



Dr. Nathan P. Guisinger
Scientist

Theme: Electronic and Magnetic
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Professional Preparation:

University of Illinois	Electrical Engineering	B.S. 1999
University of Illinois	Electrical Engineering	M.S. 2002
Northwestern University	Materials Sci. and Eng.	Ph.D. 2005

Research Summary:

My research interests include:

- The study of low-dimensional carbon based nanostructures ranging from metal-organic molecules to 2D graphene: synthesis, characterization, and application.
- The development of advanced transparent conductors for photovoltaic applications.
- Study of structural, electrical, and magnetic properties of thin films, organic molecules, metals, and semiconductors.
- Scanning tunneling microscopy, spectroscopy, and spin-polarized techniques.

Selected Recent Publications:

N. P. Guisinger, G. M. Rutter, J. N. Crain, P. N. First, and J. A. Stroscio, "Exposure of epitaxial graphene grown on 6H-SiC(0001) to atomic hydrogen," *Nano Letters*, accepted, 2009.

G. M. Rutter, J. N. Crain, N. P. Guisinger, T. Li, P. N. First, and J. A. Stroscio, "Interference and localization in epitaxial graphene," *Science*, **317**, 219 (2007).

N. P. Guisinger, N. L. Yoder, and M. C. Hersam, "Probing charge transport at the single molecule level on silicon using cryogenic ultra-high vacuum scanning tunneling microscopy," *Proc. Nat. Acad. Sci. USA*, **102**, 8838 (2005).

N. P. Guisinger, M. E. Greene, R. Basu, A. S. Baluch, and M. C. Hersam, "Room temperature negative differential resistance through individual molecules on silicon surfaces," *Nano Letters*, **4**, 55 (2004).

Awards and Honors:

- 2007 AVS (Thin Films Division) – Outstanding Young Researcher Award
- 2006 National Research Council Postdoctoral Fellowship
- 2005 AVS – Top Level Graduate Research Award
- 2005 Physical Electronics Conference (PEC) - Nottingham Prize
- 2005 Hilliard Symposium - Runner Up "Best Student Presentation"
- 2004 Northwestern University Graham Fellowship