

LA ROSA, ANDRES H

PROFESSIONAL EDUCATION

• Ph. D. in Physics	North Carolina State University	Raleigh, North Carolina	1990-96
• MS in Physics	Southern Illinois University	Carbondale, Illinois	1988-90
• Licenciado in Physics	National University of Engineering	Lima-Peru	1986

APPOINTMENTS

• Associate Professor	Portland State University-Physics Dept	Portland, Oregon	2006-
• Assistant Professor	Portland State University-Physics Dept	Portland, Oregon	1999-2006
• Research Scientist	Firmenich Inc.	Princeton, New Jersey	1997-99
• Research Associate	North Carolina State University	Raleigh, North Carolina	1996-97
• Assistant Professor	National University of Engineering	Lima-Peru	1986-88

REPRESENTATIVE PUBLICATIONS

List of 5 publications most closely related to the proposed project

1. A. H. La Rosa, N. Li, R. Fernandez, X. Wang, R. Nordstrom, and S. K. Padigi, "Whispering-gallery acoustic sensing: Characterization of mesoscopic films and scanning probe microscopy applications," *Rev.Sci.Instrum.* **82**, 093704 (2011)
2. R. Fernandez, X. Wang, and A. H. La Rosa, "Acousto Characterization of Fluid-like Mesoscopic Films under Shear," Proceedings of the IEEE Nano 2011 Conference (Portland, OR 2011), in press.
3. X. Cui, A. H. La Rosa, "Investigation of the probe-sample interaction in the ultrasonic/shear force microscope: The phononic friction mechanism." *Appl. Phys. Lett.* **87**, 231907 (2005).
4. A. H. La Rosa, R. Nordstrom, X. Cui, J. McCollum, and Nan Li; "The Ultrasonic/Shear-Force Microscope: Integrating Ultrasonic Sensing into NSOM," *Rev. Sci. Instrum.* **76**, 093707 (2005).
This article was also selected for the Virtual Journal of Nanoscale Science & Technology, September 26, 2005 issue.
5. A. H. La Rosa, N. Li, and K. Asante, "The ultrasonic/shear-force microscope: a metrology tool for surface science and technology," invited paper. Proceedings of SPIE Vol. SA111 Nanofabrication: Technologies, Devices, and Applications II, Symposium on Optics East 2005, Boston, MA (2005).

List of 5 other significant publications

1. A. La Rosa and M. Yan, "Proton-Fountain Electric-Field-Assisted Nanolithography (PEN)," in Tip-Based Nanofabrication: Fundamentals and Applications, Springer: New York, Ed. A. A. Tseng, Chapter 8 p299-324 (2011).
2. Xiaohua Wang, X. Wang, R. Fernandez, L. Ocola, M. Yan, and A. La Rosa, "Electric Field-Assisted Dip-Pen Nanolithography on Poly(4-vinyl Pyridine) Films," *ACS Appl. Mater. Interface* **2**, 2904 (2010)
3. C. Maedler, S. Chada, X. Cui, M. Taylor, M. Yan, and A. La Rosa, "Creation of nanopatterns by local protonation of P4VP via dip pen nanolithography." *J. Appl. Phys.* **104**, 014311 (2008).
4. B. Biehler and A. H. La Rosa, "High frequency-bandwidth optical technique to measure thermal elongation time responses of near-field scanning optical microscopy (NSOM) probes," *Rev. Sci. Instrum.* **73**, 3837 (2002).
5. H. P. Chiang, A. H. La Rosa, P. T. Leung, K. P. Li, and W. S. Tse; "Optical spectroscopy for single-molecules near a microstructure at varying substrate temperatures," *Optics. Commun.* **205**, 343-350 (2002).

ADVISORS

Graduate Advisor: Dr. Rongjia Tao, Chair of the Physics Department, Southern Illinois University at Carbondale, IL. Currently at Department of Physics, Temple University, Philadelphia, PA 19122-6082 (215) 204-7651. Phone: 215-204-5652. Email: rtao@temple.edu

Graduate Advisor: Dr. Hans Hallen, Department of Physics; Box 8202; North Carolina State University; Raleigh, NC, 27695-8202; Phone: (919) 515-6314 E Mail: Hans_Hallen@ncsu.edu

Graduate Co-Advisor: Dr. Michael Paesler, Department Head, Physics Department; Box 8202; North Carolina State University; Raleigh, NC, 27695-8202. Phone: (919) 515-2522. Email: paesler@ncsu.edu

