposium on Structural Health Monitoring and Control, October, 2006, Hangzhou, China.

8) Keynote Speech, "Structural Control Using Smart Materials", The 8th International Symposium on Structural Engineering for Young Experts (ISSEYE-8), August 16, 2004, Xi'an, China.

9) Keynote Speech, "State-of-The-Art in Smart Materials and Their Applications," October 15, 2005, 18th Annual Mechanical Engineering Congress (of Mexico), Monterrey, Mexico.

10) Keynote Speech, "Smart Materials and Their Applications," 2nd Mechantronics Congress (of Mexico), August 27, 2005, San Luis Potosi, Mexico.

Part 4: Invited Talks and Short Courses Taught (82)

1) Invited Seminar, "Piezoceramic Based Smart Aggregates: a Distributed Intelligent Multi-purpose Sensor Network (DIMSN) for Civil Structures," China University of Electronic Engineering, June 30, 2010, Chendu, China.

2) Invited Seminar, "Smart Aggregates: a Distributed Intelligent Multi-purpose Sensor Network (DIMSN) for Civil Structures," Southern China University of Technology, Guangzhou, China, December 19, 2010.

3) Invited Seminar, "Smart Aggregates: a Distributed Intelligent Multi-purpose Sensor Network (DIMSN) for Civil Structures," Jiangnan University, Wuxi, China, Nov. 11, 2010.

4) Invited Seminar, “Recent Progress of Smart Aggregates: Innovative Multi-Functional Sensors for Concrete Structures”, Nanjing University, China, March 24, 2010.

5) Short Course, “Introduction to MR Fluid and Its Engineering Application,” School of Mechanical Engineering and Automation, Wuhan University of Science and Technology, Nov. 16, 2010.

6) Invited Seminar, “Smart Aggregates: a Multi-functional Sensor for Concrete Civil Structures,” Department of Civil Engineering, City University of Hong Kong, June 25, 2010, Hong Kong.

7) Invited Public Seminar, “Piezoceramic Based Smart Aggregates: a Distributed Intelligent Multi-purpose Sensor Network (DIMSN) for Civil Structures,” Hong Kong Polytechnic University, June 25, 2010, Hong Kong.

8) Invited Seminar, “Wind Turbine Accidents,” Shenyang Jianzhu University, July 3, 2010, Shenyang, China.

9) Invited Seminar, “Innovative Health Monitoring of Wind Turbine Blade using Wireless Sensor Network based Active Sensing Approach,” Harbin Institute of Technology, December 16, 2010, Harbin, China.

10) Invited Seminar, “The State-of-the-Art of Smart Materials and Their Civil Engineering Applications,” Department of Civil Engineering, Meijo University, July 16, 2010, Japan.

11) Invited Seminar, “Self-heating Concrete and Smart Aggregate: Recent Advances in Concrete Research at University of Houston,” College of Engineering, University of Alaska-Anchorage, November 20, 2009, Anchorage, Alaska.

12) Invited Seminar, “Piezoceramic Based Smart Aggregates: a Distributed Intelligent Multi-purpose Sensor Network (DIMSN) for Civil Structures,” College of Science and Technology, Texas Southern University, Houston, TX, December 3, 2009.

13) Invited Seminar, “Most Recent Progress on Smart Aggregate Research,” School of Civil Engineering, Harbin Institute of Technology, October, 2009.

14) Short Course, “Introduction to Smart Materials and Structure with application to Civil Engineering”, Dalian University of Technology, May 11-13, 2009.

15) Short Course, “Smart Materials and Structures with Classical and Modern Control Theories,” Harbin Institute of Technology – Shenzhen Graduate School, March 17-19, 2008.

16) Invited Seminar, “Smart Aggregates: Multi-functional Sensors for Civil Structures,” Beijing Jiao Tong University, October 13, 2009, Beijing, China.

17) Short Course, “PIEZOCERAMIC-BASED MULTIFUNCTIONAL SMART AGGREGATES FOR CONCRETE STRUCTURES,” Pre-conference short course at the 5th international Workshop on Advanced Smart Materials and Structures Technology (Boston, MA), June, 2009.

18) Invited Seminar, “Smart Aggregates: Distributed Intelligent Multi-purpose Sensor Network (DIMSN) for Civil Structures”, University of Texas – San Antonio, Department of Electrical and Computer Engineering, October 30, 2008, San Antonio, TX.

