

Olmstead Biosketch July 2013

Marjorie A. Olmstead

Professor of Physics, Adjunct Professor of Chemistry, Director of Nanotechnology PhD Program
University of Washington, Box 352560, Seattle, WA 98195-1560 USA.

Phone: 1-206-685-3031; FAX 1-206-685-0635; E-mail: olmstd@uw.edu

WWW: <http://faculty.washington.edu/olmstd>

Professional Preparation:

- *Education*
 - University of California, Berkeley, Ph.D. in Physics: 1985.
 - University of California, Berkeley, M.S. in Physics: 1982.
 - Swarthmore College, B.A. in Physics, Highest Honors: 1979.

Appointments:

- *Employment*
 - University of Washington, Seattle. Director, Nanotechnology Interdisciplinary Ph.D. Program (2004 – pr.); Professor of Physics, Adjunct Professor of Chemistry (1997 – pr.); Associate Professor (1993 – 97); Assistant Professor (1991 – 93).
 - University of California, Berkeley. Assistant Professor of Physics: 1986-1990.
 - Xerox Palo Alto Research Center. Member of Research Staff: 1985-86.
- *Awards*
 - Fellow, American Physical Society (2003) and American Vacuum Society (1994)
 - UW Society of Physics Students Undergraduate Teaching Award (1999 and 2003)
 - Alexander von Humboldt Research Award (1999-2000)
 - American Physical Society Maria Goeppert-Mayer Award (1994)
 - American Vacuum Society Peter Mark Memorial Award (1994)
 - National Science Foundation Presidential Young Investigator Award (1987)

Recent Publications Most Closely Related to Project

- “Marjorie Olmstead Essay,” in *Blazing the Trail: Essays by Leading Women in Science*, edited by Emmal Ideal and Rhiannon Meharchand (published Summer 2013; hep.yale.edu/wipbook).
- “Band bending and surface defects in β -Ga₂O₃,” T. C. Lovejoy, Renyu Chen, X. Zheng, E. G. Villora, K. Shimamura, H. Yoshikawa, Y. Yamashita, S. Ueda, K. Kobayashi, S. T. Dunham, F. S. Ohuchi, and M. A. Olmstead, *Applied Physics Letters* 100 (2012) 181602.
- “Incorporation, valence state, and electronic structure of Mn and Cr in bulk single crystal β -Ga₂O₃,” T. C. Lovejoy, Renyu Chen, E. N. Yitamben, V. Shutthanadan, S. M. Heald, E. G. Villora, K. Shimamura, S. Zheng, S. T. Dunham, F. S. Ohuchi, and M. A. Olmstead, *Journal of Applied Physics* 111 (2012) 072212.
- “Controlling the growth morphology and phase segregation of Mn-doped Ga₂Se₃ on Si(001),” Tracy C. Lovejoy, Esmeralda N. Yitamben, Steven M. Heald, Fumio S. Ohuchi and Marjorie A. Olmstead, *Physical Review B* 83 (2011) 155312.
- Correlation between Morphology, Chemical Environment and Ferromagnetism in the Intrinsic-Vacancy Dilute Magnetic Semiconductor: Cr-doped Ga₂Se₃/Si(001), Esmeralda N. Yitamben, Tracy C. Lovejoy, Alexandre B. Pakhomov, Steven M. Heald, Fumio S. Ohuchi and Marjorie A. Olmstead, *Physical Review B* 83 (2011) 045203

Selected Other Recent Publications

- “MnSe phase segregation during heteroepitaxy of Mn doped Ga₂Se₃ on Si(001),” T.C. Lovejoy, E.N. Yitamben, S.M. Heald, F.S. Ohuchi and M.A. Olmstead, *Applied Physics Letters* **95** (2009) 241907.
- “One-dimensional electronic states in Ga₂Se₃ on Si(001):As,” Tracy C. Lovejoy, Esmeralda N. Yitamben, Taisuke Ohta, Samuel C. Fain, Jr., Fumio S. Ohuchi and Marjorie A. Olmstead, *Physical Review B* 81 (2010) 245313.

