PAUL M. VOYLES

Assistant Professor
Department of Materials Science and Engineering
University of Wisconsin, Madison
1509 University Ave
Madison, WI 53706-1595

voyles@engr.wisc.edu
Voice: (608) 265-6740
Fax: (608) 262-8353

APPOINTMENTS

University of Wisconsin, Madison Asst. Prof., Dept. of Mat. Sci. and Eng. 11/02–

Bell Laboratories, Lucent Technologies Post-doctoral Member of Technical Staff 11/00–11/02
Dr. David A. Muller, supervisor.

University Of Illinois at Urbana-Champaign, Research Assistant in Physics 5/96–11/00
Dr. J. Murray Gibson and Dr. Michael M. J. Treacy, advisors.

University Of Illinois at Urbana Champaign, Teaching Assistant in Physics 8/96–5/96
Dr. Michael Stone and Dr. James Wolfe, supervisors.

EDUCATION

University of Illinois, Urbana-Champaign, IL
Ph.D. in Physics Jan. 2001; M.S. in Physics May 1999
Thesis: "Fluctuation Electron Microscopy of Medium-Range Order in Amorphous Silicon Thin Films"

Oberlin College, Oberlin, OH
B.A. in Physics with High Honors, May 1996
Thesis: "$CuInS_2$ Thin Films for Solar Cell Absorber Layers"

AWARDS

Best Materials Paper in Microscopy and Microanalysis 2004, for "Depth-Dependent Imaging of Individual Dopant Atoms in Silicon" P. M. Voyles, D. A. Muller, and E. J. Kirkland, Microscopy and Microanalysis **10**, 291 (2004).

Microscopy and Microanalysis Journal Cover Image, April 2004.

National Science Foundation CAREER Award, January 2004.

Journal of Physics: Condensed Matter Top Paper of 2003 for "A Quantitative Measure of Medium-Range Order in Amorphous Materials from Transmission Electron Micrographs" R. K Dash, P. M. Voyles, J. M. Gibson, M. M. J. Treacy, and P. Keblinski, J. Phys: Cond. Mat. **15**, S2425 (2003).

Microscopy Society of America Poster Award: First Place, Physical Applications and Microscopy and Microanalysis, August 2002.

Materials Research Society Silver Graduate Student Award, April 2000.

Incomplete List of Teachers Ranked As Excellent, University of Illinois, top-rated instructors university-wide, Fall 1997.

Howe Prize in Physics, Oberlin College, May 1996.

SELECTED PUBLICATIONS

"Aluminum Nanoscale Order in Amorphous Al92Sm8 Measured by Fluctuation Electron Microscopy", W.G. Stratton, J. Hamann, J.H. Perepezko, P.M. Voyles, X. Mao and S.V. Khare, Appl. Phys. Lett. **86**, 141910 (2005).

"Evidence from atomistic simulations of fluctuation electron microscopy for preferred local orientations in amorphous silicon", S. V. Khare, S. M. Nakhmanson, P. M. Voyles, P. Keblinski, J. R. Abelson, Appl. Phys. Lett **85**, 745 (2004).

"Evidence for a New Class of Defects in Highly *n*-doped Si: Donor-Pair-Vacancy-Interstitial Complexes" P. M. Voyles, D. J. Chadi, P. H. Citrin, D. A. Muller, J. L. Grazul, P. A. Northrup, and H-J. L. Gossmann, Phys. Rev. Lett **91**, 125505 (2003).

"Atomic-Scale Imaging of Individual Dopant Atoms and Clusters in Highly n-type Bulk Si" P. M. Voyles, D. A. Muller, J. Grazul, P. H. Citrin, and H.-J. Gossmann, Nature **416**, 826 (2002).

"Absence of an Abrupt Phase Change from Polycrystalline to Amorphous in Silicon with Deposition Temperature" P. M. Voyles, J. E. Gerbi, M. M. J. Treacy, J. M. Gibson, and J. R. Abelson, Phys. Rev. Lett. **86**, 5514 (2001).

"Control of Medium-Range Order in Amorphous Silicon via Ion and Neutral Bombardment" J. E. Gerbi, P. M. Voyles, M. M. J. Treacy, J. M. Gibson, and J. R. Abelson, Appl. Phys. Lett, **82**, 3665 (2003).

"Medium-range Order in Amorphous Silicon Measured by Fluctuation Electron Microscopy" P. M. Voyles and J. R. Abelson, in *Critical Review of Amorphous and Microcrystalline Materials and Solar Cells*, H. Fritzsche and S. Guha, eds.; Solar Energy Materials and Solar Cells **78**, 85 (2003) (invited review).

SELECTED PRESENTATIONS

European Microbeam Analysis Society / International Union of Microbeam Analysis Societies Joint Meeting, 2005, "Imaging Single Atoms with Z-contrast STEM in Two and Three Dimensions" (invited talk).

American Physical Society March Meeting 2005, "Medium-Range Structure in Al-based Amorphous Metals from Fluctuation Electron Microscopy" (invited talk).

Materials Research Society Fall Meeting 2004, "Imaging Single Atoms with Z-contrast STEM: Current Results and Future Prospects" (invited talk).

Microscopy and Microanalysis 2004 Pre-meeting Congress on Microscopy in an Aberration-Free Environment, "Potential for Optical Sectioning in Aberration-Corrected Z-Contrast STEM" (invited talk).

Microscopy and Microanalysis 2003, "ADF-STEM Imaging of Dopants and Defect Nanoclusters in Si" (invited talk).