19) Invited Talk, “Shape Memory Alloy Actuated Blowout Preventer,” Cameron R&D Center (Houston, TX), April 10, 2008.

20) Invited Seminar, “Smart Aggregates: Multi-functional Sensors for Structural Health Monitoring of Concrete Structures,” School of Civil Engineering, Wuhan University, October 17, 2008.

21) Invited Seminar, “Smart Aggregates: Multi-functional Sensors for Structural Health Monitoring of Concrete Structures,” School of Civil and Hydraulic Engineering, Dalian University of Technology, December 9, 2008.

22) Short Course, “Smart Materials and Structures with Classical and Modern Control Theories,” Harbin Institute of Technology – Shenzhen Graduate School, March, 2008.

23) Invited Seminar, “Intelligent Control of Nonlinear Structural Vibration,” School of Mechanical Engineering, Wuhan University of Science and Technology, October 16, 2008.

24) Invited Seminar, “Vibration Control of Flexible Structures Using Loop Shaping Method,” School of Mechanical Engineering, Wuhan University of Science and Technology, June 30, 2008.

25) Invited talk, “The State-of-the-Art of Smart Materials and Their Applications”, University of Science and Technology Beijing, School of Mechanical Engineering, July 20, 2007, Beijing, China.

26) Invited talk, “Smart Materials and Structures and Their Civil Engineering Applications”, Xiamen University, School of Civil and Architecture Engineering, July 18, 2007, Xiamen, China.

27) Invited talk, “Internet Controlled Remote Experiment & Smart Materials and Structures Remote Laboratory Extension at University of Houston”, Hunan University, School of Civil Engineering, May 28, 2007, Changsha, China.

28) Invited talk, “Smart Materials and Structures and Their Applications in Civil Engineering”, Hehai University, School of Civil Engineering, May 25, 2007, Nanjing, China.

29) Invited talk, “Smart Aggregates: a Distributed Intelligent Multi-purpose Sensor Network (DIMSN) for Civil Structures”, April 19, 2007, National Center for Research in Earthquake Engineering, Taipei, Taiwan.

30) Invited talk, “Smart Aggregates,” March 14, 2007, School of Civil Engineering, Harbin Institute of Technology, Harbin, China.

31) Invited talk, “Smart Aggregates,” March 12, 2007, School of Civil Engineering, Shenyang Jianzhu University, Shenyang, China.

32) Invited Seminar, “An Innovative Ultradeepwater Subsea Blowout Preventer (SSBOP) Control System Using Shape Memory Alloy Actuators,” Harold Vance Department of Petroleum Engineering, October 3, 2006, Texas A&M University.

33) Invited Seminar, “The State-of-the-Art of Smart Materials and Their Applications” Shenzhen Polytechnic, June 6, 2006, Shenzhen, China.

34) Invited talk, “The State-of-the-Art of Smart Materials and Their Applications,” American Society of Materials – Houston Chapter, April 11, 2006, Houston.

35) Invited Seminar, “The State-of-the-Art of Smart Materials and Structures and Their Applications,” March 24, 2006, College of Engineering, University of South Alabama.

36) Invited University Lecture: “Smart Materials and Structures and Their Applications,” January 4, 2006, Shenyang Jianzhu University.

37) Invited lectures, a. “Smart Materials and Their Applications,” b. “Active Vibration Control Using Piezoelectric Materials – Classical Control Methods,” c. “Basics about System Dynamics and Controls,” December 28, 29, and 30, 2005, Huazhong University of Science and Technology.

38) Invited Seminar, “Structural Control and Health Monitoring Using Smart Materials,” September 28, 2005, Department of Civil Engineering, Louisiana State University.

39) Invited Short Course, “Smart Materials and Structures with Applications in Civil Engineering,” July 12-14, 2005, School of Civil Engineering, Lanzhou University of Technology.

40) Invited University Lecture, “The-State-of-the-Art in Smart Structures and Their Civil Engineering Applications: Structural Control and Health Monitoring,” July 15, 2005, School of Civil Engineering, Lanzhou University of Technology.

41) Invited Seminar, “Structural Control and Health Monitoring Using Smart Materials,” March 20, 2005, Huazhong University of Science and Technology.

