

# Li Sun

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## Education

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- **Ph.D.** March 2002 Materials Science and Engineering, Johns Hopkins University
- **M.S.** 1999 Materials Science and Engineering, Johns Hopkins University
- **B.S.** 1993 Physics, Nanjing University, China

## Professional Experience

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- 2009-present: Associate Professor of Mechanical and Materials Engineering  
Department of Mechanical Engineering, University of Houston
- 2003 – 2009 : Bill D. Cook endowed Assistant Professor of Mechanical and Materials  
Engineering Department of Mechanical Engineering, University of Houston
- 2002- 2003: NSF Postdoctoral Research Fellow  
Materials Research Science and Engineering Center, Johns Hopkins University

## Research Interests

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Nanomaterials fabrication and manipulation; multifunctional polymer composites, Spintronics; Ferroelectric materials, Application of nanostructure materials in sensing and biomedical devices.

## Research Accomplishments

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Published 63 papers on SCI cited journals, over 850 total citations  
Over 40 oral conference presentations, colloquia and seminars

## Professional Affiliations

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Materials Research Society  
American Chemical Society  
American Physical Society

## Honors and Awards

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Bill D. Cook Faculty Scholars Endowment (2003-2008)  
NSF 4th US-Japan exchange program for young researches in nanotechnology (2007)  
NSF Fellowship for summer institute at Northwestern University (2004,2006, 2009)

NSF Materials Science and Engineering Center (MRSEC) postdoctoral fellowship (2002-2003)

### Publication in Last Five Years

1. Y. F. Liu, J. W. Cai, and L. Sun, "Large enhancement of anisotropic magneto-resistance and thermal stability in Ta/NiFe/Ta trilayers with interfacial Pt addition" *Appl. Phys. Lett.* 96, 092509 (2010)
2. J. W. Hang, J. C. Jiang, M. Y. Lu, L. Sun, E. I. Meletis, and Y. W. Hao, "A facile route to the synthesis of hollow nanoparticles", *Nano Lett.* 9, 4297(2009)
3. X. P. Qiu, Z. Shi, S. M. Zhou, J. Du, X. J. Bai, R. Chantrell, and L. Sun "Asymmetric recovery effect of exchange bias in polycrystalline NiFe/FeMn bilayers", *J. Appl. Phys.*, 106, 063903(2009)
4. Z. Xu, S. M. Zhou, J. J. Ge, J. Du, and L. Sun, "Magnetization reversal mechanism of perpendicularly exchange-coupled composite L1(0)-FePt/CoCrPt bilayers" *J. Appl. Phys.*, 105,123903 (2009)
5. K. Keshoju, and L. Sun, "Mechanical characterization of magnetic nanowire - polydimethylsiloxane composites", *J. Appl. Phys.*, 105, 023515(2009) **Selected for the February 9, 2009 issue of *Virtual Journal of Nanoscale Science & Technology***
6. N. H. Hu, X. P. Qiu, Z. Shi, S. M. Zhou, X. J. Bai, J. Du, and L. Sun, "Exchange bias in NiFe/granular-FeMn-MgO bilayers", *Appl. Phys. Lett.* 91, 122503 (2008)
7. X. P. Qiu, D. Z. Yang, S. M. Zhou, R. Chantrell, K. O'Grady, U. Nowak, J. Du, X. J. Bai and L. Sun "Rotation of the pinning direction in exchange bias training effect in polycrystalline NiFe/FeMn bilayers", *Phys. Rev. Lett.* 101, 147207(2008)
8. L. Sun, Y. Yu, G. B. Song, and J. Gou, "Numerical Analysis of Acoustic Wave Propagation in Layered Carbon Nanofiber Reinforced Polymer Composites", *J. Appl. Phys.* 104, 043522 (2008). **Selected for the September 8, 2008 issue of *Virtual Journal of Nanoscale Science & Technology*.**
9. L. Sun and H. Xing, "Angular Dependence of Longitudinal and Perpendicular Exchange Bias in FeMn/(FeNi/FeMn)<sub>n</sub> Multilayers", *J. Appl. Phys.* 104, 043904 (2008).
10. L. Sun, K. Keshoju, and H. Xing. "Magnetic Field Mediated Nanowire Alignment in Liquids for Nanocomposite Synthesis", *Nanotechnology* 19, 405603 (2008)
11. H. Xing, L. Sun, G. B. Song, J. Gou, and Y. W. Hao "Surface coating of carbon nanofibers/nanotubes by electrodeposition for multifunctionalization", *Nanotechnology*, **19**, 025704(2008).
12. K. Keshoju, H. Xing, and L. Sun, "Magnetic field driven nanowire rotation in suspension", *Appl. Phys. Lett.* 91, 123114 (2007). **Selected for the October 1, 2007 issue of *Virtual Journal of Nanoscale Science & Technology*.**
13. K. Keshoju, X. Gu, A. T. Kumar, and L. Sun, "Magnetic nanostructures fabricated by electrochemical synthesis", *Solid State Phenomena* 121, 839(2007).
14. H. Xing, K. Keshoju, S. M. Zhou, and L. Sun, "Field cooling induced perpendicular exchange bias in FeMn/(FeNi/FeMn)<sub>n</sub> multilayers", *J. Appl. Phys.* 101, 09E509(2007).
15. J. Du, D. Z. Yang, X. J. Bai, X. S. Wu, A. Hu, S. M. Zhou, and L. Sun, "Angular dependence of positive exchange biasing in GdFe/FeMn bilayers", *J. Appl. Phys.* **99**, 08C103 (2006).
16. T. R. Gao, S. P. Hao, S. M. Zhou, and L. Sun, "Evolution of magnetization reversal mechanism in Fe-Cr alloy films", *J. Appl. Phys.* 100, 073909(2006).
17. S. P. Hao, Y. X. Sui, R. Shan, L. Sun and S. M. Zhou, "Exchange biasing in as-prepared Co/FeMn bilayers and magnetic properties of ultrathin single layer films", *Thin Solid Films* 485, 212(2005).
18. S. M. Zhou and L. Sun, "Temperature dependence of interlayer coupling and magnetization in amorphous-FeNiB/Ru multilayers" *J. Magn. Magn. Mater* 292, 65 (2005).
19. S. M. Zhou, S. J. Yuan, and L. Sun, "Intrinsic perpendicular anisotropy and exchange biasing in CoO/permalloy multilayers.", *J. Magn. Magn. Mater* 286, 211(2005).

