

Curriculum Vitae of Amir A. Farajian

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CAREER HISTORY

2007-present *Assistant Professor,*

Department of Mechanical and Materials Engineering,
Wright State University, Dayton, Ohio.

2006-2007 *Research Scientist ,*

Department of Mechanical Engineering and Materials Science,
Rice University, Houston, Texas.

2005-2006 *Postdoctoral Research Associate,*

Department of Mechanical Engineering and Materials Science,
Rice University, Houston, Texas.

2001-2005 *Research Associate Scientist,*

Institute for Materials Research,
Tohoku University, Sendai, Japan.

1999-2001 *Postdoctoral Researcher,*

National Institute of Materials and Chemical Research (currently Research Institute
for Computational Sciences),
National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan.

1995-1996 *Lecturer,*

Physics Department, Kashan University, Kashan, Iran.

EDUCATION

1999 *Ph.D. in Materials Science and Condensed Matter Theory.*

Institute for Materials Research, Tohoku University, Sendai, Japan.

1994 *M.Sc. in Solid State Physics.*

Department of Physics, Isfahan University of Technology, Isfahan, Iran.

1991 *B.Sc. in Electrical Engineering.*

Department of Electrical Engineering, Sharif University of Technology, Tehran, Iran.

GRADUATE COURSES TAUGHT

2007 *At Wright State University,*

“Advanced thermodynamics” (Fall quarter 2007, Fall quarter 2008), “Advanced Energy Storage and Conversion” (Spring quarter 2008), “Computational Materials Science” (Winter quarter 2009).

2003-2004 *At Tohoku University,*

“Electron correlation effects in materials” (Fall semester 2003, Spring semester 2004).

Ph.D. THESES SUPERVISED

2002-2007 Supervised the PhD theses of two candidates, who received their degrees in 2005 and 2009, at the Institute for Materials Research, Tohoku University, Sendai, Japan.

HONORS AND AWARDS

- 2005 Recipient of the *Japan Society for the Promotion of Science (JSPS) fellowship* award.
- 2005 Featured on *National Japanese (NHK) TV*, March 2005.
- 2001 Featured in the front page of *Japanese newspaper* Nikkan Kogyo Shimbun (Business and Technology), Nov. 21, 2001.
- 1999 Featured in *Physical Review Focus*, 22 June 1999: “Nanotube Electronics”, <http://focus.aps.org/story/v3/st35>

OTHER SCHOLARLY ACTIVITIES

- **Referee** of several scientific research journals.
- **Panel member** for the study “Nanotechnology and the Developing World”, published in Public Library of Science (PLOS) Medicine, Volume 2, Issue 4, pages 300–303, April 2005.
- Member of the **Organizing Committee** of the 4th International Conference on Intelligent Processing and Manufacturing of Materials (IPMM’03), May 18–23, 2003, Sendai, Japan.

TECHNICAL EXPERTISE

- Software design for general purpose transport calculations in quasi-one-dimensional systems, using nonequilibrium Green’s function approach.
- Extensive experience with various tight-binding and ab initio density functional electronic structure and molecular dynamics (MD) calculation programs such as SIESTA, VASP, Mixed Basis and Gaussian.

PUBLICATIONS

- 51 research articles in refereed scientific journals, 5 book chapters and 121 conference proceedings and abstracts (as of January 2009), covering various areas of nanomaterials functionalization and application. The most recent articles are:
 - 1) “The effects of defects on the conductance of graphene nanoribbons”, *N. Gorjizadeh, A. A. Farajian, and Y. Kawazoe*, *Nanotechnology* **20**, 015201 (2009).
 - 2) “Spin and band-gap engineering in doped graphene nanoribbons”, *N. Gorjizadeh, A. A. Farajian, K. Esfarjani, and Y. Kawazoe*, *Phys. Rev. B* **78**, 155427 (2008).
 - 3) “Polarization, energetics and electrorheology in nanotube suspensions under an applied electric field: An exact numerical approach”, *A. A. Farajian, O. V. Pupyshcheva, H. K. Schmidt, and B. I. Yakobson*, *Phys. Rev. B* **77**, 205432 (2008).
 - 4) “Fullerene nanocage capacity for hydrogen storage”, *O. V. Pupyshcheva, A. A. Farajian, and B. I. Yakobson*, *Nano Lett.* **8**, 767 (2008).
 - 5) “Electron transport of nanotube-based gas sensors: An ab initio study”, *A. Sadrzadeh, A. A. Farajian, and B. I. Yakobson*, *Appl. Phys. Lett.* **92**, 022103 (2008).