42) Invited Talk, “Structural Control Using Smart Materials,” Department of Mechanical Engineering, September 2, 2004, National Center for Research in Earthquake Engineering, Taipei, Taiwan.

43) Invited Lectures: a. “Structural Health Monitoring Using Piezoceramic Materials,” b. “Application of Shape Memory Alloy in Structural Control,” c. “Structural Vibration Control Using Piezoceramic Materials,” August 25 and 26, 2004, School of Civil Engineering, Harbin Institute of Technology, China.

44) Invited Talk, “Smart Materials and Active Structural Vibration Control Using Piezoceamic Materials,” May 15, 2004, Department of Mechanical Engineering, Dalian University of Technology, China.

45) Invited Short Course: “Introduction to Smart Structures with Civil Engineering Applications,” May 12-14, Dalian University of Technology, China.

46) Invited Seminar, “Active Structural Vibration Control Using Piezoceramic Materials,” April 15, 2004, Department of Civil Engineering, Rice University.

47) Invited talk entitled, “Active Vibration Control Using Piezoceramic Materials,” Nov. 14, 2003, Department of Civil Engineering, University of Akron.

48) Invited short Course entitle, “Intelligent Structures,” a 2-day short course taught to faculty members at Department of Mechanical Engineering, Oct. 30 and Oct 31, 2003, Monterrey Technological University, Mexico. Sponsored by Monterrey Technological University and CONACyT.

49) Invited Mini Symposium: “Part 1: Introduction to smart materials,” “Part 2: Applications of smart materials,” A Mini Symposium on Smart Materials and Structures organized by ASME section at Monterrey Technological University, Oct. 29, 2003, Monterrey Technological University, Mexico. Sponsored by Monterrey Technological University and CONACyT.

50) Invited talk entitled, “Introduction to smart materials,” Oct. 28, 2003, Department of Mechanical Engineering, Monterrey Technological University, Mexico.

51) Invited talk entitled, “Control of Shape Memory Alloy Smart Materials and Structures,” Sept. 19, 2003, Department of Mechanical Engineering, Rice University.

52) Invited talk entitled, “Active Vibration Control Using Smart Materials,” Sept. 17, 2003, Department of Civil Engineering, University of Houston.

53) Invited talk entitled, “Active Vibration Control Using Smart Materials,” August 22, 2003, School of Civil Engineering and Hydrology, Dalian University of Technology, China.

54) Invited short course entitled “Smart Materials and Structures - Issues in Controls and Civil Engineering Applications,” School of Civil Engineering, Dalian University of Technology, Dalian, China, December, 2002.

55) Invited talk entitled, “Control of Shape Memory Alloy Smart Materials and Structures,” US Naval Postgraduate School, Monterey, California, December, 2002.

56) Invited lecture entitled, “Smart Materials and Structures and Their Applications”, Weekly Departmental Seminar of Mechanical Engineering, University of Akron, November, 2002.

57) Invited graduate lecture entitled, “Shape Memory Alloys and Their Applications,” University of Cincinnati, November, 2002.

58) Invited lecture entitled, “Smart Materials and Their Applications,” Harbin Institute of Technology, Harbin, China, August, 2002.

59) Invited talk entitled, “Introduction to Smart Materials and Structures and Their Applications,” Shenyang Architectural and Civil Engineering Institute, Shenyang, China, June, 2002.

60) Invited talk entitled, “Introduction to Smart Materials and Structures and Their Applications,” Dalian University of Technology, Dalian, China, June, 2002.

61) Invited talk entitled “Active Vibration Control of An 11-Foot-Long Composite I-Beam Using Piezoelectric Materials and Future Smart Structures Research, University of Houston, May, 2002.

62) Invited talk entitled “Shape, Vibration, and Position Control using Smart Materials,” Michigan Technological University, May, 2002.

63) Invited talk entitled “Shape, Vibration, and Position Control using Smart Materials,” Oregon State University, April, 2002.

64) Invited talk entitled “Shape, Vibration, and Position Control using Smart Materials,” University of Missouri at Rolla, March, 2002.

65) Invited seminar lecture entitled “Research in Smart Materials and Structures,” University of Central Florida, March, 2002.

66) Invited seminar lecture entitled “Research in Smart Materials and Structures,” University of Wisconsin-Milwaukee, February, 2002.

