VITALIE STAVILA

Sandia National Laboratories
Hydrogen & Combustion Technologies
7011 East Avenue, MS-9161
Livermore, CA, 94550

Tel.: (925) 294-3059 (office)
Tel.: (925) 300-7679 (cell)
Fax: (925) 294-3231
E-mail: vnstavi@sandia.gov

EDUCATION

- **Ph.D. / Chemistry**
  State University of Moldova, Chisinau, Moldova, 2002
  Thesis title: "Synthesis of new bismuth-transition metal heterometallic complexes as molecular precursors for mixed oxide systems"

- **B.S. / Chemistry**
  State University of Moldova, Chisinau, Moldova, 1996
  Thesis title: "Synthesis of bismuth complexes with aminopolycarboxylate ligands"

PROFESSIONAL EXPERIENCE

- **May 2011 – present**
  Senior Member of Technical Staff
  Development of nanostructured metal hydrides for reversible hydrogen storage
  Fabrication of Metal Organic Framework thin films and their integration in functional devices
  Synthesis of coordination and organometallic compounds for radiation detection
  Development of nanoporous scaffolds for energy storage applications.

- **January 2008 – May 2011**
  Limited Term Technical Staff
  Metal Hydride Center of Excellence, Sandia National Laboratories, Livermore, CA
  Development of light weight hydrogen storage materials within the Metal Hydride Center of Excellence; PI on an U.S. Department of Energy sponsored project devoted to synthesis of complex metal hydride materials for reversible hydrogen storage
  Part of an interdisciplinary team of experimentalists and theorists to tackle challenging aspects of hydrogen storage in metal hydrides.

- **August 2007 – December 2007**
  Visiting Research Scientist
  Department of Chemistry, State University of New York at Albany, Albany, NY
  Host: *Prof. Evgeny Dikarev*
  Synthesis and characterization of polynuclear metal complexes based on chelating diketonate ligands

- **May 2005 – August 2007**
  Postdoctoral Research Associate
  Department of Chemistry, Rice University, Houston, TX
  Advisor: *Prof. Kenton H. Whitmire*
  Research on organometallic and inorganic complexes as precursors for nanostructured alloys, oxide and chalcogenide nanostructured materials
  Preparation and probing of surfactant-templated inorganic nanomaterials

- **April, 2004 – April, 2005**
  Postdoctoral Fellow
  Ecole Normale Supérieure de Lyon, France
  Advisor: *Prof. Jens Hasserodt*
  Synthesis and characterization of iron complexes with macrocyclic chelate ligands
  Design and synthesis of enzyme-responsive iron complexes as Magnetic Resonance Imaging (MRI) contrast agents

- **July, 2002 – April, 2004**
  Lecturer
  Department of Chemistry, State University of Moldova, Chisinau, Moldova
  Design, synthesis and characterization of single-source precursors for oxide materials.
  Teaching undergraduate inorganic and coordination chemistry.

- **October, 1996 – July, 2002**
  Graduate Student
  State University of Moldova, Chisinau, Moldova
  Advisor: *Prof. Aurelian Gulea*
  Synthesis and characterization of new bismuth heterometallic complexes with transition metals and their use as molecular precursors for mixed-oxide systems

TECHNICAL EXPERIENCE

- Design, synthesis and characterization of solid-state hydrogen storage materials; mechanistic studies of the hydrogen release and absorption from complex hydride materials and the effect of additives and catalysts on their cycling characteristics.
- Main group and transition metal inorganic and organometallic chemistry including synthesis, purification and characterization of air-sensitive compounds with emphasis on the use of Schlenk-line techniques and inert atmosphere dry-boxes.
- Synthesis and characterization of bulk and nano-materials, including hydrides, oxides and chalcogenides with controlled chemical compositions and morphologies using hydrothermal, solid-state, solution, hydrothermal and solvothermal techniques.
- Structural characterization of molecules and materials by X-ray and neutron diffraction techniques; extensive experience with powder and single-crystal structure refinement.

- Gibbs Free Energy Minimization calculations using *FactSage* to elucidate reaction kinetics as well as thermodynamics of bulk and nanoscale complex metal hydrides.
- Instrumental analysis: hydrogen desorption/absorption kinetics and pressure-composition-isotherms measurements using Sievert's and PCT instruments, ^{1}H, ^{13}C, ^{11}B, ^{27}Al NMR, TGA/TDA/MS, DSC, FTIR, UV-VIS, LC-MS, GS-MS, HPLC, UV-VIS, TEM, SEM, EDS, RGA.
- Computer skills: *Software* – ChemDraw, EndNote, Photoshop, Corel; *Structural refinement* – SHELXTL, PLATON, MERCURY, JADE, NANO-Solver; *Databases* – CSD, ICSD, SciFinder.

HONORS AND AWARDS

U.S. Department of Energy Hydrogen Program "Special Recognition Award" for the achievements of the Metal Hydride Center of Excellence team, June 2010
Welch Fellowship, Department of Chemistry, Rice University, May 2006-August 2007
Civilian Research and Development Foundation Research Award, 2006
NSF-NATO Postdoctoral Fellowship Award, May 2005 – May 2006
Moldovan Prize for Young Scientists in the field of Science and Technology, 2004
Young Scientist of the Year Research Award, Chisinau, Republic of Moldova, 2003
European Rare Earth and Actinide Society Travel Award, Geneva, Switzerland, 2003
Scholarship for Academic Excellence, Chisinau, Moldova, 1996

AFFILIATIONS

American Chemical Society
Materials Research Society
American Association for the Advancement of Science
International Association for Hydrogen Energy
New York Academy of Sciences
European Rare-Earth Actinide Society

PROFESSIONAL SERVICE

Proposal Review: *DOE, NSF, CRDF, INTAS, SCOPES*
Journal Review: *Journal of the American Chemical Society*, *Chemical Communications*, *Chemistry of Materials, Journal of Materials Chemistry, Inorganic Chemistry, Journal of Physical Chemistry, Energy & Environmental Science, New Journal of Chemistry, CrystEngComm, European Journal of Inorganic Chemistry, Journal of Coordination Chemistry, Inorganic Chemistry Communications, Journal of Cluster Science, Journal of Molecular Structure, International Journal of Hydrogen Energy, Microporous & Mesoporous Materials, Crystal Growth & Design*

PUBLICATIONS

Published more than 70 articles in peer-reviewed journals, 2 book chapters and 7 patens.