Tianhong Cui

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EDUCATION :

Ph.D. 1995	Mechanical Engineering, Chinese Academy of Sciences, China
B.S. 1991	Mechanical Engineering, Nanjing University of Aeronautics & Astronautics, China

PROFESSIONAL EXPERIENCE :

December 2003 – present	Nelson Associate Professor Department of Mechanical Engineering University of Minnesota, Minneapolis, MN 55455
June 1999 – November 2003	Assistant Professor Electrical Engineering/Institute for Micromanufacturing Louisiana Tech University
November 1998 – June 1999	Research Fellow Awarded by STA National Laboratory of Metrology in Japan
October 1997 – October 1998	Postdoctoral Research Associate Department of Electrical Engineering University of Minnesota, Minneapolis, MN 55455
October 1995 – October 1997	Postdoctoral Research Fellow Tsinghua University (the best university in China)

AWARDS & HONORS :

(1) Richard and Barbara Nelson Chair Professorship, University of Minnesota, 2003
(2) Research Foundation Award, Louisiana Tech University, 2002 and 2003
(3) Senior Research Fellowship awarded by STA for excellent oversea researchers, Japan, 1998
(4) NEDO Research Fellowship (the highest fellowship for oversea researchers) awarded by Japanese government for large frontier R & D projects, Japan, 1997
(5) President Award of Chinese Academy of Sciences in 1994 (0.5% of all graduate students)

SYNERGISTIC ACTIVITIES

(1) NSF Proposal Review Panelist for “Sensor and Sensor Network” program, 2004
(2) Associate Editor, special issue of the ASME Journal of Biomechanical Engineering, focusing on design of medical devices, 2005.
(3) Editorial Reviewer: Journal of Micromechanics and Microengineering, Sensors and Actuators, Journal of Applied Physics, Journal of Physical Chemistry, Nanotechnology, Macromolecular Rapid Communications, Advanced Materials, etc.
(4) Session Chair, “BioMEMS”, Design of Medical Devices Conference, Minneapolis, 2004 and 2005.
(5) Course Director, “Polymer MEMS”, ASME 5th Annual MEMS Technology Seminar, Minneapolis, April 17-20, 2005

FIVE RELATED PUBLICATIONS :
(These papers related to this proposal)

(1) Tianhong Cui and Guirong Liang, "Dual-Gate Pentacene Field-Effect Transistors Based on a Nano-Assembled SiO2 nanoparticle Thin Film as the Gate Dielectric Layer", *Applied Physics Letters*, Vol. 86, No. 3, 2005: 64102.
(2) Tianhong Cui, Yi Liu, and Mo Zhu, ""Field-Effect Transistors with Layer-by-Layer Nano-Assembled Nanoparticle Thin Films as Channel and Gate Dielectric", *Applied Physics Letters*, Vol. 87, No. 18, 2005: 183105.
(3) Tianhong Cui, Feng Hua, and Yuri Lvov, "Field Effect Transistor Fabricated by Layer-by-Layer Nanoassembly", *IEEE Transactions on Electron Devices*, Vol. 51, No. 3, 2004: 506-509.
(4) Feng Hua, Tianhong Cui, Yuri Lvov, "Ultrathin Cantilevers Based on Polymer-Ceramic Nanocomposites Assembled by Layer-by-Layer Technique", *Nano Letters*, Vol. 4, No. 5, 2004: 823-825.
(5) Feng Hua, Jingshi Shi, Yuri Lvov, and Tianhong Cui, "Patterning of Layer-by-layer Self-assembled Multiple Types of Nanoparticle Thin Films by Lithographic Techniques", *Nano Letters*, Vol. 2, No. 11, 2002: 1119-1222.

FIVE OTHER SIGNIFICANT PUBLICATIONS :
(5 out of more than 100 publications)

(1) Tianhong Cui, Feng Hua, and Yuri Lvov, "Lithographic Approach to Pattern Multiple Nanoparticle Thin Film Prepared by Layer-by-Layer Self-Assembly for Microsystems", *Sensors and Actuators A: Physical*, Vol. 114, No. 2-3, 2004: 501-504.
(2) Mengyan Li, Kishore K. Kondabatni, Tianhong Cui, and Michael J. McShane, "Fabrication of Gelatin-Patterned Glass Substrates with Layer-by-Layer Nano-Assembly and Lift-off (LbL-LO) Technology", *IEEE Transactions on Nanotechnology*, Vol. 3, No. 1, 2004: 115-123.
(3) Feng Hua, Yuri Lvov, and Tianhong Cui, "A Lithographic Approach of Spatial Separation for Multiple Types of Layer-by-Layer Self-Assembled Nanoparticles", *Thin Solid Films*, Vol. 449, No. 1-2, 2004: 222-225.
(4) F. Hua, J. Shi, Y. Lvov, and T.Cui, "Fabrication and Characterization of MOS-Capacitors Based on Layer-by-Layer Self-Assembly Thin Films, *Nanotechnology*, Vol. 14, No. 4, 2003: 453-457.
(5) Jingshi Shi and Tianhong Cui, "Fabrication of Indium Resistors by Layer-by-Layer Nano-Assembly and Microlithography Techniques", *Solid State Electronics*, Vol. 47, No. 11, 2003: *2085-2088*.

SELECTED LIST OF PATENTS / INVENTION DISCLOSURES :

(1) "Lithography-based Approaches to Pattern Layer-by-layer Nano-assembled Thin Films for Microelectronics/MEMS", Application Serial No. 10/387,769 (filed on March 13th, 2003).
(2) "Polymer Based Tunneling Sensor", Application Serial No. 10/648,927 (filed on August 27th, 2003).

LIST OF RECENT COLLABORATORS

Prof. Mrinal Bhattacharya (BAE, University of Minnesota), Prof. Kim Stelson (ME, University of Minnesota) , Prof. Rajesh Rajamani (ME, Univ. of Minnesota), Prof. Yuri Lvov (IFM, Louisiana Tech University), Prof. Mike McShane (IFM, Louisiana Tech University), Prof. Kody Varahramyan (IFM, Louisiana Tech University), Prof. Efstathios I. Meletis (ME, Louisiana State University)

GRADUATE STUDENTS ADVISED

Ph. D. students: Yuxin Liu, Guirong Liang, Yongjun Zhao, Jing Wang, Feng Hua, Mengyan Li, Jingshi Shi, Mo Zhu, and Malcolm Prouty
Mater students: Rajashekar Sheela, Yuming Ai, Rajashekar Sheela, Adam G. Reppond, Yu Liang, Mosiur Rahman, Changyuan Chen, Md Mazhar Ul Hoque