

Ju Li

Employment *University of Pennsylvania* Philadelphia, PA 19104
Associate Professor of Materials Science and Engineering (9/2007-present)

Ohio State University Columbus, OH 43210
Assistant Professor of Materials Science and Engineering (9/2002-9/2007)

Massachusetts Institute of Technology Cambridge, MA 02139
Research scientist (4/2002-9/2002), postdoctoral associate (9/2000-4/2002)
Departments of Nuclear Engineering and Materials Science and Engineering

Education *Massachusetts Institute of Technology* Cambridge, MA 02139
Department of Nuclear Engineering (1994-2000) Ph.D., Sept. 2000

GPA 5.0/5.0: 40 graduate-level courses at 8 MIT departments

University of Science and Technology of China Hefei, Anhui 230026, P.R.C.
Special Class for Gifted Young (1990-1994) B.S. in Physics, 1994

Awards TMS Robert Lansing Hardy Award (2009)

Technology Review TR35 award (2007)

National Academy of Engineering U.S. Frontiers of Engineering Symposium (Microsoft Research, Sept. 2007)

Fellow of the World Innovation Foundation (2007)

Materials Research Society (MRS) 2006 Outstanding Young Investigator Award

Ohio State University College of Engineering Lumley Research Award 2006.

Presidential Early Career Award for Scientists and Engineers (PECASE) 2005

Materials Research Society (MRS) Graduate Student Silver Medalist 1998.

MIT Nuclear Engineering Department Manson Benedict Fellowship.

Service Author of free molecular visualization software *AtomEye*:
<http://www.google.com/search?q=AtomEye>

Ab initio tight-binding analysis with quasiatomic orbitals (with Xiaofeng Qian):
<http://mt.seas.upenn.edu/Archive/QO>

Member of Editorial Board of *Modelling and Simulation in Materials Science and Engineering*, *Scientific Modeling and Simulation*, and *Nano Research*.

Representative Publications (100 peer-reviewed papers, h-index 25)

32. J. Feng, L. Qi, J. Y. Huang and J. Li, "Geometric and electronic structure of graphene bilayer edges," *Phys. Rev. B* **80** (2009) 016940.
31. J. Y. Huang, F. Ding, B. I. Yakobson, P. Lu, L. Qi and J. Li, "In situ observation of graphene sublimation and multi-layer edge reconstructions," *PNAS* **106** (2009) 10103-10108.
30. L. Kovarik, R.R. Unocic, J. Li, P. Sarosi, C. Shen, Y. Wang and M.J. Mills, "Microtwinning and other shearing mechanisms at intermediate temperatures in Ni-based superalloys," *Progress in Materials Science* **54** (2009) 839-873.
29. S. L. Zhang, J. Li, G. Lykotrafitis, G. Bao and S. Suresh, "Size-Dependent Endocytosis of Nanoparticles," *Adv. Mater.* **21** (2009) 419-424.
28. X-F. Qian, J. Li, L. Qi, C-Z. Wang, T-L. Chan, Y-X. Yao, K-M. Ho and S. Yip, "Quasiatomic orbitals for *ab initio* tight-binding analysis," *Phys. Rev. B* **78** (2008) 245112.
27. S. Suresh and J. Li, "Deformation of the ultra-strong," *Nature* **456** (2008) 716-717.
26. L. Qi, X-F. Qian and J. Li, "Near-neutrality of oxygen molecule adsorbed on Pt(111) surface," *Phys. Rev. Lett.* **101** (2008) 146101.
25. T. Zhu, J. Li, A. Samanta, A. Leach and K. Gall, "Temperature and Strain-Rate Dependence of Surface Dislocation Nucleation," *Phys. Rev. Lett.* **100** (2008) 025502. Cover article.
24. H. Verweij, M. C. Schillo and J. Li, "Fast Mass Transport through Carbon Nanotube Membranes," *Small* **3** (2007) 1996-2004. Concepts article.
23. Y.M. Wang, J. Li, A.V. Hamza and T.W. Barbee, Jr., "Ductile crystalline-amorphous nanolaminates," *PNAS* **104** (2007) 11155-11160.
22. J. Li, P. G. Kevrekidis, C. W. Gear and I. G. Kevrekidis, "Deciding the Nature of the Coarse Equation through Microscopic Simulations: The Baby-Bathwater Scheme," *SIAM Review* **49** (2007) 469-487.
21. J. Li, G. Lykotrafitis, M. Dao and S. Suresh, "Cytoskeletal Dynamics of Human Erythrocyte," *PNAS* **104** (2007) 4937-4942.
20. A. Gouldstone, N. Chollacoop, M. Dao, J. Li, A. Minor and Y.-L. Shen, "Indentation Across Size Scales and Disciplines: Recent Developments in Experimentation and Modeling," *Acta Mater.* **55** (2007) 4015-4039. Overview No. 142.
19. T. Zhu, J. Li, A. Samanta, H.G. Kim and S. Suresh, "Interfacial Plasticity Governs Strain Rate Sensitivity and Ductility in Nanostructured Metals," *PNAS* **104** (2007) 3031-3036. Cover article.
18. J. Li, "The Mechanics and Physics of Defect Nucleation," *MRS Bulletin* **32** (2007) 151-159.

