AMRI NEWSLETTER

Advanced Materials Research Institute

Volume 13, Issue 4 **http://www.uno.edu/amri** **December 2015**

THE DIRECTOR'S CORNER

Greetings in the New Year! I hope this newsletter finds everyone in healthy and creative spirits. As 2015 winds down and comes to a close, 2016 is gaining quite a bit of momentum. On February 4, we will hold our Annual Mardi Gras Review for the 19th time since AMRI's inception in 1998. Faculty researchers and students will gather at the University Center on campus to present technical accomplishments and new scientific insights gained since the last review. Some exciting new developments are taking place--AMRI recently received permission from the University's administration to search for a new Materials Chemist faculty position, which will help strengthen the Institute. Also, renovations on the science building have begun and will include a new roof, new air conditioning system, and replacement of a series of fume hoods in the AMRI laboratories. The AMRI FACS--Fabrication, Analysis, and Consulting Services are now available for outside users and researchers to utilize. More information is available online at http://www.uno.edu/amri/amri-facs/. This issue of the newsletter highlights several accomplishments contributing to AMRI's momentum in the New Year. First, on the research front, Dr. Weilie Zhou received a patent for the development of a highly sensitive and selective sensor. Also, we received a donation from Pierre Champagne, who is helping AMRI to kick start its fundraising efforts. AMRI is certainly off to a great start, and I hope we can continue moving in this direction as the year progresses.

--***John B. Wiley***

Pierre Champagne visits AMRI

Dr. John Wiley recently hosted Pierre Champagne at the AMRI laboratories on Wednesday, January 5, 2016. Mr. Champagne toured the AMRI facilities and gave Dr. Wiley valuable input on ideas for reaching out to former students and staff affiliated with AMRI as well as building a network of support for AMRI. Mr. Champagne, a UNO Alumni and employee at AT&T, is quite active in Alumni Affairs. Recently he donated funds to the AMRI foundation and is now serving as a viable resource for ideas on how to raise more funds. In addition to his contribution, his employer, AT&T, plans on matching his donation.

US Patent Awarded to AMRI Researchers

Dr. Weilie Zhou, along with former AMRI Graduate Students, Jiajun Chen and Kai Wang, was recently awarded a patent for creating a highly sensitive and selective sensor that can detect certain chemicals. The selectivity of the sensor is created by well aligned nanowire arrays coated with different metal oxides, such as SnO_2, In_2O_3, and WO_3. The sensor, which was first developed with research supported by DARPA federal grant HR0011-07-1-0032, can potentially be used in chemical engineering, environmental monitoring, medical diagnostics, industrial safety, and public security. Dr. Zhou continues this project currently with a federal grant funded by the Defense Threat Reduction Agency (DTRA).

Annual AMRI Mardi Gras Review Coming Soon

The Annual AMRI Mardi Gras Review will take place on Thursday, February 4, 2016 from 8:00 am until 5:00 pm at the Innsbruck Suite at the University Center on campus. AMRI faculty, researchers and students will contribute to a combination of oral presentations and a poster session as an overview of the AMRI programs. Notable technical accomplishments and new scientific insights gained since the last review will be highlighted. There will be a social held during the poster session. No registration fee will be charged for this meeting.

AMRI Contributes at "Get To Know UNO" Day

The University of New Orleans organized an open house this last fall in order to attract prospective students. "Get to Know UNO" took place in the fitness center gymnasium on a Saturday morning, November 21, 2015. The academic departments and organizations showcased their missions and available programs. Poncho DeLeon, John Wiley, and Weilie Zhou set up the AMRI banner and a table with information and giveaways, and welcomed interested students. Dr. Wiley reported more students attending the event as compared to last year. There will be a spring open house -- "Explore UNO" as well on Saturday, February 27, 2016 from 10:00 am to 2:00 pm in the University Center.

Poncho DeLeon and Weilie Zhou man the AMRI table at "Get to Know UNO Day" in the Fitness Center Gym.

Dr. Weilie Zhou and Poncho DeLeon set to answer questions.

