

Xiaoding Wei

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EDUCATION

- **Columbia University, Fu Foundation School of Engineering and Applied Science** New York, NY
 - Ph.D. in Mechanical Engineering Expected May 2009
 - M.S. in Mechanical Engineering, GPA 3.93/4.0 May 2004
- **University of Science and Technology of China** Hefei, China
 - B.S. in Modern Mechanics, GPA 3.3/4.0 July 2003

RESEARCH EXPERIENCE

- **Mechanical properties of graphene** (collaborating with Professor Hone) 2007 – present
 - Manufacture freestanding graphene films
 - Nano-indentation tests on graphene films with AFM experimentally confirmed the excellent mechanical properties of graphene—the strongest material in the world (work published on *Science July 2008*)
 - Build up numerical models (such as finite element simulation, molecular dynamics simulation and ab initio simulation) for further studies on graphene including mechanical properties, etc.
- **Solid Mechanics Laboratory at Columbia University**, research assistant 2003 – present
 - Manufacture nano-crystalline and nano-composite thin films with physical/chemical vapor deposition and electro-deposition techniques
 - Manufacture metallic porous thin films with electro-chemical dealloying technique
 - Develop a “plane-strain bulge test” setup automatically controlled by a computer with a LabView program for mechanical tests especially for nanometer-scale thin films
 - Study the mechanical properties of thin films as well as their deformation mechanisms in order to develop manufacture techniques to improve materials’ performance especially in small scale
- **University of Science and Technology of China** 2001 – 2003
 - Develop a non-contact strain measurement system using digital image correlation method and white-light speckle technique

PROFESSIONAL ACTIVITIES AND SERVICES

- Member, **Material Research Society** (MRS)
- Peer reviewer of *Journal of Zhejiang University*
- Peer reviewer of *Journal of Experimental Mechanics*
- Research mentor in “Research Experience for Undergraduates Summer Program”, 2007 & 2008
- Teaching assistant, Mechanical Engineering, Columbia University Jan. 2005 – Dec. 2006

TECHNICAL SKILLS

- **Clean Room:** PVD (thermal evaporation, E-beam deposition, sputtering); CVD (PECVD, LPCVD); Electro-deposition; Electro-chemical dealloying; Photo-Lithography; X-ray Diffraction
- **Lab Equipments:** Scanning Electron Microscope, Transmission Electron Microscope, Electron Backscatter Diffraction
- **Programming Languages:** C/C++, MATLAB, MATHEMATICA, PYTHON, FORTRAN
- **Commerical Software:** ABAQUS, VASP, FEMLAB, SolidWorks
- **Operating Systems:** Linux, Windows, Macintosh

PUBLICATIONS

- Changgu Lee, **Xiaoding Wei**, Jefferey W. Kysar, James Hone, “Measuremnt of the Elastic Properties and Intrinsic Strength of Monolayer Graphene”, *Science* 321, 385 (2008).
- **Xiaoding Wei**, Dongyun Lee, Sanghoon Shim, Xi Chen and Jeffrey W. Kysar , “Plane-strain bulge test for nanocrystalline copper thin films”, *Scripta Materialia* 57 (2007) 541-544.
- Dongyun Lee, **Xiaoding Wei**, Xi Chen, Manhong Zhao, Seong. C. Jun, James Hone, Erik G. Herbert, Warren C. Oliver, Jeffrey W. Kysar, “Microfabrication and mechanical properties of nanoporous gold at the nanoscale”, *Scripta Materialia* 56 (2007) 437-440
- Dongyun Lee, **Xiaoding Wei**, Manhong Zhao, Xi Chen, Seong. C. Jun, James Hone, Jeffrey W. Kysar, “Plastic deformation in nanoscale gold single crystals and open-celled nanoporous gold”, *Modelling and Simulation in Materials Science and Engineering* 15 (2007) S181-S192.
- Gan YX, Wei CS, Lam M, **Wei XD**, Lee DY, Kysar JW, Chen X, “Deformation and fracture behavior of electrocodeposited alumina nanoparticle/copper composite films”, *Journal of Materials Science* 42 (2007) 5256-5263
- Dongyun Lee, Manhong Zhao, **Xiaoding Wei**, Xi Chen, Seong. C. Jun, James Hone, Erik G. Herbert, Warren C. Oliver, Jeffrey W. Kysar, “Observation of plastic deformation in freestanding single crystal Au nanowires”, *Applied Physics Letters* 89 (2006).