
Minnesota Microscopy Society

Local affiliate of the *Microscopy Society of America*
and the *Microbeam Analysis Society*



Newsletter

September 2003

Minnesota Microscopy Society - September Meeting

Thursday, September 25, 2003

"Correlative Microscopy of Nanofibers and Nanodevices"

by Dr. Phillip E. Russell

Speaker

Phillip E. Russell, Ph.D.
North Carolina State University

Location

Campus Club, 4th Floor, Coffman Union
University of Minnesota, 300 Washington Ave.
Minneapolis, MN

Schedule

Registration and Social Hour	5:30 PM - 6:30 PM
Dinner	6:30 PM - 7:30 PM
Business meeting	7:30 PM - 8:00 PM
Talk	8:00 PM - 9:00 PM

Dinner Buffet

Appetizers, Caesar salad, Chicken Marsala, Sauteed Escolar (white salmon) in pistachio oil, Penne Herbed Pasta, Rice Pilaf, Mushroom-stuffed Eggplant, Vegetables du jour, dessert buffet.

Cost of the Meeting

The cost for the meeting and dinner is \$25 for members and \$15 for students.

Reservations

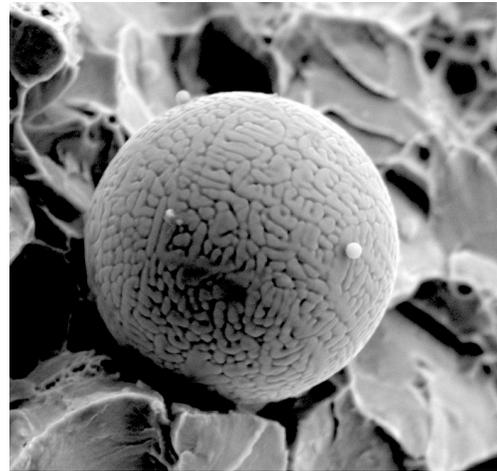
Reservations for the meeting **MUST** be made no later than **Friday, September 19**. Contact Mike Coscio at mike.coscio@medtronic.com or by phone at (763) 505-4561 to make your reservations.

Abstract

Today's microscopy and microanalysis labs offer an ever broadening array of both imaging and analytical tools. This talk will use two research topics in nanotechnology to illustrate the unique insight obtainable through the use of conventional optical and electron microscopy when combined with scanned probe microscopy (SPM) and focused ion beam (FIB) microscopy. Our research involving the growth and characterization of phosphoric acid based nanofibers began as accidental observation during AFM fluid cell microscopy. As we moved from individual nanofibers to much larger mats of nonwoven nanofiber assemblies, the use of optical microscopies, SEM/EDS, STEM/EDS and Z-contrast techniques have provided unique and valuable insight into the growth and properties of our nanofibers. A separate study involves the investigation of chemical, electrical, and structural properties of quantum well nitride based lasers. In this study, a FIB technique was developed to prepare microscopy samples from fully packaged, commercial lasers. These samples were characterized with electrical force microscopy (EFM, an SPM technique), SEM based EBIC for carrier diffusion length measurement; and scanning transmission electron microscopy (STEM) based EBIC, EDS and Z-contrast imaging. Currently, we are building a cathodoluminescence system for our STEM which will add high spatial resolution optical measurements to our correlative microscopy arsenal.

