

Minnesota Microscopy Society

Local affiliate of the *Microscopy Society of America*
and the *Microanalysis Society*

Newsletter

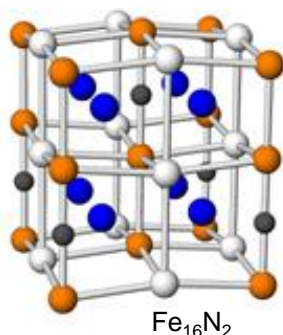
March 2013



11th Annual MinnTS (Minnesota Technical Symposium)

www.minnts.org

THIS YEAR'S TOPIC: **RENEWABLE ENERGY**



Date: Thursday, March 28, 2013

Time: 5:00 – 9:00 pm

Location: Medtronic Headquarters
710 Medtronic Parkway
Fridley, MN 55432

(I-694 and Hwy 65/Central Ave)

Parking: In attached ramp north of building

Schedule of events

- 5:00 - 6:00 Registration, social with refreshments
6:00 - 7:00 Dinner (followed by move into auditorium)
7:00 - 7:15 Welcome message, introductions (Gary Korba)
7:15 - 8:00 **Novel Iron-Nitrogen Permanent Magnet Technology – Jian-Ping Wang, Univ. of MN**
8:00 - 8:15 Break
8:15 - 9:00 **Novel Wind Turbine Technology – Matt Jore, Core Motion, Inc.**

Menu

- Herb crusted chicken with pan glaze
- Wild mushroom strudel
- Potatoes
- Steamed carrots
- Garden salad with various dressings
- Rolls and butter
- Assorted mini desserts
- Assorted soda and water

Reservations

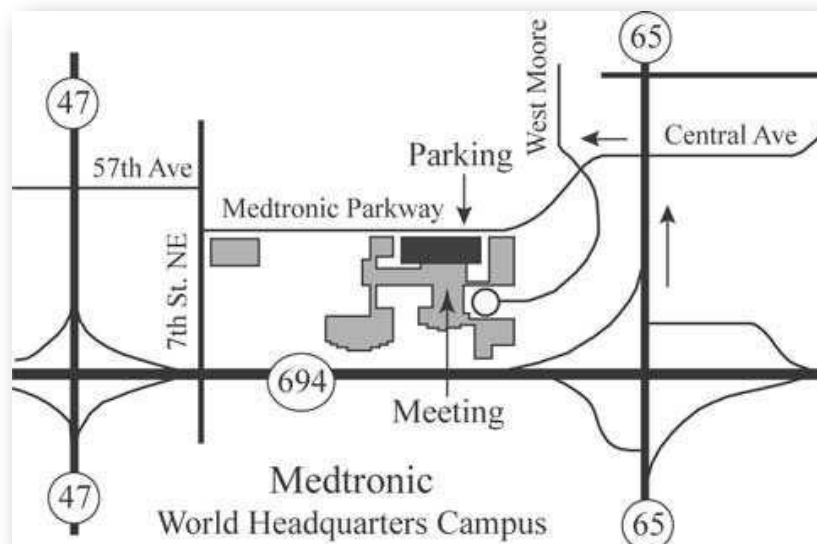
Cost for MinnTS is \$30. Reservations are being taken through **midnight on Friday, March 22** and may be made via PayPal by going to the MMS website at mnmicroscopy.org/calendar.html. Or, by phone: Bede Willenbring, H.B. Fuller Co., (651) 236-5470 (9a - 5p)

No refunds for cancellations after March 22.

