

Amy Hongxin Bian, Ph. D

Education

Ph. D. in Engineering Science & Mechanics, 2004
Pennsylvania State University, University Park, PA

M. Eng. in Engineering Mechanics/ Structural Dynamics, 1993
Tianjin University, Tianjin, China

B. Eng. in Engineering Mechanics, 1987
Tianjin University, Tianjin, China

Professional Appointments

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| University of Toledo, Assistant Lecturer, | 2019 - present |
| Tenneco Automotive, Staff Engineer | 2011 –2019 |
| MKP Structural Design Associates, CAE Engineer | 2008 – 2010 |
| Metis Design Corporation, Mechanical Engineer | 2005 –2006 |
| AAC International, Mechanical Engineer | 2004 –2005 |
| Penn State University, Teaching/Research Assistant | 1999 –2004 |
| Hebei University of Technology, Assistant Professor | 1993—1999 |
| Hebei University of Technology, Assistant Instructor | 1987—1990 |

Research Interests

Durability/Reliability

NVH and Structural Dynamics

Nondestructive Evaluation & Testing (NDE&T)

Selected Publications

Ma, Z, **Bian**, H., etc., ‘Functionally-Graded NPR (Negative Poisson’s Ratio) material for a blast-protective deflector’, Proceedings of the 2010 Ground Vehicle Systems Engineering and Technology Symposium (GVSETS).

Ma, Z, Liu, Y., **Bian**, H., etc., ‘A Reactive Deflector Technology for Vehicle and Crew Protection’, 2008 MSTV, November 18-20, 2008, Warren, Michigan, USA.

Sun, X., **Bian**, H., Witzel, E.A., and Kang, S, ‘3-D Finite Element Simulation for Ultrasonic Propagation in Tooth’, Journal of Dentistry, 36 (2008) 546 – 553.

Bian, H. and Rose, J., ‘Sparse Array Ultrasonic Guided Wave Tomography’, Materials Evaluation, Oct., 2005.

Bian, H., ‘An ultrasonic tomographic signature approach for material property gradient analysis in powder metals and natural wave guide structural health monitoring’, PhD thesis, Pennsylvania State University, University Park, PA, 2004.

Bian, H., Gao, H and Rose, J., ‘Sparse array tomography system for corrosion extent monitoring’, 16th world conference on NDT, 2004, Montreal, Canada.

Bian, H. and Rose, J., 'A Physical Interpretation of Elastic Guided Wave Reflection from Normal Ends of a Wave Guide', IEEE transaction on Ultrasonics, Ferroelectrics and frequency control, Vol. 51, No. 7, p839, July 2004.

Bian, H, Shi, Y. and Rose, J., 'Laser-based ultrasonic tomographic imaging of powder metal compacts', proceedings of QNDE, 2003, Green Bay, Wisconsin.

Bian, H., Cao, Q. and Chen, Y., 'The study of stochastic bifurcations for a Duffing oscillator under the narrow band excitation', Journal of nonlinear dynamics in Science and Technology, Vol.3, No. 1, 1996.

Wei, Z., Sun, D., **Bian**, H. and Zheng, Z., 'Application of Shape Memory Alloys in Vibration Control Devices', the 6 the national conference on vibration theory and applications, April, 1997, Wuhan, China.

Sun, D., Song, Z., Zheng, Z., Wei, Z. and **Bian**, H., 'Active and Passive Control of Intelligent Beam Vibrations', Modern Mechanics and Technology Development, Beijing, China, Aug. 1997, p12371240.