67) Invited graduate lecture entitled, “Shape Memory Alloys: Basic, Actuator, and Their Applications,” University of Cincinnati, November, 2001.

68) “Use Smart Materials and Structures and Their Applications,” American Society of Metallurgy (ASM) – Canton Chapter, February, 2001.

69) Invited talk entitled “Precision position regulation of a shape memory alloy wire actuator using sliding-mode based robust control” US-India Symposium on Elastic Vibrations and Smart Structures, India, National Science Foundation, 2001.

70) Invited lecture entitled, “Smart Materials and Their Applications,” Aircraft Braking System, Inc., Akron, Ohio, November, 2000.

71) Invited seminar entitled, “Smart Materials and Their Applications,” Beijing University of Aeronautics and Astronautics, Beijing, China, September, 2000.

72) An invited two-day short course entitled “A Workshop on Smart Materials and Structures,” Huazhong University of Science and Technology, Wuhan, China, September, 2000.

73) An invited paper and presentation entitled, “Vibration Reduction for Flexible Spacecraft Attitude Control using PWPF Modulator and Smart Structures," at IEEE Aerospace Conference (Snowmass, Co), 1999.

74) An invited four-day short course on Smart Materials and Structures, Northwestern Polytechnical University, Xian, China, November, 1998.

75) An invited talk entitled, “Active Vibration Control of Flexible Structures Using Smart Materials,” The University of Akron, April, 1998.

76) An invited talk entitled, “Active Vibration Control of Flexible Structures Using Smart Materials,” Catholic University of America, April, 1998.

77) An invited talk entitled, “Vibration Suppression of Flexible Structures Using Piezoceramic Materials,” Naval Academy, April, 1998.

78) An invited talk entitled, “Active Vibration Control of Flexible Structures Using Smart Materials,” University of Michigan – Dearborn, March, 1998.

79) An invited talk entitled, “Active Vibration Control of Flexible Structures Using Smart Materials,” San Diego State University, March, 1998.

80) An invited seminar entitled “Application of Piezoceramics to Vibration Suppression of a Spacecraft Flexible Appendage,” Bradley University, April, 1997.

81) An invited seminar entitled “Application Vibration Using Piezoceramic Materials,” University of Missouri - Columbia, April, 1997.

82) An invited seminar entitled “Robust-adaptive Control of Active Magnetic Bearings,” University of Idaho - Pocatello, May, 1996.

Part 5: List of Publications

A. Articles in Peer Reviewed Journals (Total: 96)

1) Huang, Qing; Xu, Bin; Li, Bing; Song, Gangbing and Teng, Jun. Monitoring for large cross-section CFSTs of a super high-rise building with piezoceramic actuators and sensors, Advanced Materials Research, 2011,v 163-167, p 2553-2559, (SCI, EI)

2) Chang, Christiana; Gu, Haichang; Liang, Fei; Gou, Jihua; Sun, Li; Song, Gangbing, Damping characterization and analysis of carbon nanofiber modified composite laminates, Journal of Advanced Materials, 2011, v 43, n 1, p 22-29 (SCI,EI)

3) Zhao, Xiukuan; Li, Min; Song, Gangbing; Xu, Jinwu, "Hierarchical ensemble-based data fusion for structural health monitoring", Smart Materials and Structures, v 19, n 4, April, 2010. (SCI, EI)

4) Cui, Di; Song, Gangbing; Li, Hongnan, "Modeling of the electrical resistance of shape memory alloy wires", Smart Materials and Structures, v 19, n 5, May, 2010. (SCI, EI)

5) Li, Peng, Gu, Haichang, Song, Gangbing, Zheng, Rong, and Mo, Y. L. "Concrete structural health monitoring using piezoceramic-based wireless sensor networks," Smart Structures and Systems, v. 6, n 5-6, p731-748, May-June, 2010. (SCI, EI)

6) Gu, Haichang ; Moslehy, Yashar; Sanders, David; Song, Gangbing; Mo, Y.L. Multi-functional smart aggregate-based structural health monitoring of circular reinforced concrete columns subjected to seismic excitations, Smart Materials and Structures, v 19, n 6, June, 2010. (SCI, EI)

7) Moslehy, Yashar ; Gu, Haichang; Belarbi, Abdeldjelil; Mo, Y.L.; Song, Gangbing, Smart aggregate based damage detection of circular RC columns under cyclic combined loading, Smart Materials and Structures, v 19, n 6, June, 2010. (SCI, EI)