Biography

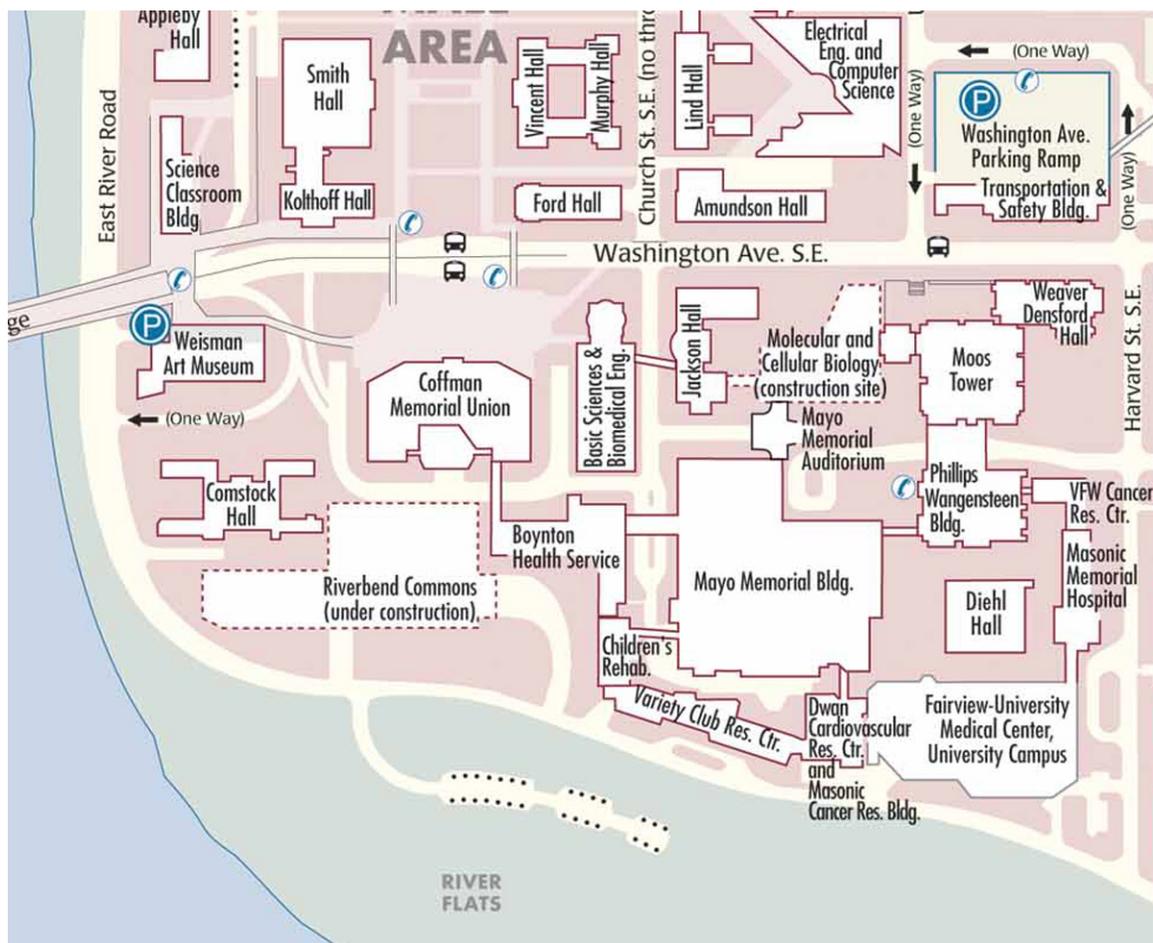
Phillip E. Russell is Professor of Materials Science and Engineering, and Director of the Analytical Instrumentation Facility at North Carolina State University. For the year 2003, he is on academic leave from NCSU as Research Professor of Physics at Appalachian State University. He also serves as Director of Materials Analytical Services, a private microscopy and microanalysis company. Prior to joining NCSU, he obtained his Ph.D. from the University of Florida and held positions at Solar Energy Research Institute, and at JEOL. Prof. Russell has been active in local, national, and international microscopy and microanalysis societies for three decades; teaching numerous courses in SEM, SPM, FIB.



Iron oxide nodule in incinerator ash.

Coffman Union Location Map

Parking closest to Coffman Union can be found in the Washington Ramp or the Weisman Art Museum Ramp. Parking is no longer available behind Coffman; that ramp is presently under reconstruction.



Upcoming MMS Meetings

November 20, 2003

Biotechnology / Biomaterials

February 19, 2004

Forensic Medicine / Biological Microscopy

March 18, 2004

Joint Meeting with ASM

May 7, 2004 - Spring Symposium

Our Digital World

Get Your News Published in the MMS Newsletter

The Minnesota Microscopy Society is always looking for contributions to its newsletter. Contributions can be either news items or short articles on a technical topic that would be of general interest to the Society's members. Does your company have a new product or a new sales representative for this area? If you have news that would be of interest to MMS members, send it to the Newsletter Editor, Peter McSwiggen, McSwiggen & Associates, 2855 Anthony Lane South, Suite 1B, St. Anthony, MN 55418, or e-mail it to: PMcS@McSwiggenAssoc.com.

