

## Luisa Amelia Dempere

### Education:

**Doctor of Philosophy.** Materials Science and Engineering, University of Florida, Gainesville, (January 1997 - August 1999).

**Master of Science.** Materials Science and Engineering, University of Florida, Gainesville, (January 1994-December 1996).

**Licentiate in Chemistry "Cum Laude",** Universidad de Oriente, Cumaná, Venezuela, (June 1992).

### Experience:

**Associate Engineer, Director of the Major Analytical Instrumentation Center (MAIC),** Materials Science and Engineering (MSE) Department, University of Florida, Gainesville (October 2006 - Present).

**Assistant Engineer, Director of the Major Analytical Instrumentation Center (MAIC),** Materials Science and Engineering Department, University of Florida, Gainesville (November 2001 - Present).

**Assistant-In Engineering, Director of the Major Analytical Instrumentation Center (MAIC),** Materials Science and Engineering Department, University of Florida, Gainesville (June 2000 - October 2001).

**Research Scientist,** Major Analytical Instrumentation Center (MAIC), Materials Science and Engineering Department, University of Florida, Gainesville (August 1999 – June 2000).

**Graduate Research Assistant,** Materials Science and Engineering Department, University of Florida, (August 1995 - August 1999).

**Instructor-Investigator,** Institute of Investigations in Biomedical and Applied Sciences (Instituto de Investigaciones en Biomedicina y Ciencias Aplicadas (IIBCA)), Universidad de Oriente, Cumaná, Venezuela, (July 1992 - December 1993).

**Laboratory Intern** (Internship) Institute of Physics. Autonomous University of Mexico (Universidad Nacional Autónoma de México (UNAM)), Mexico, (September - November 1992).

**Laboratory Assistant,** Institute of Investigations in Biomedical and Applied Sciences (Instituto de Investigaciones en Biomedicina y Ciencias Aplicadas (IIBCA)), Universidad de Oriente, Cumaná, Venezuela, (January 1990 - July 1992).

**Teaching Assistant**, Chemistry Department, Universidad de Oriente, Cumaná, Venezuela, (April 1987 - December 1990).

**Publications:**

**Dempere, L.A.** "Scanning Electron Microscopy and Associated facilities at the Major Analytical Instrumentation Center", *Microscopy and Microanalysis*, Volume 13, Supplement 2, Aug 2007, pp 1704-1705.

**Dempere, L.A.** "Major Analytical Instrumentation Center: A Multi-User Materials Characterization and Analysis Facility", *Microscopy and Microanalysis*, Volume 12, Supplement 2, Aug 2006, pp 1708-1709.

**Dempere, L.A.** and M.J. Kaufman "Densification/Consolidation of MoSi<sub>2</sub>-TiB<sub>2</sub> composites produced by in-situ reactions." *Microscopy and Microanalysis*, Volume 11, Supplement 2, 1734-1735, 2005.

**Dempere, L. A.** and Kaufman, M.J. "Characterization of the phase evolution of MoSi<sub>2</sub>/TiB<sub>2</sub> composites produced by elemental and displacement in-situ reactions using Scanning Electron Microscopy (SEM) and Electron probe Microanalysis (EPMA)". *Microscopy and Microanalysis*, Volume 10, Supplement 2, 2004.

**Dempere, L. A.** and Kaufman, M.J. "The microstructure of MoSi<sub>2</sub>/TiB<sub>2</sub> composites produced by displacement reactions vs. powder consolidation". *Microscopy and Microanalysis*, Volume 9, Supplement 2, 2003.

**Dempere, L. A.** and Kaufman, M.J. "Characterization of the effects of particle size on the microstructure of MoSi<sub>2</sub>-TiB<sub>2</sub> composites produced by elemental in-situ reactions using Scanning Electron Microscopy (SEM) and Electron Probe Microanalysis (EPMA)". *Microscopy and Microanalysis*, Volume 8, Supplement 2, 2002.

**Dempere, L. A.** and Kaufman, M.J. "Role of particle size and nature of the reactants on the phase evolution, microstructure and densification of MoSi<sub>2</sub>-TiB<sub>2</sub> composites produced by in-situ reactions". *Acta Microscopica*. Suplemento No. 1-November 2000.