20. R. Shan, W. W. Lin, L. F. Yin, C. S. Tian, H. Sang, L. Sun, and S. M. Zhou, "Coercivity and magnetization reversal mechanism in ferromagnet/antiferromagnet bilayers: Correlation with microstructure of ferromagnetic layers", *Phys. Rev. B* 71, 064402 (2005).
21. Y. X. Zhou, L. Sun, X. Chen, H. Fang, P. T. Putman, and K. Salama, "The manufacturing of an electroplated Ni layer on textured Cu substrate for Cu-based HTS coated conductors", *Superconduc. Sci. Tech.* 18, 107 (2005).
22. R. Shan, W. W. Lin, L. F. Yin, C. S. Tian, H. Sang, L. Sun, and S. M. Zhou, "Exchange biasing and coercivity enhancement in CoCr/FeMn bilayers with granular ferromagnet", *J. Magn. Magn. Mater* 286, 253 (2005).
23. L. Sun, P. C. Searson, and C. L. Chien, "Asymmetric hysteresis in exchange-biased multilayers with out-of-plane applied fields", *Phys. Rev. B* 71, 012417 (2005).
24. Invited Review Article L. Sun, Y. W. Hao, C. L. Chien, and P. C. Searson, "Tuning properties of ferromagnetic nanowires", *IBM J. Res.*, 49, 79(2005).

## Services

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- *Proposal Reviewing*  
Department of Energy - Office of Basic Energy Sciences, 2005  
Kentucky Science and Engineering Foundation 2005, 2006  
National Science Foundation- CMMI nanomanufacturing, 2007, 2008  
National Science Foundation- IIP SBIR/STTR, 2007, 2010  
Israel Science Foundation, 2008  
American Chemical Society- Petroleum Research Fund, 2008  
Grant Agency of the Academy of Sciences of the Czech Republic, 2008
- *Reviewer for Scientific Journals*  
Nanotechnology, the Journal of Physical Chemistry, Journal of Solid State Chemistry, Materials Chemistry and Physics, Smart Materials and Structures, Thin Solid Films, Journal of Physics D: Applied Physics, Surface and Coatings Technology, Journal of Physics: Condensed Matter, Semiconductor Science and Technology.

Reviewer for MRS annual meeting; APS Magnetism and Magnetic Materials Conference.