

2013 Thanksgiving Potluck

AMRI faculty, students and staff joined the Chemistry Department on Friday, November 22, 2013, to celebrate the spirit of Thanksgiving. Everyone gathered in the Chemistry lounge and enjoyed a potluck style dinner including the traditional turkey as well as various international dishes brought by graduate students. Thanks to all who contributed to making this event a tasty success!



Nice variety of traditional American and International fare.

THE DIRECTOR'S CORNER

As we approach the beginning of a new year, I want to thank all of our faculty, students, and staff for their hard work during this year, and to encourage you to keep up the good work. We also look forward our next Annual AMRI Review which will take place on February 27, 2014, and to the prospect of new grants which will expand the scope of our research in the areas of materials science. I wish all of you a safe and happy holiday season.

- - Leonard Spinu



Attendees enjoy the tasty treats.



Warm regards to **Dr. Abdul Faisal Alobaidij** for his contributions to AMRI as a visiting scholar. Dr. Faisal came from the University of Technology in Baghdad, Iraq. He worked in Dr. Weillie Zhou's lab on the synthesis of metal oxide nanowires by methods such as Hydrothermal and Chemical Vapor Deposition (CVD) etc. for their potential application in gas sensors and energy harvesters.

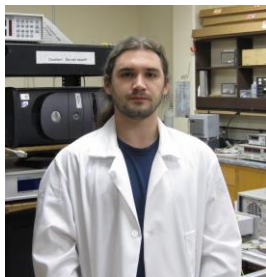
2013 AMRI Christmas Party

AMRI faculty, students and staff gathered on Wednesday, December 18, 2013, to celebrate Christmas. The AMRI conference table was filled with a variety of party foods and desserts. Thanks to all who brought a dish and helped make the event a success!



Attendees enjoying the festivities

AMRI Graduate Student Completes Doctorate



Congratulations are in order to AMRI Graduate student, **Andrei Diaconu**, who successfully completed his doctoral studies. Dr. Diaconu's dissertation title is "Ultra-low Temperature Measurements of London Penetration Depth in Iron Selenide Telluride Superconductors." He has accepted an Assistant Professor position at "Stefan cel Mare" University in Suceava, Romania.

Recent Publications

"Cu₂ZnSnS₄ Nanoplate Arrays Synthesized by Pulsed Laser Deposition with High Catalytic Activity as Counter Electrodes for Dye-sensitized Solar Cell Applications" Sarah Wozny, Kai Wang and Weillie Zhou, *J. Mater. Chem. A*, 2013, 1, 15517-15523.

"Controlling Pore Geometries and Interpore Distances of Anodic Aluminum Oxide Templates via Three-Step Anodization," Jin-Hee Lim and John B. Wiley* *J. Nanoscience Nanotech.* (accepted)

"High Yield Solvothermal Synthesis of Magnetic Peapod Nanocomposites via the Capture of Preformed Nanoparticles in Scrolled Nanosheets," Shiva Adireddy, Cecilia E. Carbo, Yuan Yao, Jose M. Vargas, Leonard Spinu, and John B. Wiley* *Chem. Mater.* **2013**, 25, 3902.
<http://dx.doi.org/10.1021/cm402352k>

"First-order reversal curves enhance understanding of nanoscale magnetic materials", Brad C. Dodrill, and Leonard Spinu, *MRS Bulletin*, 38, 892, 2013
<http://dx.doi.org/10.1557/mrs.2013.271>

"Magnetics with a twist", Leszek Malkinski, *Magnetics Technology International*, 8, 2013.
<http://viewer.zmags.com/publication/17fde0ad#/17fd e0ad/10>

"Magnetometry measurements", Leonard Spinu, Brad C. Dodrill, Cosmin Radu, *Magnetics Technology International*, 62, 2013.
<http://viewer.zmags.com/publication/17fde0ad#/17fd e0ad/64>

Recent Presentations

Core/shell Nanowire Arrays with Type II Heterojunction for Three-Dimensional Photovoltaic Device Fabrication" Weillie Zhou, TACT 2013 International Thin Film Conference, Oct.5-9, 2013 Taipei, Taiwan (Invited)

"Three Dimensional Nanostructures for Next Generation Devices", Weillie Zhou, College of Electrical Engineering & Computer Science, National

Taiwan University of Science and Technology,
Taipei, Taiwan, Oct.8, 2013 (Invited)

“Three Dimensional Nanowire Arrays for Chemical and Biological Detections”, Weilie Zhou and Timothy Lagan, 2013 NanoTechnology for Defense Conference, Nov.4-7, Tucson, AZ

“Ferromagnetic Resonance Critical Curves for Interacting Magnetic Nanowire Arrays”
D. Cimpoesu, J. Ding, L. Stoleriu, A. Adeyeye, A. Stancu, and L. Spinu. Presentation at the 58th MMM-2013 Conference, Denver, CO, 4-8 November, 2013

“Hysteretic Effect in Si-Based Diode with Embedded BTO Ferroelectric Nanoparticles” R. Eskandari. Poster presentation at the MRS Fall 2013 Conference, Boston, MA, December 2, 2013.