Postdoc Advisor: Dr. Harald Ade; Department of Physics; Box 8202; North Carolina State University; Raleigh, NC, 27695-8202. Phone: (919) 515-1331. Email: Harald_Ade@ncsu.edu

Supervisor: Daniel van der Weide, Director of the Center for Nanomachined Surfaces, University of Delaware. Currently at the Electrical and Engineering Department, University of Wisconsin, Madison, Madison, WI, 53706-1691. Tel: 608/265-6561. E-mail: danvdw@engr.wisc.edu

Supervisor: Frederic Zenhausern, Director of the Analytical Research Laboratory at Firmenich, Inc., Princeton, NJ. Currently, Director of the Applied Nanobioscience Center (ANBC), Arizona State University. Phone: (480) 727 8187. Email: Frederic.Zenhausern@asu.edu

HONORS

- Recipient of the 2006 John Eliot Allen “*Outstanding Teaching Award*,” Portland State University.
- Recipient of the 2004-2005 Portland State University Civic Engagement Award, “*Excellence in Faculty/Community Partnership*,” based on “Dr. La Rosa’s long-term commitment to effective civic engagement efforts between Portland State University, the surrounding community, and beyond.” (2005).
- Honorary degree “Doctor Honoris Causa” from the University Jose Faustino Sanchez Carrion, Huacho-Peru (1996).

COLLABORATORS

- Dr. M. Yan, Department of Chemistry, Portland State University. Phone: 503-725-5756, yanm@pdx.edu.
- Dr. L. Ocola, Senior Scientist, Argonne National Laboratory, Argonne, IL. Phone: 630-252-6613, ocola@anl.gov
- Dr. R. Nordstrom, Department of Mechanical and Materials Engineering Department, Portland State University. Phone: 503-725-2985, nordsr@pdx.edu

SYNERGISTIC ACTIVITIES

- **Annual presentations on Optical Technologies at local elementary and high schools:**
Skyview High School, Vancouver, WA; Wilsonville High School, Wilsonville, OR; Molalla High School, Molalla, OR; Sabin Elementary, Portland, Oregon.
- **Total number of graduate students advised: 11**
Ph. D. students: Fernandez, and Xiaohua Wang
MS students: B. Biehler, A. Sinharay, R. Ch. Sikakollu, J. McCollum, X. Cui, V. Vladamari, C. Maedler, K. Asante, N. Li.
- **Mentoring undergraduate students: 17**
J. Parra, A. Bae, S. Elim, S. Lares, S. Anton, Lockhart, P. York, C. Bauer, J. South, R. Hendrickson, J. Martinez, J. Lewis, Abdulrhman, B. Bolen, K. Mansor, T. Nguyen, J. Rieger.
- **Mentoring high school students:** N. Moehnke, J. Ramirez, Ch. Lobo.
Jesus Ramirez, from Molalla High School, Molalla, OR. He received the IEEE Award at the 2004 Intel Northwest Science Expositions,” Oregon, 2004.
Christian Lobo, West View High School, Beaverton, OR. He obtained a 4th place in Physics at the “Intel International Science and Engineering Fair,” Indianapolis, Indiana, May 2006
- Member of the PSU “**Diversity Achievement Scholarship**” Selection Committee. Office of Educational Equity Programs and Services, Portland State University. March-2001.
- “Scholarship of Teaching and Community Engagement Resource Team (STRT)” award. Center for Academic Excellence, Portland State University (2002-2003).
- Member of the Physics department team that was awarded the “Departmental Engagement” mini-grant, Center for Academic Excellence, Portland State University (2003).
- Provost’s PSU Foundation Faculty Development Award, “Fomenting University-High School Institutional Relationship” (2003).

PROFESSIONAL DEVELOPMENT ACTIVITIES

- The PI is one of the main organizers of the Portland Nanoscience and Nanotechnology Academy (PNNA), a multidisciplinary group currently composed of 18 PSU researchers from four academic departments www.pnna.groups.pdx.edu

PARTICIPATION in the ORGANIZATION of INTERNATIONAL SYMPOSIA.

- Member of the Organization Committee of the Conference on “Nanofabrication: Technologies, Devices, and Applications II (SA111).” Part of SPIE’s International Symposium on Optics East 2005, 23-26 October 2005, Boston, MA, USA.
- Member of the Organization Committee of the “2006 International Conference on Nanofabrication Technologies, Devices and Applications, NanoFab 2006.” Part of the NSTI Nanotech 2006, May 7-11, 2006, Boston, Massachusetts, U.S.A.