**Dempere, L. A.** and Kaufman, M.J. "Characterization of the phase evolution of MoSi<sub>2</sub>-TiB<sub>2</sub> composites produced by in-situ reactions using scanning electron microscopy (SEM), electron probe microanalysis (EPMA), and x-ray diffraction (XRD)". *Microscopy and Microanalysis 2000 Proceedings*. Microscopy Society of America, August 2000.

Eason, P.D, Ross, E.N., **Dempere, L. A.** , and Kaufman, M.J. "Processing, microstructure, and mechanical properties of Mo silicides and their composites". *Transactions of Nonferrous Metals Society of China*, Vol. 1 Suppl.1, June 1999, p 1.

**Dempere, L. A.**, and Kaufman, M.J. “Evolution of phases in MoSi<sub>2</sub>-TiB<sub>2</sub> composites produced by in-situ reactions”. *Proceedings of the 22<sup>nd</sup>. Annual Cocoa Beach Conference and Exposition on Composites, Advanced Ceramics, Materials and Structures*, The American Ceramic Society, 1998.

Bravo, F.O., Centeno, M., Rivas, I., **Dempere, L. A.**, and Hidalgo-Parada, B. “Electron microscopy characterization of type NaA zeolites synthesized from a Venezuelan kaoline”. *Proceedings of the II Interamerican Congress on Electron Microscopy*, Cancún, México, 1993.

**Dempere, Luisa**; Hidalgo-Prada, B., and Orozco, J. “Study of the homogeneity level in Bi-Mo/Al<sub>2</sub>O<sub>3</sub> catalysts by X-Ray Microanalysis and STEM”. *Proceedings of the First Atlantic Congress of Electron Microscopy*, Mérida, Venezuela, 1992.

**Dempere, Luisa**; Hidalgo-Prada, B., and Orozco, J. “Characterization of Bi-Mo/Al<sub>2</sub>O<sub>3</sub> catalysts by SEM, STEM and X-Ray microanalysis”. *Proceedings of the First Atlantic Congress of Electron Microscopy*, Mérida, Venezuela, 1992.

**Dempere, Luisa**; Hidalgo-Prada, B., and Orozco, J. “Activity - morphology - impregnation mechanism relationships in Bi-Mo/Al<sub>2</sub>O<sub>3</sub> catalysts”. *Proceedings of the First Atlantic Congress of Electron Microscopy*, Mérida, Venezuela, 1992.

#### Invited Lectures in Conferences and Seminars:

- “Sustainable Engineering”, Interdisciplinary Materials Seminar, University of Central Florida, Orlando, February 2007.
- “Growth and Management of a Materials Characterization Multi-User Facility”, Materials Science and Engineering, University of North Texas, Denton, November 2006.
- “Sustainable Engineering”, Materials Science and Engineering Seminar, University of North Texas, Denton, November 2006.
- “Sustainable Engineering”, Materials Science and Engineering Seminar, University of Florida, Gainesville, October, 2006.
- “The Major Analytical Instrumentation Center (MAIC): a multi-user materials characterization facility”, Materials Science and Engineering Seminar Series, Virginia Tech, Blacksburg, November 2004.
- "Role of Particle Size and nature of the reactants on the phase evolution, microstructure and densification of MoSi<sub>2</sub> - TiB<sub>2</sub> composites produced by in-situ reactions". 9<sup>th</sup> Venezuelan Congress on Electron Microscopy. Cumaná, Venezuela, November, 2000.
- "Introduction to Electron Microscopy - Fundamentals of Operation". Latin American School for Electron Microscopy (LASEM). 9<sup>th</sup> Venezuelan Congress on Electron Microscopy. Cumaná, Venezuela, November 2000.