8) Lu, Zhao; Liang, Lily Rui; Song, Gangbing; Wang, Shufang, Polychotomous kernel Fisher discriminant via topdown induction of binary tree, Computers and Mathematics with Applications, v 60, n 3, p 511-519, August 2010. (SCI, EI)

9) Zheng, Rong; Vu, Khuong; Pendharkar, Amit; Song, Gangbing, Obstacle discovery in distributed actuator and sensor networks, ACM Transactions on Sensor Networks, v 7, n 3, September 2010. (SCI, EI)

10) Wu, Jian; Singla, Mithun; Olmi, Claudio; Shieh, Leang S.; Song, Gangbing, Digital controller design for absolute value function constrained nonlinear systems via scalar sign function approach, ISA Transactions, v 49, n 3, p 302-310, July 2010. (SCI, EI)

11) Canelon, Jose I.; Shieh, Leang S.; and Song, Gangbing, A new neural network-based approach for self-tuning control of nonlinear SISO discrete-time systems, International Journal of Systems Science, v 41, n 12, p 1421-1435, December, 2010. (SCI, EI)

12) Luyu Li, Gangbing Song, Jinping Ou. Nonlinear Structural Vibration Suppression Using Dynamic Neural Network Observer and Adaptive Fuzzy Sliding Mode Control. Journal of Vibration and Control, 16(10): 1503-1526, September, 2010. (SCI, EI)

13) Luyu Li, Gangbing Song, Jinping Ou. A Genetic Algorithm-based Two-phase Design for Optimal Placement of Semi-active Dampers for Nonlinear Benchmark Structure. Journal of Vibration and Control, 16(9): 1379-1392, August, 2010. (SCI, EI)

14) Y. Yu, G. Song, and L. Sun, Determinant role of tunneling resistance in electrical conductivity of polymer composites reinforced by well dispersed carbon nanotubes, JOURNAL OF APPLIED PHYSICS, 108, 084319, October, 2010. (SCI, EI)

15) Chang, Christiana; Ho, Michelle; Song, Gangbing; Mo, Yi-Lung; Li, Hui, A feasibility study of self-heating concrete utilizing carbon nanofiber heating elements, Smart Materials and Structures, v 18, n 12, December, 2009. (SCI, EI)

16) Quant, M. ; Elizalde, H.; Flores, A.; Rami´rez, R.; Orta, P.; Gangbing Song, A comprehensive model for piezoceramic actuators: modeling, validation and application, Smart Materials and Structures, v 18, n 12, p 125011 (16 pp.), December, 2009. (SCI, EI)

17) Xuefeng Zhao, Jihua Gou, Gangbing Song, Jinping Ou. Strain monitoring in glass fiber reinforced composites embedded with carbon nanopaper sheet using Fiber Bragg Grating (FBG) sensors smart aggregates. Composites: Part B, 2009, 40, 134–140 (SCI, EI).

18) Arghadeep Laskar, Haichang Gu, YL Mo and Gangbing Song. Progressive collapse of a two-story reinforced concrete frame with embedded. Smart Materials and Structures. 2009, 18, 1-10 (SCI, EI).

19) Shi Yan,Wei Sun, Gangbing Song, Haichang Gu, Lin-Sheng Huo, Bo Liu and Yue-Guo Zhang. Health monitoring of reinforced concrete shear walls using smart aggregates. Smart Materials and Structures. 2009, 18, 1-6. (SCI, EI)

20) Liang Ren, Jianyun Chen, Hong-Nan Li, Gangbing Song and Xueheng Ji. Design and application of a fiber Bragg grating strain sensor with enhanced sensitivity in the small-scale dam model. Smart Materials and Structures. 2009, 18, 1-7. (SCI, EI).

21) G. Song, ZP. Hu, K. Sun, "An innovative ultradeepwater subsea blowout preventer control system using shape-memory alloy actuators," Journal of Energy Resources Technology-transactions of the ASME, Volume: 130 Issue: 3 Article Number: 033101 Published: SEP 2008 (SCI, EI).

