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Professional Preparation

University of Science and Technology of China	Mechanical and Mechanics Engineering	BS 1995
University of Science and Technology of China	Mechanical and Mechanics Engineering	MS 1998
Northwestern University	Mechanical Engineering	PhD 2002
Northwestern University	Mechanical Engineering	Post Doctorate 2003

Appointments

Assistant Professor	Department of Mechanical and Industrial Engineering, The University of Iowa	2003-present
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Honors

1. NSF summer institute fellowship, Northwestern University, 2006
2. USACM Travel Grant Award, USACM, 2006
3. ASME Certificate of Appreciation, ASME, 2005
4. Second Old Gold summer fellowship, University of Iowa, 2005
5. Best paper award of 116th annual meeting, The Iowa Academy of Science, 2004
6. Old Gold summer fellowship, University of Iowa, 2004
7. NSF summer institute fellowship, Northwestern University, 2004
8. NSF summer institute fellowship, Northwestern University, 2003

Professional Activities

1. Executive Committee Member of National Nanotechnology Initiative @ The University of Iowa, 2006-2009
2. Co-Organizer, the Ninth National Conference on Computational Mechanics, the symposium on numerical modeling and simulation of nano materials and devices, San Francisco, CA, July 2007
3. Committee, HPCNano06 workshop, IEEE/ACM SC06

4. Organizer, the Seventh World Congress on Computational Mechanics, the symposium on Computational Nanotechnology with the Enhancement of High-Performance Computing, Los Angeles, CA, July 2006
5. Co-Chair, International Workshop on Computational Nano-Science and Technology (CNST'05), Emory University, Atlanta, GA, USA, May 22-25, 2005
6. Co-Organizer, 2005 ASME International Design Engineering Technical Conferences, Twentieth Biennial Conference on Mechanical Vibration and Noise Symposium on Dynamic Analysis of Nano- and Micro-Electro-Mechanical Systems
7. Member of American Society of Mechanical Engineering
8. Member of International Association of Computational Mechanics
9. Member of U. S. Association of Computational Mechanics
10. Reviewer for National Science Foundation, AIAA Journal, American Chemical Society, ASME conferences, ASME International, Computer Methods in Applied Mechanics and Engineering, Computational Mechanics, ICCS conference, International Journal of Mathematics and Mathematical Sciences, International Journal of Damage Mechanics, International Journal for Numerical Methods in Engineering, International Journal for Multiscale Computational Engineering, The Journal Probabilistic Engineering Mechanics, Mechanics Based Design of Structures and Machines, Modelling and Simulation in Materials Science and Engineering, Nanotechnology, Optimization and Engineering, Physical Review B, and Tsinghua Science and Technology

Publications

1. Xiao, S. P., and Hou, W. Y., "Studies of nanotube-based resonant oscillators using a new multiscale method", *Physical Review B*, 2007, in press
2. Xiao, S. P., and Hou, W. Y., "Multiscale modeling and simulation of nanotube-based torsional oscillators", *Nanoscale Research Letter*, 2007, in press
3. Xiao, S. P., and Yang, W. X., "A temperature-related homogenization technique and its implementation in meshfree particle methods for nanoscale simulations", *International Journal for Numerical Methods in Engineering*, 2007, in press
4. Xiao, S. P., and Yang W. X., "A meshfree particle method with stress points and its applications at the nanoscale", *The International Journal of Computational Science and Engineering*, 2007, in press
5. Xiao, S. P., "A Lattice Boltzmann Method for Shock Wave Propagation in Solids", *Communications for Numerical Methods in Engineering*, Vol 23(1), 71-84, 2007
6. Rabczuk, T., Xiao, S. P., and Sauer, M., "Coupling of meshfree methods with finite elements: Basic concepts and test results", *Communications for Numerical Methods in Engineering*, Vol 22(10), 1031-1065, 2006
7. Xiao, S. P., and Hou, W. Y., "Fracture of vacancy-defected carbon nanotubes and their embedded composites", *Physical Review B*, Vol. 73, 115406, 2006
8. Xiao, S. P., Han, R., and Hou, W. Y., "Spin in Carbon Nanotube-based Oscillators", *International Journal of Nanoscience*, Vol. 5(1), 47-55, 2006
9. Xiao, S. P., and Yang, W. X., "Temperature-related Cauchy-Born rule for multiscale modeling of crystalline solids", *Computational Materials Science*, Vol. 37, 374-379, 2006