MinnTS – Map and Speakers

continued

Directions



Speakers



Jian-Ping Wang, Distinguished McKnight University Professor, Electrical and Computer Engineering, University of Minnesota
Novel Iron-Nitrogen Permanent Magnet Technology

Abstract

Magnetic materials are indispensable for the information technologies, biomedical technologies, electric, electronic and automobile industries and renewable energy industries. For example, a 3MW wind turbine demands 500 pounds of state-of-art NdFeB magnet. NdFeB magnet, which possesses the highest magnetic energy product (BH)_{max} in the world, was discovered during the crisis of the supply chain of Sm and Co in 1980s. Unfortunately its energy product hasn't been much improved since the early 90s. This lecture will cover the research effort of Dr. Wang's group in the development of high performance non-rare earth magnet. In 2010, [Wang's group reported](#) a groundbreaking theory... (for full abstract, click [here](#))

Speaker Bio

Jian-Ping Wang is the director of the Center for Spintronic Materials, Interfaces and New Architectures (C-SPIN) and the associate director of the Center for Micromagnetics and Information Technologies (MINT) at the University of Minnesota. He is also a graduate faculty member of Departments of Physics, Biomedical Engineering and Chemical Engineering and Materials Science at the University of Minnesota. His current research programs focus on searching, fabricating and fundamentally understanding new nanomagnetic and spintronic materials and devices. He received his Ph.D. degree from the Institute of Physics, Chinese Academy of Sciences, in 1995. Read more about Prof. Wang [here](#).

MinnTS – Speakers

continued



Matt Jore, Core Motion, Inc.
Novel Wind Turbine Technology

Abstract

Since its formation, Core Innovation and Motion have developed a unique and proprietary platform of cost-effective permanent magnet motor and generator technologies and products that offer unprecedented energy density, and clear production, performance and cost-of-ownership advantages over competing permanent magnet and wire wound induction technologies. CORE machines are not typical permanent magnet motors and generators; they are manufactured using specially patterned and interconnected multi-layered stators made in a highly cost-effective manner using existing automated printed circuit board (PCB) manufacturing methods. This patented stator design optimizes conductors, conductor circuits, and magnetic flux while using less raw material by eliminating wire windings and iron laminations and much of the labor used to assemble the millions of motors and generators sold each year throughout the world. ... (for full abstract, click [here](#))

Speaker Bio

Matt Jore has more than 25 years of executive and technical experience in power tool and industrial markets. He is co-inventor of CORE™ technology, founder and chairman of Core Motion, Inc., which developed the proprietary CORE technology, a unique, globally-patented motor and generator technology. Read more about Matt Jore's background [here](#) and [here](#).

For more information on Core Outdoor Power, check out this *Forbes* article from Feb. 2012: [Outdoor Power Equipment Goes Gas-Free: Makes Way To Wind Energy](#)



May 3 **What:** **Spring Symposium**

Time: 7:30 am – 4:00 pm

Location: Science Museum of Minnesota
120 W. Kellogg Blvd., St. Paul, MN

Speakers: [R. Lee Penn](#) - *Cryo-TEM of nanoparticles in water*

[Wei Zhang](#) - *TEM imaging and 3D reconstruction*

Roundtable with [Lynne Osterman](#) from NanoVox/

*[Stephen Campbell](#) from the Univ of Minn./[Deb Newberry](#) from
Dakota Cty Technical College - *The Current State of Nano-
Technology (tentative)**

*[Mark Cavaleri](#) - *The Use of Analytical Centrifugation to Analyze
High Concentrations of Nanoparticles**

*[Brittany Nelson-Cheeseman](#) - *Giant Oxygen Response to
Electrostatic Inversion Symmetry Breaking Uncovered by 3-D
Electron Density Mapping**

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Minnesota Microscopy Society – Membership Form

All microscopists are urged to support their Society at one of the membership levels offered below. Often, supervisors will support MMS memberships out of their project budget because they recognize that it is a very inexpensive way to maintain and increase the skills of their microscopists. If you have been a member over the years and recognize the value of MMS to the community of microscopists it serves, consider upgrading your membership this year to the patron or sustaining level. Thank you.

Name _____ Dr Mr Ms Phone (_____) _____

Affiliation _____ Position _____

Address _____ ZIP _____

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(Newsletter notifications will be e-mailed to the address above.)

Check here if you do NOT want your name and address to appear in the Society directory.

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Student (\$5-\$9) Basic (\$10-\$24) Patron (\$25-\$99) Sustaining (≥ \$100)

Payment: Check PayPal (Please go to <http://www.mnmicroscopy.org/MMSMembership.html> to make your payment via PayPal.)

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