22) L. Sun, Y. Yu, G. Song, et al. "Numerical analysis of acoustic wave propagation in layered carbon nanofiber reinforced polymer composites," Journal of Applied Physics, Volume: 104 Issue: 4 Article Number: 043522 Published: AUG 15 2008 (SCI, EI).

23) M. Liu, V. Sethi, G. Song, "Investigation of locking force for stay cable vibration control using magnetorheological fluid damper," Journal of Vibration and Acoustics-transactions of the ASME, Volume: 130 Issue: 5 Article Number: 054504 Published: OCT 2008

24) V. Sethi, G. Song, MA. Franchek, "Loop shaping control of a model-story building using smart materials," Journal of Intelligent Material System and Structures, Volume: 19 Issue: 7 Pages: 765-777 Published: JUL 2008

25) G. Song, HC. Gu, YL. Mo, "Smart aggregates: multi-functional sensors for concrete structures - a tutorial and a review," Smart Materials and Structures, Volume: 17 Issue: 3 Article Number: 033001 Published: JUN 2008

26) HC. Gu, G. Song, H. Malki, "Chattering-free fuzzy adaptive robust sliding-mode vibration control of a smart flexible beam," Smart Materials and Structures, Volume: 17 Issue: 3 Article Number: 035007 Published: JUN 2008

27) V. Sethi, G. Song, “Multimodal vibration control of a flexible structure using piezoceramic sensor and actuator,” Journal of Intelligent Material System and Structures, Volume: 19 Issue: 5 Pages: 573-582 Published: MAY 2008

28) LS. Huo, G. Song, HN. Li, et al. “H-infinity robust control design of active structural vibration suppression using an active mass damper,” Smart Materials and Structures. Volume: 17 Issue: 1 Article Number: 015021 Published: FEB 2008

29) H. Xing, L. Sun, G. Song, et al. “Surface coating of carbon nanofibers/nanotubes by electrodeposition for multifunctionalization,” Nanotechnology, Volume: 19 Issue: 2 Article Number: 025704 Published: JAN 16 2008

30) V. Sethi, and G. Song, “Multimodal Vibration Control of a Flexible Structure using Piezoceramic Sensor and Actuator,” Journal of Intelligent Material Systems and Structures, Vol. 19, Issue: 5, 2008, 573-582. (SCI, EI).

31) G. Song and H. Gu, “Active vibration suppression of a smart flexible beam using a sliding mode based controller,” Journal of Vibration and Control, Vol. 13, Issue: 8, 2007. 1095-1107 (SCI, EI).

32) G. Song, N. Ma, H.-J. Lee, and S. Arnold, “Design and control of a proof-of-concept variable area exhaust nozzle using shape-memory alloy actuators,” Smart Materials and Structures, Vol.16, pp.1342 – 1347, August, 2007. (SCI, EI)

33) H. Gu and G. Song, “Active vibration suppression of a flexible beam with piezoceramic patches using robust model reference control,” Smart Materials and Structures, Vol.16, pp. 1453 - 1459, August, 2007. (SCI, EI)

34) M. Liu, G. Song, and H. Li, “Non-model based semi-active vibration suppression of stay cables using Magneto-Rheological (MR) fluid damper,” Smart Materials and Structures, Vol.16, pp. 1447-1452, August, 2007. (SCI, EI)

35) C. Olmi, G. Song, and Y. L. Mo, “An innovative and multi-functional smart vibration platform,” Smart Materials and Structures, Vol.16, pp. 1302-1309, August, 2007. (SCI, EI)

36) G Song, H. Gu, Y. L. Mo, T. T. C. Hsu and H. Dhonde, “Concrete structural health monitoring using embedded piezoceramic transducers,” Smart Materials and Structures, volume 16, pp. 959-968, 2007. (SCI, EI)

37) W. Ren, H.-N. Li, and G. Song, “Phenomenological modeling of the cyclic behavior of superelastic shape memory alloys,” Smart Materials and Structures, volume 16, pp. 1083-1089, 2007. (SCI, EI)

38) G. Song, N. Ma, H-J Lee, “Position estimation and control of SMA actuators based on electrical resistance measurement,” Smart Structures Systems – An International Journal, Vol. 3, No. 2, April, 2007. (SCI, EI)

39) H.-N. Li, J. Li, and G. Song, “Improved suboptimal Bang–Bang control of aseismic buildings with variable friction dampers,” Acta Mechanica Sinica, Vol. 23, pp.101-109, 2007. (SCI).