10. Xiao, S. P., "A non-oscillatory method for spallation studies", *International Journal for Numerical Methods in Engineering*, Vol. 66, 364-380, 2006
11. Xiao, S. P., Andersen, D. R., Han, R., and Hou, W. Y., "Studies of carbon nanotube-based oscillators using molecular dynamics", *International Journal of Computational and Theoretical Nanoscience*, Vol. 3, 143-147, 2006
12. Xiao, S. P., and Hou, W. Y., "Studies of size effects on carbon nanotubes' mechanical properties by using different potential functions", *Fullerenes, Nanotubes, and Carbon Nanostructures*, Vol. 14, 9-16, 2006
13. Xiao, S. P., and Yang, W. X., "A nanoscale meshfree particle method with the implementation of the quasicontinuum method", *International Journal of Computational Methods*, Vol. 2(3), 293-313, 2005
14. Xiao, S. P., and Belytschko, T., "Material stability analysis of particle methods", *Advances in Computational Mathematics*, Vol. 23, 171-190, 2005
15. Xiao, S. P., "A FE-FCT method with implicit function for the study of shock wave propagation in solids", *Wave Motion*, Vol. 40, 263-276, 2004
16. Xiao, S. P., and Belytschko, T., "A bridging domain method for coupling continuum with molecular dynamics", *Computer Methods for Applied Mechanics and Engineering*, Vol. 193, 1645-1669, 2004
17. Mielke, S. L., Troya, D., Zhang, S. L., Xiao, S. P., Car, R., Ruoff, R. S., Schatz, G. C., and Belytschko, T., "The role of vacancy defects and holes in the fracture of carbon nanotubes", *Chemical Physics Letter*, Vol. 390, 413-420, 2004
18. Rabczuk, T., Belytschko, T., and Xiao, S. P., "Stable particle methods based on Lagrangian kernels", *Computer Methods in Applied Mechanics and Engineering*, Vol. 193, 1053-1063, 2004
19. Belytschko, T., Xiao, S. P., and Chandu, P., "The topological optimization with an implicit function", *International Journal for Numerical Methods in Engineering*, Vol. 57, 1177-1196, 2003
20. Belytschko, T., and Xiao, S. P., "Coupling methods for continuum model with molecular model", *Journal of Multiscale Computational Engineering*, Vol. 1(1), 115-126, 2003
21. Belytschko, T., Xiao, S. P., Schatz, G. C., and Ruoff, R., "Atomistic simulations for nanotube fracture", *Physical Review B*, Vol. 65, 235430, 2002
22. Belytschko, T., and Xiao, S. P., "Stability analysis of particle methods with corrected derivatives", *Computers and Mathematics with Applications*, Vol. 43(3-5), 329-350, 2002
23. Belytschko, T., Guo, Y., Liu, W. K., and Xiao, S. P., "Unified stability analysis of meshless particle methods", *International Journal for Numerical Methods in Engineering*, Vol. 48(9), 1359-1400, 2000

Technical presentations

1. Keynote, "Multiscale modeling of nanoscale materials and devices", the International Conference on Computational and Experimental Engineering and Sciences, Miami FL, USA, Jan 2007
2. "Mechanics of vacancy-defected carbon nanotubes and their applications in composites and devices", the International Conference on Computational and Experimental Engineering and Sciences, Miami FL, USA, Jan 2007

3. "Introduction to Computational Multiscale Mechanics Laboratory", NextGen Inc., Los Angeles, CA, USA, July 2006 (invited)
4. Keynote, "The issues in computational nanotechnology and one possible solution", Seventh World Congress on Computational Mechanics, Los Angeles, CA, USA, July 2006 (invited)
5. "Mechanics of nanotubes and their embedded composites", Seventh World Congress on Computational Mechanics, Los Angeles, CA, USA, July 2006
6. "Nanoscale meshfree particle methods", Eighth U. S. National Congress on Computational Mechanics, Austin, TX, USA, July 2005
7. "Mechanics of carbon nanotubes and their reinforced nanocomposites", Eighth U. S. National Congress on Computational Mechanics, Austin, TX, USA, July 2005
8. Keynote, "Carbon nanotubes and their applications as nano-oscillators", Eighth U. S. National Congress on Computational Mechanics, Austin, TX, USA, July 2005 (invited)
9. "A non-oscillatory method for shock wave propagation and spallation studies", Eighth U. S. National Congress on Computational Mechanics, Austin, TX, USA, July 2005
10. Tutorial in The International Conference on Computer Science, "Computational Domains for Explorations in Nanoscience and Technology", Atlanta, GA, USA, May 2005 (invited)
11. "The Applications of Meshfree Particle Methods at the Nanoscale", The International Conference on Computer Science, Atlanta, GA, USA, May 2005
12. "Computational nanomechanics: multiscale modeling", Midwest Numerical Analysis Conference, Iowa City, IA, USA, May 2005
13. "A bridging domain multiscale method", ASME annual conference, Anaheim, CA, USA, November 2004
14. "Computational nano-mechanics: from molecular dynamics to continuum mechanics", Sixth World Congress on Computational Mechanics, Beijing, China, September 2004
15. "Computational nanomechanics: from molecular modeling to multiscale modeling", 116th Annual Meeting of the Iowa Academy of Science, The University of Northern Iowa, Cedar Falls, IA, USA, April 2004
16. "Coupling methods for molecular model and continuum model", Seventh U. S. National Congress on Computational Mechanics, Albuquerque, NM, USA, August 2003
17. "Stability analysis of particle method with corrected derivatives", Sixth U. S. National Congress on Computational Mechanics, Dearborn, MI, USA, August 2001