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- “Teaching nanoethics to graduate students,” M. A. Olmstead and D. R. Bassett, 2009 *Nanoethics Graduate Education Symposium Monograph*, Nanoethics on the World Wide Web, pp 131-140 (<http://depts.washington.edu/ntethics/symposium/index.html>).
- “Surface Morphology and Electronic Structure of Bulk Single Crystal β -Ga₂O₃(100),” T. C. Lovejoy, E. N. Yitamben, N. Shamir, J. Morales, E. G. Villora, K. Shimamura, S. Zheng, F. S. Ohuchi and M. A. Olmstead, *Applied Physics Letters*, 94 (2009) 081906.
- “Laser and Electrical Current Induced Phase Transformation of In₂Se₃: Semiconductor Thin Film on Si(111),” C.-Y. Lu, P. J. Shamberger, E. N. Yitamben, K. M. Beck, A. G. Joly, M. A. Olmstead and F. S. Ohuchi, *Appl. Phys. A* **93** (2008) 93.

Synergistic Activities

- Director, University of Washington Dual-Titled Ph.D. Degree in Nanotechnology and Molecular Engineering (2013 – pr.); Director, UW Nanotechnology Dual Degree Ph.D. Program (2004 – 2013); Principal Investigator Nanotechnology IGERT (2004 – 2011); co-PI (2000 – 2004)
- Associate Chair for Undergraduate Affairs, Physics Department (2009 – pr.)
- Member of Steering Committee, University of Washington Undergraduate Option Program in Nanoscience and Molecular Engineering (2009 – pr.)
- Organizer of Northwest Conference for Undergraduate Women in Physics, 2012.
- UW Faculty Council on Women in Academia. Chair (2011-14), co-chair (2010 – 11), Member (2005 – pr.)

Collaborators:

- **Recent Advised or Co-Advised Doctoral Students and Their Current Situation**
 - Hien Pham (UW Seattle, Materials Science and Engineering 2012; co-advise w/ Prof. Fumio Ohuchi) Staff Engineer, Intel Corporation, Portland.
 - Tracy Clark Lovejoy (UW Seattle, Physics and Nanotechnology 2010) Staff Scientist, Nion Corporation.
 - Esmeralda Yitamben (UW Seattle, Physics and Nanotechnology 2010) Staff Scientist, Sandia National Laboratory
 - Claire Lu (UW Seattle, Materials Science and Engineering, August 2007; co-advise w/ Prof. Fumio Ohuchi) Staff Engineer, Intel Corporation, Portland.
 - Ngigi (Isaiah) wa Gatuna (UW Seattle, Materials Science and Engineering, June 2007; co-advise w/ Prof. Fumio Ohuchi) Kenyan Activist.
 - Diedrich Schmidt (Ph.D. UW Seattle, Physics and Nanotechnology 2005) Assistant Professor, North Carolina A&T University, Greensboro.
 - Aaron Bostwick (Ph.D. UW Seattle, Physics, 2004) Staff Scientist, Advanced Light Source, Berkeley.
 - Taisuke Ohta (Ph.D. UW Seattle, Materials Science and Engineering and Nanotechnology, 2004; co-advise w/ Prof. Fumio Ohuchi) Staff Scientist, Sandia National Laboratory, Albuquerque.
 - Jonathan Adams (Ph.D. UW Seattle, Physics, 2004) Vice President, Black Rock Financial Services, London.
- **PhD Advisors**
 - Nabil Amer (retired) and Peter Yu (retired)
- **Recent (non-student) Collaborators**
 - Fumio Ohuchi (UW), Alec Pakhomov (UW), Scott Dunham (UW), Rene Overney (UW), Samuel Fain (UW, deceased), Noah Shamir (Nuclear Research Center, Negev), Encarnacion Garcia (NIMS), K. Shimamura (NIMS), Toyohiro Chikyow (NIMS), Steven Heald (Advanced Photon Source), Eli Rotenberg (Advanced Light Source), Taisuke Ohta (Sandia Albuquerque), Scott Chambers (PNNL), Ken Beck (PNNL), Alan Joly (PNNL), Vaithiyalingam Shutthanandan (PNNL), Daniel Gamelin (UW).