Three more newsletters will be published this year. The deadlines for submitting articles are:

October 20, 2003
January 19, 2004, and
April 1, 2004

MMS Board Policies

A few issues have come to the attention of the Board that suggest the need for clarification regarding some of the Board's policies. If any members have questions about these policies, they should direct their inquiries to the President or one of the Board members listed on page 5.

Policy 1. News and Announcements

Section 1. Newsletter

News and announcements of interest to the Society may be published in the Society's newsletter (both paper version and Web site). To submit news, contact the Newsletter Editor. Submission deadline will be posted in the first newsletter of the year. Newsletters will provide the basic information answering who, what, when, where, why, along with contact information. It is the Newsletter Editor's discretion to decide what is printed and when.

Section 2. Submission Eligibility

Any regular, student, or corporate member of the Society is eligible to submit news to the newsletter.

Policy 2. Membership Information

The Society directory and related information will not be given out or sold to other groups or organizations. Current members can access the member database through the Society's Web site.

Upcoming Project Micro Events

Project Micro will be out in force again this year. There are a number of events on the calendar. These include Super Science Saturday (October 4, 2003), Science-Fest (February, 2004), and Mathematics Family Fun Fair (March, 2004). If you have any questions or would like more information, contact Ann Palmer at palme003@umn.edu.

Sustaining Corporate Members

Sustaining members are the backbone of financial support for the Society. These members make it possible for the Society to support Project Micro and to cover many expenses of the regular meetings and the Spring Symposium. We greatly appreciate the continued support of these individuals and corporations. To become a Sustaining Member, complete and return the MMS membership form at the end of the newsletter.

Stephen Borden	Torvac, Inc.	612-377-2077
Peter Braverman	Cadmet Inc.	800-543-7282
John Crowe	Denton Vacuum Inc.	612-377-2077
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John Treadgold	LEO Electron Microscopy Inc.	630-497-8166
Joe Ullmer	EDAX / TSL	937-294-3811
Steve Ziegler	Digital Instruments	512-912-1615

If any Sustaining Members are missing from this list, *please* contact either: Jason Heffelfinger (763-514-1021, jason.r.heffelfinger@medtronic.com) or Peter McSwiggen (612-781-2282, PMcS@McSwiggenAssoc.com).

MMS Patron Members

The Minnesota Microscopy Society would like to express a sincere thanks to our Patron Members. These members provide financial support to the organization above the standard membership fee. This type of added support makes it possible for MMS to maintain its financial well being. To become a Patron Member, complete and return the MMS membership form at the end of the newsletter.

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Barry Carter, University of Minnesota, Mpls
Michael Coscio, Medtronic Inc., Minneapolis
Kevin Cowden, Medtronic Inc., Brooklyn Center
Stan Erlandsen, Cell Biol. & Neuroanatomy, U of M
Kathryn Hanna, College of Biol. Science, U of M
Stuart McKernan, University of Minnesota, Mpls

Susan Okerstrom, Medtronic Inc., Brooklyn Center
Ann Palmer, Dept. of Pediatrics, U of M
Jeff Payne, 3M Company, St. Paul
Bede Willenbring, H.B. Fuller Co., St. Paul

MMS BOARD and OFFICERS 2003-2004

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Other Board Members:

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Your MMS Annual Membership dues are payable in September/October!

All microscopists are urged to support their Society at one of the membership levels offered below. The more dues-paying members we have, the more likely we are to attract sustaining corporate memberships which form the financial backbone of our Society. 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 _____

Indicate the method by which you would like to receive the Newsletter: mail _____ e-mail/web _____ both _____

E-mail address _____

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

Area of interest: Bioscience _____ Materials Science _____ SEM _____ TEM _____ X-ray _____

Basic \$10 _____ Patron \geq \$25 _____ Corporate Sustaining \$100 _____ Student \$5 _____**Make checks payable to MMS and mail to our treasurer:****Bede Willenbring, MMS Treasurer, 4763 Decatur Ave. North, New Hope, MN 55428-4402**

Minnesota Microscopy Society
Peter McSwiggen, MMS Editor
McSwiggen & Associates
2855 Anthony Lane South, Ste B1
St. Anthony, MN 55418

September 25, 2003**Correlative Microscopy of
Nanofibers and Nanodevices**

Forwarding and Address
Correction Requested