40) G. Song, C. Olmi, and H. Gu, “An overheight vehicle–bridge collision monitoring system using piezoelectric transducers,” Smart Materials and Structures, volume 16, pp. 462-468, 2007. (SCI, EI)

41) W. Ren, H.-N. Li, and G. Song, “A one-dimensional strain-rate-dependent constitutive model for superelastic shape memory alloys,” Smart Materials & Structures, Vol.16, pp.191-197, 2007. (SCI, EI)

42) J. Gou, S. O’Braint, H. Gu, and G. Song, “Damping Augmentation of Nanocomposites Using Carbon Nanofiber Paper,” Journal of Nanomaterials, Volume 2006, Article ID 32803, Pages 1–7, 2006.

43) H. Gu, G. Song, , H. Dhonde, Y.L. Mo, and S. Yan, “Concrete early-age strength monitoring using embedded piezoelectric transducers,” Smart Materials & Structures, Vol.15, pp.1837-45, 2006. (SCI, EI)

44) G. Song, V. Sethi and H.-N. Li, “Vibration control of civil structures using piezoceramic smart materials: A review,” Engineering Structures, Volume 28, Issue 11, Pages 1513-1524, September 2006. (SCI, EI)

45) D-S Li, H-N Li, L. Ren, and G. Song, “Strain transferring analysis of fiber Bragg grating sensors,” Optical Engineering, Vol. 45, 024402, 2006. (SCI, EI)

46) Gou, J., B. Fan, G. Song, and A. Khan, “Study of affinities between single-walled nanotube and epoxy resin using molecular dynamics simulation,” International Journal of Nanoscience, Vol. 5, No. 1, pp.131-144, Feb. 2006.

47) Sethi, V. and G. Song, “Pole-placement vibration control of a flexible composite I-beam using piezoceramic sensors and actuators,” Journal of Thermoplastic Composite Materials, Vol.19, No. 3, pp.293-308, 2006. (SCI, EI)

48) Song, G., N. Ma, H.-N. Li, “Applications of Shape Memory Alloys in Civil Structures,” Engineering Structures, Volume 28, Issue 9, pp. 1266-1274, 2006. (SCI, EI)

49) Song, G, Y L Mo, K Otero and H Gu, “Health monitoring and rehabilitation of a concrete structure using intelligent materials,” Smart Materials & Structures, Vol.15, No. 2, pp.309-314, 2006. (SCI, EI)

50) Sethi, V. and G. Song, “Multimode vibration control of a smart model frame structure,” Smart Materials & Structures, Vol.15, No. 2, pp.473-479, 2006. (SCI, EI)

51) Song, G and Zeng, M, “A thin-film magnetorheological fluid damper/lock, Smart Materials & Structures, Vol.14, No.2, pp. 369-375, APR 2005. (SCI, EI)

52) Li, H.-N., Chang, Z.-G. and G. Song, “Studies on Structural Vibration Control with MR Dampers Using μGA”. Earthquake Engineering and Engineering Vibration, 2005, 4(2): 301-304. (SCI, EI)

53) Fan, B; Song, G; and Hussain, F, “Simulation of a piezoelectrically actuated valveless micropump,” Smart Materials and Structures, 14 (2): 400-405 APR 2005. (SCI, EI)

54) Song, G; Zhao, JQ; Zhou, XQ; de Abreu-Garcia, JA, “Tracking control of a piezoceramic actuator with hysteresis compensation using inverse Preisach model,” IEEE-ASME Transactions on Mechatronics, 10 (2): 198-209 APR 2005. (SCI, EI)

55) Sethi, V. and G. Song, “Optimal vibration control of a model frame structure using piezoceramic sensors and actuators,” Journal of Vibration and Control, Vol. 11, No. 5, pp.671-684, May 2005. (SCI, EI)

56) Li, H.-N., Qi. Jin, G. Song, G.-X. Wang. TLCD Semi-active Control Methodology of Fuzzy Neural Network for Eccentric Buildings. Lecture Notes in Computer Science, 2005, 3612: 1089-1098(SCI, EI).