## Teaching Activities:

- Undergraduate Courses:
  - Engineering a Sustainable Future
  - Analysis of the Structure of Materials
- Graduate Courses:
  - Scanning Electron Microscopy and Microanalysis
  - Survey of Materials Characterization Techniques (EDGE – Certificate in Materials Characterization).
  - Sustainable Materials Selection (EDGE – Certificate in Sustainable Engineering)
- Training in Analytical Instrumentation:
  - Scanning Electron Microscopes: JEOL JSM-6400, JEOL JSM-6335F
  - Digital Instruments SPM Nanoscope V and III
  - Oxford Instruments EDS Link ISIS and INCA 200
  - Veeco Wyko 1000NT Optical Profilometer
  - Philips APD 3720 X-Ray Diffraction.
- “SEM Hands-on” and “Optical Microscopy”. Microscopy Workshop for Middle and High School Science Teachers. Florida High tech Corridor Consortium, TechPATH Program, since 2003 (2-3 Workshops/year).
- Development of a Life Cycle Analysis Workshop for the 4-H Youth Development Program – IFAS, University of Florida April 2008
- Invited Lecturer on Sustainable Engineering in the Honors course: Sustainability and the Integrated Bottom Line, Office of Sustainability, University of Florida, February 2008.
- Invited Lecturer on Global Warming & Engineering for the undergraduate course EGN 1002 – *Introduction to Engineering* at the University of North Florida, September 2006.
- Guest Lecturer on sustainable engineering topics for the MSE undergraduate courses “*Materials Selection and Failure Analysis*” and “*Stability of Materials*”.
- Approved instructor for the Construction Industry Licensing Board (CILB) of the Florida Department of Business and Professional Regulation.
- Instructor of two continuing education courses at the Southeast Building Conference in Orlando, FL in July 2007. Courses: “*Green Building Certification with the FGBC*” and “*Going Green: What it means to the Builder*”.
- Lab Host – Junior Science, Engineering and Humanities Symposium, 2003-2007.
- Poster Judge, Engineering Fair, College of Engineering.

## Research and Projects:

- FDOT (P.I.) Use of Scanning Electron Microscopy to Determine Chloride Content of Concrete and Raw Materials, 2008-2010.
- Mini-grant for the Enhancement of Sustainability in Instruction, 2007.
- NSF STTR - Proposal for the TaC-Ta<sub>2</sub>C composites, 2006.
- NSF MRI – Acquisition of a LSM510 META high-performance research

- microscope, 2006
- DURIP (Co-P.I.) Acquisition of a Monochromatized X-ray Photoelectron Spectrometer with Spatial Resolution to  $<10\mu\text{m}$ . 2005
- RGP (P.I.) Internationalizing the Curriculum – Sustainable Engineering, 2005.
- NSF (Co-P.I.) Structural Ordering in Doped Organic Semiconductor Thin Films - A Path to Achieve Metallic-like Conductivities, 2005.
- NSF-MRI: “Acquisition of a Monochromatized X-ray Photoelectron Spectrometer with Spatial Resolution to  $<10\mu\text{m}$ ”, 2004
- NSF IMR Terahertz FIR Spectrometer, 2004.
- FCSHWM “Reverse Engineering and Analysis of CRT Monitor and LCD Screen Components to Determine their Potential for Environmental Hazard”, 2002.
- FCSHWM, Evaluation of Arsenic content in treated wood used in playgrounds, 2002
- FCSHWM “Use of Waste-to-Energy Ash in Concrete” , 2001.

### **Collaborations with other Colleges and Universities:**

- Environmental and Occupational Health Sciences Institute of the University of Medicine and Dentistry of New Jersey and the Environmental Protection Agency (EPA). Analysis of samples of particulate pollution generated by a local cement plant collected at surrounding areas, 2007.
- Member of the Advisory Board for the Advanced Materials Characterization Facility (AMCF) at Virginia Tech, (2005 – 2007).
- Nanoscale Science and Engineering Education (NSEE), NSF Program Solicitation, part [D] Nanotechnology Undergraduate Education (NUE), Santa Fe Community College. (2004-2005).
- NSF/CCLI: Enhancing Undergraduate Education in Materials Science, Morehead State University (2004-2005).
- Inter-American Materials Collaboration (CNPq-NSF Program, Universidade Federal de São Carlos, Brazil and MSE/UF) (2002-2003).
- Advisory Board for the Characterization, Research, Instrumentation and Testbed (CRIT) Facilities at the Particle Engineering Research Center (PERC), University of Florida, (2002-2005).

### **Committees:**

#### Department Level:

- Member of 50 Graduate Committees
- Chair of 3 Ph.D. Committees
- Co-Chair of 2 Ph.D. Committees.
- Infrastructure Materials Group: characterization thrust leader

#### College Level:

- Parental and Family Leave Ad-Hoc Committee.