“Building Metal-Nonmetal Layers within Perovskite Hosts,” M. Dariush Montasserasadi, Léa Gustin, Elisha Josepha, and John B. Wiley, Materials Research Society, Boston, MA, Dec. 1-Dec 6, 2013.

“Synthesis of New Multiple Layered Dion-Jacobson Perovskites,” Léa Gustin, Jérôme Lefebvre, Clare Davis-Wheeler, Vân Vĩ, Amy K. Pressley and John B. Wiley, Materials Research Society, Boston, MA, Dec. 1-Dec 6, 2013.

“Structural Variation in Bimetallic Transition Metal Nanowires and Core-shell versus Alloy Structures as a Function of Membrane Pore Diameter,” Jagnyaseeni Tripathy, Shankar Khanal, Jose Vargas, Shiva Adireddy, Leonard Spinu, and John B. Wiley, Materials Research Society, Boston, MA, Dec. 1-Dec 6, 2013.

“Peapod Nanocomposites: Directed Capture of Preformed Nanoparticles in Scrolled Nanosheets,” John Wiley. Tulane University, New Orleans, Nov. 25, 2013, Hosted by Prof. Janan Jayawickramarajah. (Invited)

“Peapod nanocomposites,” John Wiley. Xavier University, New Orleans, Oct 22, 2013. Hosted by Xavier Undergraduate Chemistry Club. (Invited)

Grants

Development of High Power Density, Lightweight Thermoelectric Metamaterials for Energy Harvesting, PI: P. Garrity (Loyola), UNO PI: K.L.Stokes, \$74,523 total, \$37, 256 UNO, NASA, October 2013-September 2014.

New Orleans Regional Collaborative (NORC) for STEM Retention, PI: A. Sunda-Meya (Xavier), UNO PI: K.L. Stokes, NASA, \$500,000 total, \$78,300 UNO, January 2014 – August 2015.

Membrane-supported Thermoelectric Devices for Payload Cooling: Materials Synthesis and Measurement, Small Business Innovative Research contract from Nanohmics, Inc., Austin TX funded by Air Force Office of Scientific Research, PI: K.L. Stokes, \$24,981, September 2013-April 2014.

Scientific Ballooning and High-Altitude Measurements: LaACES Program for Undergraduates at UNO, Louisiana Space Consortium (LaSPACE)/NASA, \$7,025, PI: K.L. Stokes, August 2013-August 2014.

Enhancement of LaSPACE Research and Educational Opportunities at UNO, Louisiana Space Consortium (LaSPACE)/NASA, PI: K.L. Stokes, \$24,566, August 2013-August 2014

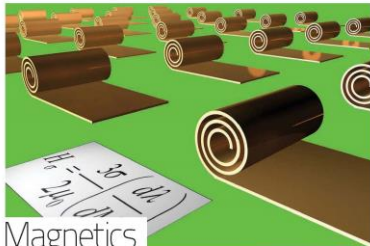
Other News

Former AMRI Postdoctoral Research Associate, **Dr. Jose Marcelo Vargas**, accepted a new position in his home country of Argentina. He will be in a permanent research position at the Resonance Laboratory of the National Atomic Energy Commission, in Rio Negro, Bariloche, where he will be able to conduct his own research projects. We thank Jose for all of his work here at AMRI, and wish him well in his new position.

A provisional U.S. patent application for **Weilie Zhou, Zhi Zheng** and **Jiajun Chen**, *Direct Synthesis of TiO₂ Nanorod Array on Titanium Substrate*, Serial number 61/882,110

MAGNETICS

TECHNOLOGY INTERNATIONAL

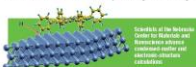


Magnetics with a twist

Researchers at the University of New Orleans have pioneered a way to realize highly sophisticated 3D functional magnetic micro- and nanostructures to be formed by bending and twisting flat film patterns



Two records of the magnetic structure in a 3D structure of a magnetic material for a magnetic field and a magnetic field



Structure of the magnetic field in a 3D structure of a magnetic material for a magnetic field and a magnetic field

THE WORLD'S LEADING GLOBAL REVIEW DEDICATED TO SHOWCASING THE LATEST DEVELOPMENTS IN ADVANCED MAGNETICS AND MAGNETIZED PRODUCTS

Dr. Leszek Malkinski's research was featured on the cover of *Magnetics Technology International* magazine.

Dr. Leonard Spinu also has an article in the issue. The link to the magazine is <http://www.ukipme.com/pub-magnetics.php>

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