Curriculum Vitae: Yashashree Kulkarni

POSITION AND TITLE

Assistant Professor
Department of Mechanical Engineering, University of Houston, Houston, TX

EDUCATION

2002 – 2006
Doctor of Philosophy, Applied Mechanics, June 2007
California Institute of Technology

2001 – 2002
Master of Science, Applied Mechanics, June 2002
California Institute of Technology

1997 – 2001
Bachelor of Technology, Civil Engineering, August 2001
Indian Institute of Technology Bombay, India

PROFESSIONAL EXPERIENCE

2009 – Present
Assistant Professor
Department of Mechanical Engineering, University of Houston, Houston, TX

2007 – 2009
Postdoctoral Researcher
Department of Structural Engineering, University of California San Diego, La Jolla, CA

AWARDS AND HONORS

- DARPA Young Faculty Award (2010).
- Charles D. Babcock Teaching Assistant Award, California Institute of Technology (2005).
- Robert T. and Pearl Knapp fellowship, California Institute of Technology (2001–2002).
- Institute Silver Medal, I.I.T. Bombay (2001).

PUBLICATIONS

- T. Sinha, and Y. Kulkarni, Anomalous deformation twinning in fcc metals at high temperatures, *J. Applied Physics*, 109 (2011), p. 114315.
- Y. Kulkarni, Coarse-graining of atomistic description at finite temperature using formal asymptotics, *Int. J. for Multiscale Computational Engineering*, In Press (**Invited**).
- Y. Kulkarni, and R.J. Asaro, Are some nano-twinned fcc metals optimal for strength, ductility, and grain stability, *Acta Materialia*, 57 (2009), p. 4835.
- Y. Kulkarni, R.J. Asaro, and D. Farkas, Are nano-twinned structures in fcc metals optimal for strength, ductility, and grain stability, *Scripta Materialia*, 60 (2009), p. 532.

- R.J. Asaro, D. Farkas, and Y. Kulkarni, The Soret effect in diffusion in crystals, *Acta Materialia*, 56 (2008), p. 1243.
- R.J. Asaro, and Y. Kulkarni, Are rate sensitivity and strength effected by cross-slip in nanotwinned fcc metals, *Scripta Materialia*, 58 (2008), p. 389.
- Y. Kulkarni, J. Knap, and M. Ortiz, A variational approach to coarse-graining of equilibrium and non-equilibrium atomistic description at finite temperature, *Journal of the Mechanics and Physics of Solids*, 56 (2008), p. 1417.

RESEARCH GRANTS

- DARPA Young Faculty Award, $ 226,358 (2010–2012), PI: Kulkarni, 100%
- NSF, $ 349,867 (2010–2013), PI: Kulkarni, 60%
- GEAR, University of Houston, $ 25,000 (2010–2011), PI: Kulkarni, 100%
- New Faculty Award, University of Houston, $ 6,000 (2010), PI: Kulkarni, 100%
- TcSUH (Texas Center for Superconductivity University of Houston), $ 15,000 (2009 – 2010), PI: Kulkarni, 100%

SELECTED PRESENTATIONS

- *Anomalous response of twin boundaries in fcc metals at high temperatures*, ASME Applied Mechanics and Materials Conference (McMat) (Chicago, IL, May 2011).
- (**Invited**)*Computational modeling of deformation mechanisms in nanostructured metals*, 55^{th} Congress of Indian Society of Theoretical and Applied Mechanics (Hamirpur, India, December 2010).
- *Atomistic modeling of strength and stability in nanotwinned fcc metals*, ASME International Mechanical Engineering Congress and Exposition (Vancouver, Canada, November 2010).
- (**Invited**)*Computational modeling of deformation mechanisms in nanostructured metals*, Iowa State University (October 2010).
- *Atomistic modeling of strength and stability in nanotwinned fcc metals*, 16^{th} US National Congress of Theoretical and Applied Mechanics (University Park, PA, July 2010).
- *An atomistic study of deformation mechanisms in nano-twinned structures*, 10th US National Congress on Computational Mechanics (Columbus, OH, July 2009).
- *Atomistic simulations of deformation mechanisms in nano-structured metals*, Society of Engineering Science Technical Meeting (Champaign, IL, September 2008).
- (**Invited**)*A seamless multi-scale approach to modeling of material behavior at finite temperature*, VirginiaTech (Blacksburg, VA, April 2008).
- (**Invited**)*Multiscale modeling: A computational paradigm in nanotechnology*, Indian Institute of Technology Roorkee (Roorkee, India, December 2006).

- (**Invited**)*Equilibrium and non-equilibrium finite temperature quasicontinuum method*, Lawrence Livermore National Laboratory (Livermore, September 2005).
- (**Invited**)*Coarse-graining of atomistic description at finite temperature*, Los Alamos National Laboratory (Los Alamos, July 2005).

TEACHING EXPERIENCE

- Developed a new graduate course: *Computational modeling of materials* (Fall 2009).
- Taught required graduate and undergraduate courses:
  Theory of Elasticity (graduate, Fall 2010), *Statics* (undergraduate, Spring 2011).

PROFESSIONAL EXPERIENCE

- Reviewer for Physical Review Letters, Journal of Applied Mechanics, Journal of Materials Research, National Science Foundation.
- Co-organized symposiums in following conferences –
  - 10th US National Congress on Computational Mechanics (Columbus, OH, July 2009)
  - 11th US National Congress on Computational Mechanics (Minneapolis, July 2011)
  - Society of Engineering Science Annual Technical Meeting (Evanston, IL, October 2011)