



Monthly Newsletter for February 2012

a n o e l e c t r o n i c s
R E S E A R C H I N I T I A T I V E

Dr. Jeffrey Welser, Director

NRI Review Season 2012

SAVE THE DATE!

The Center Reviews for 2011 may be done, but we've got 2012 lined up already!



MIND Onsite Review: August 14, 15 & 16 (including a Workshop) at McKenna Hall, Notre Dame.



SWAN Onsite Review: September 12 & 13, following TECHCON, at The Commons at the J. J. Pickle Research Center, Austin.



INDEX Onsite Review: Wednesday and Thursday, September 19 & 20 at CSNE at SUNY-Albany, Albany, NY.



WIN Onsite Review: Thursday, October 4 at UCLA, Los Angeles, CA.



NRI Annual Review: Tuesday, Wednesday & Thursday, November 6, 7 & 8 in the Washington D.C. area.

NRI Community Upcoming Events



DAC 2012

The Design Automation Conference (DAC) is the premier event for the design of electronic circuits and systems, and for EDA and silicon solutions. Now in its 49th year, DAC features a wide array of technical presentations, as well as more than 200 of the leading electronics design suppliers in a colorful, well-attended trade show that, literally, attracts stakeholders from around the world. The call for contributions can be found at: <http://www.dac.com/call+for+contributions.aspx>

When: June 3-7, 2012

Where: Moscone Center, San Francisco, CA

Abstract Deadline: CLOSED

Please click for [Registration, Hotel Logistics and Technical Program information](#).



NRI Community Upcoming Events (*cont'd*)



70th Device Research Conference

For the last seven decades, the Device Research Conference has brought together leading scientists, researchers, and graduate students from varied disciplines in academia and industry to share their latest research and discoveries in the field. The university setting of the conference encourages open technical discussion on recent breakthroughs and advances in device research, and provides a great atmosphere for social events. The technical program consists of invited, oral, and poster presentations. In addition, the conference will hold three evening rump sessions aimed at engaging the audience in vigorous discussions on important challenges and questions facing the device research community. The Device Research Conference has a tradition of strong graduate student participation. This is recognized by offering student travel support and a Best Student Paper Award.

When: June 18 – 20, 2012

Where: Penn State University, University Park, PA

Abstract Deadline: March 7, 2012

Please click on the link below for Registration, cost and additional information:

www.deviceresearchconference.org

NRI Calendar of Upcoming Events

February 22: [e-Workshop: Straintronics: Ultra Low-power Nanomagnetic Computing with Multiferroics](#)

March 8: Technical Program Group Meeting

March 14: Governing Council Meeting

March 27: [e-Workshop: The MacDonald Group from the SWAN Center](#)

Thank you to all the NRI PIs for their enthusiasm over the NRI e-Workshop Series, we have nearly enough for two per month this year!



New Publications

NOTE: All the NRI [Center Year-End Reports](#) are currently available on the website.

Don't forget to submit your new publications to NRI regularly – see the “University Requests” section below for more information. Following are all publications submitted since January '10, 2012. *Remember that anything marked as a Pre-Publication should NOT be shared outside of the NRI member community.*

**Pre-publication – do not distribute outside of NRI.*

WIN CENTER – 4 publications, 0 pre-pub

[*A Body-Voltage-Sensing-Based Short Pulse Reading Circuit for Spin-Torque Transfer RAMs \(STT-RAMs\)*](#)

[*Low Writing Energy and Sub Nanosecond Spin Torque Transfer Switching of In-plane Magnetic Tunnel Junction for Spin Torque Transfer Random Access Memory*](#)

[*Thermal Stability Characterization of Magnetic Tunnel Junctions Using Hard-axis Magnetoresistance Measurements*](#)

[*Investigation of Defects and Errors in Nanomagnetic Logic Circuits*](#)

INDEX CENTER – 3 publication, 4 pre-pubs

[**Klein, Anti-Klein Tunneling and Pseudo-spintronics in Graphene Heterojunctions*](#)

[**Formation and Structure of 360 and 540 Degree Domain Walls in Thin Magnetic Stripes*](#)

[**Magnetic Frustration in Circular Arrays of Dipoles*](#)

[**Electron Pumping in Graphene Mechanical Resonators*](#)

[*Scaling of the Energy Gap in Pattern-Hydrogenated Graphene*](#)

[*Connectivity of Edge and Surface States in Topological Insulators*](#)

[*Comparative Study of Magnetization Reversal Process Between Rectangular and Circular Thin Film Rings*](#)

SWAN CENTER – 1 publication, 2 pre-pubs

[**Low- K Organic Layer as a Top Gate Dielectric for Graphene Field Effect Transistors*](#)

[**In-situ Electrical Studies of Ozone Based Atomic Layer Deposition on Graphene*](#)

[*Atomic Layer Deposition of Dielectrics on Graphene Using Reversibly Physisorbed Ozone*](#)

MIND CENTER – 1 publication, 8 pre-pubs

[**Fabrication of Top-gated Epitaxial Graphene Nano-ribbon FETs Using Hydrogen-silsesquioxane \(HSQ\)*](#)

[**InGaAs/InP Tunnel FETs with a Subthreshold Swing of 93 mV/dec and I\(ON\)/I\(OFF\) Ratio near 10\(6\)*](#)

[**Wafer-scale Graphene Nanoribbon Transistor Technology*](#)

[**Direct Measurement of Magnetic Coupling Between Nanomagnets for NML Applications*](#)

[**Enhanced Permeability Dielectrics for Power Reduction in NML Circuits*](#)

[**Demonstration of Improved Heteroepitaxy, Scaled Gate Stack and Reduced Interface States Enabling Heterojunction Tunnel FETs with High Drive Current and High On-Off Ratio*](#)

[**Electric-field-assisted Deterministic Nanowire Assembly*](#)

[**Deterministic Assembly of Functional Nanostructures Using Nonuniform Electric Fields*](#)

[*Full Band Atomistic Modeling of Homo-junction InGaAs Band-to-band Tunneling Diodes Including Band Gap Narrowing*](#)



University Requests

Pub Submission: it's your duty! Please send them to [Allison](#) when you *first* send in your paper to the publication for review and she will do the rest! No usernames or passwords to remember, just attach the pub, hit "SEND" and you will be in compliance with your Center's contract. Of course, it's up to our university members to get those pubs into us so please send us your papers and presentations. We might even start a contest for most pubs!

Any student or Postdoctoral Researcher participating in SRC research is required to register for an SRC web account, whether they are directly funded by the contract or leveraged from another source. That's right, if you are an NRI supported student all you have to do is follow these simple directions on the new SRC website:

Students or Postdoctoral researchers new to SRC:

- Go to the SRC website at <https://www.src.org/app/account/sign-in/> to register for a web account including completing the academic information portion of the form. We recommend that all students upload their resume. Our member companies have recruiters that look at this site first when they have positions to fill.

Student or postdocs who have previously been on SRC research:

- Update your graduation date, advisor, research task # and resume at <https://www.src.org/app/account/edit/education/>

Please be sure *all* your NRI students and post-docs are registered on the website and that their information (particularly *graduation date*) is current. For questions or help contact leeann.clewell@src.org

Should you have any questions, ideas, information to share, website issues or just want to talk about NRI, please call or email [Allison](#) at 919-941-9433, she will be happy to help!

If you no longer are interested in receiving the NRI Newsletter, please reply to this email saying so and you will be removed from the list.