17. J. Eapen, J. Li and S. Yip, "Mechanism of thermal transport in dilute nanocolloids," *Phys. Rev. Lett.* **98** (2007) 028302.
16. F. Shimizu, S. Ogata and J. Li, "Yield Point of Metallic Glass," *Acta Mater.* **54** (2006) 4293-4298.
15. X. Lin, J. Li, C. J. Först and S. Yip, "Multiple Self-Localized Electronic States in Trans-Polyacetylene," *PNAS* **103** (2006) 8943-8946.
14. X. Lin, J. Li and S. Yip, "Controlling Bending and Twisting of Conjugated Polymers via Solitons," *Phys. Rev. Lett.* **95** (2005) 198303.
13. J. Li, M. Dao, C. T. Lim and S. Suresh, "Spectrin-level analysis of shape evolution and large deformation elasticity of erythrocyte," *Biophys. J.* **88** (2005) 3707-3719.
12. T. Zhu, J. Li and S. Yip, "Atomistic configurations and energetics of crack extension in silicon," *Phys. Rev. Lett.* **93** (2004) 205504.
11. T. Zhu, J. Li and S. Yip, "Atomistic study of dislocation loop emission from a crack tip," *Phys. Rev. Lett.* **93** (2004) 025503.
10. J. Li, A.H.W. Ngan and P. Gumbsch, "Atomistic modeling of mechanical behavior," *Acta Mater.* (Golden Jubilee Issue) **51** (2003) 5711-42.
9. N.H. de Leeuw, Z.M. Du, J. Li, S. Yip and T. Zhu, "Computer modeling study of the effect of hydration on the stability of a silica nanotube," *Nano Letters* **3** (2003) 1347-52.
8. J. Li, "AtomEye: an efficient atomistic configuration viewer," *Modelling Simul. Mater. Sci. Eng.* **11** (2003) 173-7.
7. C.W. Gear, J. Li and I.G. Kevrekidis, "The gap-tooth method in particle simulations," *Physics Letters A* **316** (2003) 190-5.
6. S. Ogata, J. Li and S. Yip, "Ideal pure shear strength of aluminum and copper," *Science* **298** (2002) 807-11.
5. J. Li, K.J. Van Vliet, T. Zhu, S. Yip and S. Suresh, "Atomistic mechanism governing elastic limit and incipient plasticity in crystals," *Nature* **418** (2002) 307-10.
4. W. Cai, V.V. Bulatov, J.-P. Chang, J. Li and S. Yip, "Anisotropic elastic interactions of a periodic dislocation array," *Phys. Rev. Lett.* **86** (2001) 5727-30.
3. J. Li, L.J. Porter and S. Yip, "Atomistic modeling of finite-temperature properties of crystalline β -SiC: II. thermal conductivity and effects of point defects," *J. Nucl. Mater.* **255** (1998) 139-52.
2. J. Li, D.Y. Liao and S. Yip, "Coupling continuum to molecular-dynamics simulation: reflecting particle method and the field estimator," *Phys. Rev. E* **57** (1998) 7259-67.
1. J.H. Wang, J. Li, S. Yip, S. Phillpot and D. Wolf, "Mechanical instabilities of homogeneous crystals," *Phys. Rev. B* **52** (1995) 12627-35.