

**Louis J. Santodonato**  
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### **Education and Training**

The University of Tennessee, Materials Science and Engineering Ph.D. Candidate  
The State University of New York, Binghamton Physics M.S., 1989  
The State University of New York, Binghamton Physics B.S., 1987

### **Research and Professional Experience**

2013- Present Scientific Associate, Oak Ridge National Laboratory (ORNL), concurrent with pursuing a Ph.D. in Materials Science and Engineering at the University of Tennessee

2001 – 2013 Group Leader, ORNL. Responsible for establishing and leading scientific support teams at two facilities (The High Flux Isotope Reactor, and the Spallation Neutron Source). Interactions with internal and external scientists to identify needs, prioritize projects, and deliver world-leading equipment. Manage budgets of ~ \$1M per year.

1992-2001 Scientific Staff Member, National Institute of Standards and Technology (NIST). Responsibilities included preparing and delivering laboratory equipment to researchers, and giving face-to-face support to ensure successful experiments.

1989-1992 R&D Staff Member, Olin Research Center, Connecticut  
Test and improve materials used for making toners and magnetic inks for specialized printers

### **Publications**

- [1] L.J. **Santodonato**, Y. Zhang, M. Feygenson, C.M. Parish, M.C. Gao, R.J.K. Weber, J.C. Neufeind, Z. Tang, P.K. Liaw, *Deviation from high-entropy configurations in the atomic distributions of a multi-principal-element alloy*, Nat Commun, 6 (2015).
- [2] H. Diao, L. **Santodonato**, Z. Tang, T. Egami, P. Liaw, *Local Structures of High-Entropy Alloys (HEAs) on Atomic Scales: An Overview*, JOM, 67 (2015) 2321-2325.
- [3] L. **Santodonato**, H. Bilheux, B. Bailey, J. Bilheux, P. Nguyen, A. Tremsin, D. Selby, L. Walker, *The CG-1D Neutron Imaging Beamline at the Oak Ridge National Laboratory High Flux Isotope Reactor*, Physics Procedia, 69 (2015) 104-108.
- [4] J.K.R. Weber, C.J. Benmore, L.B. Skinner, J. Neufeind, S.K. Tumber, G. Jennings, L.J. **Santodonato**, D. Jin, J. Du, J.B. Parise, *Measurements of liquid and glass structures using aerodynamic levitation and in-situ high energy x-ray and neutron scattering*, J. Non-Cryst. Solids, 383 (2014) 49-51.
- [5] E. Lukosi, E. Herrera, A.C. Stowe, R. Milburn, D. Richardson, B. Wiggins, A. Burger, O. Chvala, L. **Santodonato**, H. Bilheux, *Investigation of a Lithium Indium Diselenide detector for neutron transmission imaging*, Hard X-Ray, Gamma-Ray, and Neutron Detector Physics XVI, 9213 (2014) 8.
- [6] L.B. Skinner, C.J. Benmore, J.K.R. Weber, S. Tumber, L. Lazareva, J. Neufeind, L. **Santodonato**, J. Du, J.B. Parise, *Structure of Molten CaSiO<sub>3</sub>: Neutron Diffraction*

- Isotope Substitution with Aerodynamic Levitation and Molecular Dynamics Study*, J. Phys. Chem. B, 116 (2012) 13439-13447.
- [7] H. Nojiri, S. Yoshii, M. Yasui, K. Okada, M. Matsuda, J.S. Jung, T. Kimura, L. **Santodonato**, G.E. Granroth, K.A. Ross, J.P. Carlo, B.D. Gaulin, *Neutron Laue Diffraction Study on the Magnetic Phase Diagram of Multiferroic MnWO<sub>4</sub> under Pulsed High Magnetic Fields*, Physical Review Letters, 106 (2011).
- [8] L.J. **Santodonato**, L.M.H. Walker, A.J. Church, C.M. Redmon, *Temperature control diagnostics for sample environments*, in: J.G. Weisend, J. Barclay, S. Breon, J. Demko, M. DiPirro, J.P. Kelley, P. Kittel, A. Klebaner, J. Marquardt, G. Nellis, T. Peterson, J. Pfothenauer, S. VanSciver, M. Zagarola, A. Zeller (Eds.) *Advances in Cryogenic Engineering*, Vols 55a and 55b, Amer Inst Physics, Melville, 2010, pp. 1647-1651.
- [9] L.J. **Santodonato**, D.A. Neumann, R.W. Erwin, *Template mediated growth of rare earth carbides*, J. Am. Chem. Soc., 118 (1996) 12860-12861.

### **Synergistic Activities**

Mentor for the SULI (Science Undergraduate Laboratory Internships) program

Collaborator on Small Business Innovation Research (SBIR) projects, including the development of aerodynamic sample levitation equipment, performed under DOE grant number DE-SC0004684

User outreach activities at the SNS and HFIR, including the User Partnership for Sample Environment Development

Participation in the STARs Mentor Program, "Preparing Science and Technology Leaders of the Future", sponsored by the Siemens Foundation

### **Awards and Honors**

2014 Joseph E. Spruiell Award for Excellence in Research, The University of Tennessee, Materials Science and Engineering Department

2000 NIST "Making a Measurable Difference" award for excellent user-support

### **Collaborators and Other Affiliations**

M. C. Gao – National Energy Technology Laboratory (NETL)

R. J. K. Weber – Materials Development, Inc.

Y. Zhang – University of Illinois at Urbana Champaign

Z. Tang – Virginia Tech

H. Bilheux, L. Debeer-Schmitt, M. Feyngenson, J. C. Neuefeind, and C. M. Parish – Oak Ridge National Laboratory

### **Graduate Advisor**

Prof. Peter K. Liaw

The University of Tennessee, Department of Materials Science and Engineering