MIRNA RESAN FRANJIC

4355 Renaissance Dr #306, San Jose, CA 95134, U.S.A.
Phone: (++1) 408 449 5936, (++1) 408 857 4711
E-mail: mirna_resan@yahoo.com, mirna.resan@gmail.com

OBJECTIVE

- A Research and/or Development position requiring extensive experience in the development and investigation of novel inorganic or organometallic materials with practical application.

HIGHLIGHT OF SKILLS

- Extensive experience in the characterization of inorganic and organometallic materials
- Broad knowledge of diverse preparation of inorganic and organometallic compounds
- Strong background in thermal and x-ray diffraction analysis
- Proven track record in instrument modification and design
- Excellent writing and presentation skills

EDUCATION

- M. S. in Industrial Chemistry, GPA: 3.71/4, University of Central Florida, USA, 2004.
  Thesis: "The effects of various catalysts on the hydrogen release and uptake characteristics of $LiAlH_4$ and $NaAlH_4$"
  Adviser: Dr. Michael D. Hampton

- Diploma (B. S.) in Chemistry, GPA: 3.23/4, Faculty of Science, University of Zagreb, Croatia, 2001.
  Thesis: "Mixed hexanuclear complexes of niobium, tantalum with molybdenum and aliphatic nitriles"
  Advisers: Dr. Ivan Basic and Prof. Marina Cindric

Additional Training:

- Short course: Scanning Electron Microscopy and X-ray Microanalysis, AVS The Science & Technology Society, Orlando, March 12, 2002.

RESEARCH EXPERIENCE

2001- 2004: Master's Research, Chemistry Department, University of Central Florida, Orlando, FL
Adviser: Dr. Michael D. Hampton

- Improved dehydriding properties of $LiAlH_4$ and $NaAlH_4$ by ball milling and doping with various catalysts for potential hydrogen storage use.
- Characterized dehydriding/rehydriding properties of doped $LiAlH_4$, $NaAlH_4$, and MgH_2, and various alloys by using DSC coupled with pressure measurement, and XRD.
- Synthesized and characterized magnesium alanate for potential use as hydrogen storage material.
- Analyzed various moisture sensitive, organometallic compounds for use in hydrogen recovery.
- Designed and built high-pressure cells equipped with pressure transducers for use in the differential scanning calorimeter.

Equipment Supervisor - full operation, consultancy services, training, and maintenance for SETARAM DSC 111, Rigaku X-ray Diffractometer Multiflex, and Labconco Protector Controlled Atmosphere Glove Box.

Graduate Teaching Assistant -Organic Lab Techniques I, Analytical Chemistry Lab

- Assisted students with laboratory procedures and taught them to properly use the equipment.

Division of Material Chemistry, Rudjer Boskovic Institute, Croatia
1999-2000: Diploma Project
Advisers Dr. Ivan Basic and Prof. Marina Cindric

- Synthesized and analyzed twelve new mixed hexanuclear complexes of niobium, tantalum with molybdenum and aliphatic nitriles.

1998: 2 months Research Project
Advisors: Prof. Dubravka Matkovic Calogovic and Dr. Ivan Basic

- Prepared and analyzed superconductive ceramics, such as $YBa_2Cu_3O_{7-\delta}$.

EXPERIMENTAL AND COMPUTER SKILLS

- **Laboratory:**
  Instrumental: DSC, TGA, XRD, FTIR, AA, MS, GC, GC/MS, NMR, UV/VIS, titrations, and quantitative and qualitative analysis.
  Techniques: dry-box, high-vacuum manifold and Schlenk lines, mechanical alloying, extractions, inorganic and organometallic synthesis.
- **Computer:** Photoshop, Origin, Sigma Plot, MathCAD, FORTRAN, and Basic.
- **Languages:** Fluent in English and Croatian, basic knowledge in Italian and French, can understand Russian scientific literature.

AWARDS AND ACTIVITIES

- Outstanding Graduate Student Paper Award, Florida Academy of Sciences, the 2004 Annual Meeting at the University of Central Florida, Orlando.
- Outstanding Graduate Student Award, Orlando Section American Chemical Society, 2003.
- Outstanding Graduate Student Paper Award, Florida Academy of Sciences, the 2003 Annual Meeting at the University of Central Florida, Orlando.
- Member of American Chemical Society
- Active member of Astronomical Society Zagreb and International Meteor Organization, 1993-1999.