57) Bannerot, R and Song, G. "Development of an interactive MR fluid experiment for smart materials curricula," International Journal of Modern Physics B, 19 (7-9): 1478-1484 Part 2 Sp. Iss. SI APR 10 2005. (SCI, EI)

58) G. Song and D. Quinn, "Experimental study of the robust tracking control of a shape memory wire actuator," Transactions of the ASME: Journal of Dynamic Systems, Measurement, and Control, Vol. 126, pp. 674-678, September, 2004. (SCI, EI)

59) Hamey, CS, Lestari, W, Qiao, PZ, and Song, G. "Experimental Damage Identification of Carbon/Epoxy Composite Beams Using Curvature Mode Shapes," International Journal of Structural Health Monitoring, Vol. 3(4), pp.333-353, 2004.

60) H.-N. Li, L. Sun, and G. Song, "Modal combination method for earthquake-resistant design of tall structures to multidimensional excitations," The Structural Design of Tall and Special Buildings, Volume 11, Issue 4, December, 2004. (SCI, EI)

61) M. B. Xu and G. Song, "Adaptive control of vibration wave propagation in cylindrical shells using SMA wall joint," Journal of Sound and Vibration, Volume 278, Issues 1-2, Pages 307-326, November 2004. (SCI, EI)

62) H.-N. Li, D.-S. Li and G. Song, "Recent applications of fiber optic sensors to health monitoring in civil engineering," Engineering Structures, Volume 26, Issue 11, Pages 1647-1657, September, 2004. (SCI, EI)

63) G. Song, P. Qiao, V. Sethi, and A. Prasad, "Active vibration control of a smart pultruded fiber-reinforced polymer I-beam," Smart Materials and Structures, volume 13, No 4, pp. 819-827, June, 2004. (SCI, EI)

64) N. Ma, G. Song, and H-J Lee, "Position control of Shape Memory Alloy actuators with internal electrical resistance feedback using neural networks," Smart Materials and Structures, volume 13, No 4, pp. 777-783, June, 2004. (SCI, EI)

65) G Song, X Zhou and W Binienda, "Thermal deformation compensation of a composite beam using piezoelectric actuators," Smart Materials and Structures, volume 13, No 1, pp. 30-37, February, 2004. (SCI, EI)

66) H. Li, S. Wang, G. Song, G. Liu, "Reduction of seismic forces on existing buildings with newly constructed additional stories including friction layer and dampers," Journal of Sound and Vibration, Volume 269, Issues 3-5, Pages 653-667, January, 2004. (SCI, EI)

67) N. Ma and G. Song, "Control of shape memory alloy actuator using pulse with (PW) modulation," Smart Materials and Structures, volume 12, issue 5, pp.712 – 719, 2003. (SCI, EI)

68) G. Song and V. Sethi, "Comparative study of active vibration control of a large composite I-beam," International Journal of Acoustics and Vibration, Vol. 8, No.4, pp.231-238, 2003.

69) G. Song. "Robust position regulation of a shape memory alloy wire actuator," Journal of Systems and Control Engineering (Proceedings of the Institution of Mechanical Engineers, Part I), Vol. 216, pp.301-8, 2002. (SCI, EI)

70) G. Song, V. Chaudhry and C. Batur. “Precision Tracking Control of Shape Memory Alloy Actuators Using Neural Networks and Sliding-Mode Based Robust Controller,” Smart Materials and Structures, Vol. 12, No. 2, pp.223-231, April, 2003. (SCI, EI)

71) G. Song, V. Chaudhry and C. Batur. “A Neural Network Inverse Model for a Shape Memory Alloy Wire Actuator,” Journal of Intelligent Material Systems and Structures, Vol.14, No. 6, pp.371-378, 2003. (SCI, EI)

72) G. Song and N. Ma “Control of Shape Memory Alloy Actuators using Pulse Width Pulse Frequency (PWPF) Modulation,” Journal of Intelligent Material Systems and Structures, Vol. 14, No. 1, pp.15-22, 2003. (SCI, EI)

73) Song, G. and B. Kotejoshyer. “Vibration Reduction of Flexible Structures During Slew Operations,” International Journal of Acoustics and Vibration, Vol. 7, No. 2, pp.105-109, 2002.

74) Song, G., P. Qiao and W. K. Binienda, “Active vibration damping of a composite beam using smart sensors and actuators,” ASCE Journal of Aerospace Engineering, Vol.15, No. 3, pp.97-103, July, 2002. (SCI, EI)

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