



Gang Wang

Assistant Professor

Department of Mechanical and
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Dr. Gang Wang is an Assistant Professor of Mechanical and Aerospace Engineering at the University of Alabama in Huntsville. His areas of research include: Solid Mechanics; Adaptive Structures; Rotorcraft and emerging Technologies. He applies his expertise of solid mechanics and dynamics to model and analysis of aerospace structures. He conducts prototype development and experimental validations in order to improve the performance of aerospace and mechanical systems. One example research application is emerging energy harvesting technology using advanced materials. The technical challenges he address are the characterization of candidate materials, multidisciplinary approaches, and test/evaluation. In the areas of structural dynamics, for example, he has worked on a spectral finite element method and its potential impact on fundamental understanding of wave propagation in structures. Other researches include structural health monitoring (SHM), shock and vibration control, rotorcraft, and smart sensor/actuator. He has authored and presented more than 20 technical papers in professional conferences and 18 archival journals related to smart structures and structural dynamics research. Dr. Wang is a senior member of the AIAA and a member of the ASME. Dr. Wang received the AIAA National Capital Section's prestigious Young Engineer/Scientist Award in 2006. He is a co-inventor of three US Patents entitled "Adaptive Energy Absorption System For A Vehicle System." (No. 7,822,522 and 7,921,973) and "Constant Force Control Methodology For Shock Absorption." (No. 8,311,705). Dr. Wang served as the Section Chairs of ASME Conference on Smart Materials Adaptive Structures & Intelligent Systems and he is a Technical Committee Member of **Adaptive Structures & Material Systems (ASMS)**, Aerospace Division, ASME.

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RELEVANT PUBLICATIONS:

1. G. Wang, 2013, "Analysis of Bimorph Piezoelectric Beam Energy Harvesters Using Timoshenko and Euler-Bernoulli Beam Theory," *Journal of Intelligent Material Systems and Structures*, Vol. 24. No. 2, pp. 226-239.
2. Q. H. Zuo, L.E. Deganis, and G. Wang, 2012, "Elastic Waves and Damage Quantification in Brittle Material with Evolving Damage," *Journal of Physics D: Applied Physics*, Vol. 45, No. 14, 145302.
3. G. Wang and N.M. Wereley, 2011, "Analysis of Fly Fishing Rod Casting Dynamics," *Journal of Shock and Vibration*, Vol. 18, Issue 6, pp: 839-855.
4. H.J Song, Y.T. Choi, G. Wang, and N.M. Wereley, 2009, "Energy Harvesting Utilizing Single Crystal PMN-PT Material and Application to a Self-power Accelerometer," *Journal of Mechanical Design, ASME Journal of Mechanical Design*, September, Vol. 131.
5. S. John, J. Sirohi, G. Wang, and N.M. Wereley, 2007 "Comparison of Piezoelectric, Magnetostrictive, and Electrostrictive Hybrid Hydraulic Actuators," *Journal of Intelligent Material Systems and Structures*, Vol. 18, Issue10, pp. 1035-1048.
6. G. Wang, N.M. Wereley, and D.C. Chang, 2005, "Analysis of Bending Vibration of Rectangular Plates Using Two Dimensional Plate Modes," *Journal of Aircraft*, Vol. 42, No. 2, March-April, pp. 542-550.
7. G. Wang and N.M. Wereley, 2004, "Free Vibration Analysis of Rotating Blades With Uniform Tapers," *AIAA Journal*, Vol. 42, No. 12, December, pp. 2429-2437.
8. G. Wang and N.M. Wereley, 2002, "Free In-plane Vibration of Rectangular Plates," *AIAA Journal*, Vol. 40, No. 5, pp. 953-959.