

## AMIT MISRA

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## Education

*Undergraduate:* IT-BHU, India Metallurgical Engineering, B.S. 1989

*Graduate:* University of Michigan Materials Science & Engg., M.S. 1991

Ann Arbor, MI Materials Science & Engg., Ph.D. 1994

## Appointments

Technical staff member, Los Alamos National Lab, Aug 1998 - present

Postdoctoral research associate, Los Alamos National Lab, Nov 1996 - Aug 1998

Research scientist, Thapar Corporate R&D Center, Patiala, India, Dec 1994 - Jan 1996

Graduate student research assistant, University of Michigan, Ann Arbor, MI Sep 1989 – Oct 1994

## Publications

1. *Controlled nanoporous Pt morphologies by varying deposition parameters*, A. Antoniou, D. Bhattacharrya, J. K. Baldwin, P. Goodwin, M. Nastasi, S. T. Picraux, A. Misra, Applied Physics Letters, 95, 073116 (2009).
2. *Synthesis and Mechanical Properties of Nanoporous Pt-Ni Alloys*, Hongqi Li, Amit Misra, Jon K. Baldwin, Samuel T. Picraux, Applied Physics Letters, 95 (2009) 201902.
3. *Mechanical Behavior of Metallic Nanolaminates*, A. Misra, chapter in the book NANOSTRUCTURE CONTROL OF MATERIALS edited by A J Hill and R H J Hannink, Woodhead Publishing Co., UK, (2006) Ch. 7, pp. 146-176.
4. *Bimetallic Layered Nanocomposites: Synthesis, Structure and Mechanical Properties*, A. Misra and R.G. Hoagland, chapter in the book THE DEKKER ENCYCLOPEDIA OF NANOSCIENCE AND NANOTECHNOLOGY, edited by James A. Schwarz, Cristian Contescu, and Karol Putyera, Taylor & Francis, Inc., (2005) 10.1081/E-ENN-120013790.
5. *Intrinsic Residual Stress Evolution in Thin Films During Energetic Particle Bombardment*, Misra and M. Nastasi, chapter in the book ENGINEERING THIN FILMS WITH ION BEAMS, edited by Émile J. Knystautas; Taylor & Francis, CRC press, chapter 7, (2005) pp. 325-392.
6. *High-strength sputter-deposited Cu foils with preferred orientation of nanoscale growth twins*, X. Zhang, A. Misra, *et al.*, Applied Physics Letters, 88, 173116-1-3 (2006).
7. *Fatigue properties of nanoscale Cu/Nb multilayers*, Y.C. Wang, A. Misra and R.G. Hoagland, Scripta Materialia, 54, 1593-98 (2006).
8. Tunable magnetic anisotropy of ultrathin Co layers, S. Park, X. Zhang, A. Misra, J.D. Thompson, M.R. Fitzsimmons, C.M. Falco, Applied Physics Letters, 86, (2005) 042504.
9. *Formation of Nanoporous Noble Metal Thin Films by Electrochemical Dealloying of  $Pt_xSi_{1-x}$*  J.C. Thorp, K. Sieradzki, L. Tang, P.A. Crozier, A. Misra, M. Nastasi, D. Mitlin, S.T. Picraux, Applied Physics Letters, 88, 33110-1-3, (2006).
10. *Depth profile of uncompensated spins in an exchange bias system* S. Roy, M.R. Fitzsimmons, A. Misra, S.K. Sinha, I.K. Schuller, *et al.*, Physical Review Letters, 95, (2005), 047201/1-4.

**Collaborators:** (last 48 months): J.P. Hirth (Emeritus); T. Ungar (Eotvos University, Hungary); F. Spaepen (Harvard University); I.M. Robertson (Illinois); J.D. Embury (McMaster University); J.R. Weertman (Northwestern University); P.M. Anderson (Ohio State University); A.K. Mukherjee (UC-Davis); H.M. Zbib (Washington State University).

**Graduate Advisor:** R. Gibala, University of Michigan

**Thesis Advisor and Postgraduate-Scholar Sponsor:** A. Antoniou (now at Georgia Institute of Technology); X. Zhang\*, (now Asst. Prof. at Texas A&M University); D. Mitlin\*, (now Asst. Prof. at University of Alberta, Canada); T. Hoehbauer\*, (now at APJet, Santa Fe, NM). Y.C. Wang\*, (now Asst. Prof., National Cheng Kung University, Taiwan); N.A. Mara\* (now TSM); D. Bhattacharyya, current; (\**recipient of LANL Director's post-doctoral fellowship*). GRA's: K. Hattar (Illinois); E. Sperling (Ohio State); E. Vanderson (Carnegie Mellon); O. Anderoglu (Texas A&M).

### **Synergistic Activities**

Symposium Chair, Materials Research Society (MRS) Spring Meeting 2004, San Francisco, symposium titled: *Nanoscale Materials and Modeling: Relations between Processing, Microstructure, and Mechanical Properties*.

Symposium Chair, Materials Research Society (MRS) Spring Meeting 2006, San Francisco, symposium titled: *Mechanics of Nanoscale Materials and Devices*.

Symposium Chair, Materials Research Society (MRS) Fall Meeting 2006, San Francisco, symposium titled: *Processing-Structure-Mechanical Property Relations in Composite Materials*.

Symposium Chair, The Minerals, Metals, Materials Society (TMS) Annual Meeting March 2003, San Diego, CA, symposium titled: *Terence E. Mitchell Symposium on the Magic of Materials*.

Elected vice-chair (2005-'06), chair (2007-'08), Nanomechanical Material Behavior Committee, TMS.

2008 LANL Fellows' Prize for outstanding research "for his longstanding research contributions to the understanding of deformation in materials, and particularly for his recent accomplishments in nanomechanics". Only 2 awards given each year lab-wide.

Elected scientific member, Bohmische Physical Society, 1999.

Listed in the "Top 50 most published authors at LANL" in the last ten years based on peer-reviewed publications, citations and patents).

Los Alamos Achievement Award, 1999.

Primary guest editor (with J.D. Embury and H. Kung), Scripta Materialia Viewpoint Set on *Deformation and Stability of Nanoscale Metallic Multilayers*, vol. 50, No. 6, March 2004.

Primary guest editor (with M. Nastasi, H. Kung, S. Maloy and R. Schwarz), proceedings of the *Terence E. Mitchell Symposium on the Magic of Materials*, Metallurgical and Materials Transactions A, TMS, Warrendale, PA, Aug'04.

Editor (with P.M. Anderson, T.J. Foecke, R.E. Rudd), Materials Research Society symposium proceedings, vol. 821 (2004).

Editor (with H. Huang), Materials Research Society symposium proceedings, vol.924E (2006).

US patent awarded #7,078,108: *Preparation of High-strength Nanometer-scale Twinned Coating and Foil*, X. Zhang, A. Misra, M. Nastasi and R.G. Hoagland, issued July 2006.