#### University Level:

- Presidential Diversity Council (Current)

- Faculty Senate Sustainability Committee (Current)
- Environmental Health and Safety Committee (Past)
- Student Conduct Committee (Past)

Professional Societies:

- Organizing committee of the Annual Applied Vacuum Science and Technology Symposium / Annual meeting of the Florida Society for Microscopy, Orlando, Florida, since 2000.
- Member of the International Committee of MSA, since 2001.
- Chair of the International Committee of MSA, 2004-2006, 2007-2009.
- President of the Florida Society for Microscopy (FSM), 2003-2005.
- Council Member of the Interamerican Committee of Societies for Electron Microscopy (CIASEM), 2003-2005.
- Program Chair, 2006 FLAVS-FSM Joint Symposium
- President FLAVS (2006-2007)
- Treasurer and member of the LAC for M & 2007, Fort Lauderdale, Fl.
- Chair of the Membership and Communications Committee (and Webmaster) of the USGBC – Heart of Florida Chapter (2008-2010).

**Activities:**

- Member of the Site Visit Committee responsible for the evaluation of the Major Resource Support (MRS) grant application entitled: “Brockhouse Institute for Materials Research”, McMaster University, January 18, 2008, Hamilton, Canada.
- Invited Panelist: “Global Warming? Fact or Fiction? Natural or Human Caused?” 6<sup>th</sup> Annual UNF College of Computing, Engineering, and Construction (CCEC) Symposium. April 16, 2008, University of North Florida, Jacksonville, Florida.
- Sustainability visioning session for Energy and Climate Change for the participation of UF in the program "Sustainability in Higher Education Assessment Framework" developed by the Association for the Advancement of Sustainability in Higher Education (AASHE).
- Graduate and Professional Studies Forum, Judge in Engineering.
- MAIC tours for COE sponsored elementary, middle and high school student visits.
- MAIC Exhibit for the College of Engineering – Dr. Machen’s Presidential Inauguration.
- Campus Visitation program organized by the Graduate School and the Office of Graduate Minorities.
- Founder and coordinator of the Women’s Multicultural Discussion Cafe at the University of Florida.

**Awards & Recognitions:**

- Teaching Excellence Dean’s Letter of Appreciation, March 2008.
- 2008 Prudential Davis Productivity Award, State of Florida.

- 2008 Superior Accomplishment Award, University of Florida.
- Outstanding Academic Achievement Award, College of Engineering, University of Florida, 1998.
- Order “José Félix Ribas” acknowledging academic performance, Caracas, Venezuela, 1993.
- Prize “Gran Mariscal de Ayacucho” to academic excellence, Caracas, Venezuela, 1992.

### **Society Memberships:**

- Microscopy Society of America (MSA).
- American Society for Engineering Education (ASEE).
- The Minerals, Metals and Materials Society (TMS).
- US Green Building Council (USGBC).
- Florida Society for Microscopy (FSM).
- Florida Chapter of the AVS Science and Technology Society (FLAVS).
- Florida Green Building Coalition (FGBC).
- Association of Hispanic Faculty and Staff (AHFS), University of Florida.

### **Professional Development - Workshops and Training:**

- “New Approaches to Materials Education” Workshop by Dr. Michael Ashby, Cambridge, UK, 2008 ASEE Conference, Pittsburgh, June 2008.
- Completed “Next level Leadership at UF Program”, Office of Human Resources, University of Florida, 2007-2008.
- “Supervisory Challenge” Certificate from the Office of Human Resource Services, spring 2007.
- “Fiscal Management Certification”, PRO 3 Series, Office of Human Resource Services, Fall 2007.
- Workshop “Engineering in Transition”, NSF-EPA funded Center for Sustainable Engineering at Carnegie Mellon in July 2006.
- Workshop for Characterization Facility Managers, M & M 2006, Chicago, July 2006.
- Workshop on Cost Sharing for PI's. Division of Sponsored Research & Contracts and Grants. University of Florida, 2001.
- Scanning Probe Microscopy Training Workshop (SPM Nanoscope III). Digital Instruments, Inc. East Coast Applications Lab., Chadd's Ford, Philadelphia. 2000.
- Teach-in'98 Seminar, The University Center for Excellence in Teaching, University of Florida, 1998.
- Scanning Electron Microscopy Workshop, Lehigh University at the Institute of Investigations in Biomedical and Applied Sciences, Universidad de Oriente, Cumaná, Venezuela, 1992.

- Confocal Microscopy Workshop, Venezuelan Society of Electron Microscopy at the Universidad de los Andes, Mérida, Venezuela, 1992.

**Other:**

- Reviewer for Journal Microscopy and Microanalysis.
- Reviewer for the journal Metallurgical and Materials Transactions.
- Reviewer for the journal Materials Science Engineering A.
- Book reviewer for UK Centre for Materials Education, Academic Press