PUBLICATIONS

[1] Mirna Resan, Michael D. Hampton, Janice K. Lomness, Darlene K. Slattery, "The effects of various catalysts on the hydrogen release and uptake characteristics of $LiAlH_4$", *International Journal of Hydrogen Energy, in press (available online).*

[2] Mirna Resan, Michael D. Hampton, Janice K. Lomness, Darlene K. Slattery, "Effect of Ti_xAl_y catalysts on hydrogen storage properties of $LiAlH_4$ and $NaAlH_4$", *International Journal of Hydrogen Energy, in press (available online).*

[3] Dorian Cauceglia, Michael D. Hampton, Janice K. Lomness, Darlene K. Slattery, and Mirna Resan, "Hydrogen uptake characteristics of mechanically alloyed Ti–V–Ni", *Journal of Alloys and Compounds, submitted.*

[4] Darlene K. Slattery, Michael D. Hampton, Janice K Lomness, Nahid Najafi-Mohajeri, Mirna Franjic, "Hydrogen Storage Using Complex Hydrides", Preprints of Symposia - American Chemical Society, Division of Fuel Chemistry (2003), 48(1), 277-278.

PRESENTATIONS

[1] Mirna Franjic, Michael D. Hampton, Janice K. Lomness, Darlene K. Slattery, "Effect of Ti_xAl_y Catalysts on Hydrogen Release Characteristics of $LiAlH_4$ and $NaAlH_4$", Florida 80th Annual Meeting and Exposition (FAME) of the American Chemical Society, Orlando, May 6 - 8, 2004.

[2] Mirna Franjic, Michael Hampton, Janice Lomness, and Darlene Slattery, "Effect of Ti_xAl_y Catalysts on Hydrogen Storage Properties of $LiAlH_4$ and $NaAlH_4$", 68th Annual Meeting of the Florida Academy of Sciences, Orlando, FL, March 12 – 13, 2004.

[3] Michael D. Hampton, Darlene K. Slattery, N. Najafi-Mohajeri, Mirna Franjic, and Janice K. Lomness, "Complex Hydrides as Hydrogen Storage Media", Invited Speaker, Symposium P1, "Hydrogen Electrochemistry and Generating Systems", 203rd Meeting of the Electrochemical Society, Paris, France, April 27 – May 2, 2003.

[4] Darlene K. Slattery, Michael D. Hampton, Janice K. Lomness, Nahid Najafi-Mohajeri and Mirna Franjic, "Hydrogen Storage Using Complex Hydrides", Proceedings of the 225th National Meeting of the American Chemical Society, New Orleans, LA, March 24 – 27, 2003.

[5] Mirna Franjic, Janice Lomness, Jason Gilbert, Michael Hampton, and Darlene Slattery, "Effect of Ti Catalyst on Hydrogen Storage Properties of $LiAlH_4$", 67th Annual Meeting of the Florida Academy of Sciences, Orlando, FL, March 21 – 22, 2003.

[7] Jason Gilbert, Janice Lomness, Mirna Franjic, Michael Hampton, and Lucille Giannuzzi, "A Study of the Effects of Mechanical Milling Conditions on Hydrogen Interaction Characteristics of Mixtures of Titanium, Magnesium, and Nickel", 67th Annual Meeting of the Florida Academy of Sciences, Orlando, FL, March 21 – 22, 2003.

[8] M. D. Hampton, L. A. Giannuzzi, D. Herley, J. Gilbert, J. K. Lomness, and M. Franjic, "Effect of Fluoride Solutions on Interaction of Magnesium-Nickel Alloy With hydrogen", 223rd National Meeting of the American Chemical Society, Orlando, FL, April, 2002.

[9] Mirna Franjic and Tihana Fuss, poster "Preparation of supraconducting oxide $YBa_2Cu_3O_{7-\delta}$", 16th Croatian Meeting of Chemists and Chemical Engineers, Split, Croatia, February 1999.