Dr. John Wiley, the Director of AMRI speaks with an interested student.

UNO Hosts Annual Space Day

For the second year in a row, UNO held “Space Day” where middle-school students were invited to participate in hands-on demonstrations of science at work and a poster competition displaying the future of space travel. Over 160 students from six local schools helped make the event a major success. Kevin Stokes and John Wiley engaged students with models of chemicals and visual demonstrations of special properties that materials can have.

Kevin Stokes demonstrates unique material properties, UNO Space Day

John Wiley explains a chemical model to middle-school students, UNO Space Day

New Faces at AMRI

AMRI welcomes Jeremy Li and Noah Haines, undergraduate students at UNO. Both students will be a part of Dr. Weilie Zhou’s research team.

Recent Publications

J. Hu, J. Y. Liu, D. Graf, S. M. A. Radmanesh, D. J. Adams, A. Chuang, Y. Wang, I. Chiorescu, J. Wei, L. Spinu, and Z. Q. Mao, "π Berry phase and Zeeman splitting of Weyl semimetal TaP," *Scientific Reports*, vol. 6, p. 18674, 2016 *(Nature Publishing Group)*.

S. Akbarian-Tefaghi, E. Veiga, G. Amand, and J.B. Wiley, “Rapid Topochemical Modification of Layered Perovskites via Microwave Reactions,” *Inorg. Chem.* 2016 (in press). DOI: 10.1021/acs.inorgchem.5b02514

T. Rostamzadeh, S. Adireddy, X. Zhang, B. Koplitz, D.B. Chrisey, and J.B. Wiley, "Rapid Large-Scale Synthesis of Vanadate Nanoscrolls with Controllable Lengths," *ChemNanoMat* 2016, 2, 54-60. DOI: 10.1002/cnma.201500183.

I. Gudyma, A. Maksymov, and L. Spinu, "Size effects in spin-crossover nanoparticles in framework of 2D and 3D Ising-like breathing crystal field model," *Appl. Surf. Sci*., vol. 352, pp. 60-65, 2015.

Recent Presentations

"From Layers to Scrolls – Layer Construction and Peapod Formation through the Manipulation of Niobium Oxides" John B. Wiley American Ceramics Society, EMA2016, Orlando Florida, January 22, 2016 (invited).

"Formation of Highly-Ordered Molybdenum Oxide Nanosheets," Taha Rostamzadeh, Kyle Riché, and John B. Wiley, Materials Research Society, Boston, MA, Dec., 2015.

"UNO-AMRI High School Student Summer Program" presented to the Greater New Orleans Business Roundtable (GNOBR), Jan. 28, 2016, invited (Host: Alan Neesley).

"Wiley Group Research 2015," Honors Class Presentation for A&S 2999 UNO, Sept. 29, 2015 (hosted by Prof. Mostofa Sarwar).

"Thermally-induced layer compression in the topochemically-prepared $FeLa_2Ti_3O_{10}$" Lea Gustin, Yoshiteru Hosaka, Tomoko Aharen, Cédric Tassel, Yuichi Shimakawa, Hiroshi Kageyama, and John Wiley PacifiChem 2015, Honolulu Hawaii, Dec. 17-19, 2015.

Other Notable Contributions

John Wiley served as co-organizer of "From Pnictides to Perovskites: Impact of Local Structure in Solid State Chemistry," with Hiroshi Kageyama (Kyoto University) and Brendan Kennedy (Univ. Sydney), PacifiChem 2015, Honolulu Hawaii, Dec. 18-20, 2015.

Would you like to help support AMRI programs and research?

Consider making a donation to the AMRI UNO Foundation Account.

To donate, simply click on the link, and choose AMRI under designation:

http://www.unoalumni.com/cos-giving

AMRI NEWSLETTER

- - a publication of the
Advanced Materials Research Institute,
College of Sciences,
University of New Orleans
New Orleans, LA 70148
Phone: (504) 280-6840 /
Fax: (504) 280-3185
E-mail address: amri@uno.edu
www.uno.edu/amri
Compiled by: Jennifer Tickle,
Research Associate II