



MICROANALYSIS
Society

MicroNews

Newsletter of the Microanalysis Society

SPRING 2011

WWW.MICROANALYSISOCIETY.ORG

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President's Corner



MAS
President
John Henry
Scott

Dear Fellow MAS Member,

There have been many exciting changes in our society since the Fall 2010 issue of MicroNews, and this is a great opportunity to bring you up to date on how our society is evolving and what MAS Council has been doing during the winter months. Perhaps the most important announcement is that we have changed our name! While we are still MAS, the membership voted during the last election to adopt our new name: "MAS, the Microanalysis Society". This change was not undertaken lightly and follows many long discussions and debates. Because of our proud beginnings and historical association with electron probe microanalysis, some members felt we should not drop the word "Microbeam" from our title. But many more members recognized that MAS has grown over the decades to encompass much beyond EPMA, and that the core values of our society are careful quantitative analysis at microscopic and nanoscopic length scales using an ever-growing list of analysis techniques. As we draw like-minded researchers from the

scanned probe microscopy and atom probe tomography communities, our new name presents a welcoming message, and I think it more accurately reflects what we value most in MAS.

The same winter election brought changes to the MAS Executive Council. Congratulations to John Mansfield our new President-Elect. I have known John for many years and have great respect for his technical skill as a microanalyst. More importantly, John has the leadership skills and personality needed for the job, and I feel MAS will be in excellent hands when I turn over the beads of office during our summer meeting in Nashville. Congratulations also to Jeff Davis, our new MAS Treasurer and to our incoming Directors John Donovan and Rhonda Stroud. These new Executive Council members were immediately put to work beginning January 5th when we held the first of three winter council teleconferences that we conducted in Q1 of 2011 to address MAS business; the most recent one was held March 5th. Ian Anderson and Paul Carpenter should be commended for their strong leadership of the Strategic Planning and Topical Conference Committees. MAS is fortunate to have two past Presidents remain so actively involved in defining the future of MAS. Council also appointed Vin Smentkowski to be our MAS Program Co-Chair for the M&M 2012 meeting, and Emmanuelle Marquis to be the M&M 2013 Co-Chair. It is not too early to begin planning MAS technical symposia for the 2012 summer

meeting in Phoenix, and I know Vin would be pleased to hear from MAS members who have suggestions for technical content (his contact information is on the MAS website). Finally, past Director Lucille Giannuzzi has agreed to take over as MAS Sustaining Members Chair following Lou Ross's planned departure in June. Lou has served MAS with distinction in several roles over the years, and he brought that same drive to the job of SM Chair.

Council tackled another important task during the winter months: deliberation and planning for the next steps in our very successful Topical Conference (TC) program. Council voted to undertake three TCs in the near future, approved detailed budgets for the upcoming meetings, and instructed the organizers to move forward with the execution phase of these conferences. First up is Cathodoluminescence 2011 in October, co-organized by Colin MacRae and Marion Stevens-Kalceff from Australia and Scott Wight from NIST. This meeting will be co-organized by our sister society AMAS, the Australian Microbeam Analysis Society. After the fall 2011 CL meeting, MAS will hold two TCs in the Spring of 2012: (1) Microanalytical Reference Materials to be held in May in Golden, CO and (2) Electron Backscatter Diffraction (EBSD) to be held in late June in Pittsburgh, PA. Heather Lowers and Andy Deal are the lead organizers for these two TCs, and both promise to address technical aspects of microanalysis important

Continued on page 3

Letter from the Editor by Heather Lowers

Hello MASers. This brief issue is full of important information, including the voter approved changes to the Society name and Bylaws changes and our newly elected officials (pages 4 & 5, respectively).

Before you know it, we'll be packing for the annual meeting in Nashville. Another brief issue of MicroNews is planned for mid-July to inform you of important events in Nashville. I hope to be able to provide you with a list of potential discussion items prior to the

annual business meeting.

If you wish to contribute to the next issue, please send your materials to hlowers678@hotmail.com prior to July 4. I am seeking a member profile, images, and tip and tricks. The more contributions I receive, the more MicroNews reflects our membership and keeps the material fresh.

Do you remember the six categories of Trivial Pursuit? Look for fun Nashville trivia throughout in each of the six categories.

G—geography

E—entertainment

H—history

AL—art & literature

SN—science & nature

SL—sports & leisure

Meet Vincent Smentkowski

I am a surface chemist/analyst and I have been working in the characterization organization at the General Electric Global Research Center (GE-GRC) in Niskayuna, NY since 1997. For the past 9 years, my emphasis has been on ToF-SIMS analysis (<http://www.youtube.com/watch?v=7xINTQoapS0>). In 2010 I spent a significant amount of time using ToF-SIMS to analyze solar materials. ToF-SIMS has also proven to be a very valuable technique for MEMS, sensing, polymeric, biomedical, x-ray detector, battery, and alloy samples. I routinely find unexpected species/contaminants in the samples I analyze by ToF-SIMS. An important aspect of my work involves the use of multivariate statistical analysis (MVSA) tools in order to perform a rapid, unbiased, and complete analysis of the full ToF-SIMS data sets. MVSA algorithms allow for the identification of species association in complex multiphase materials. I am also working with external laboratories in order to evaluate advanced microstructural characterization techniques such as Atom Probe Tomography and Helium Ion Microscopy and show the benefits these techniques have for GE materials. When I first arrived at GE, I performed AES, XPS, SEM, and EBSD analysis while making the case to purchase our first ToF-SIMS instrument. Since I work in an industrial characterization laboratory, I can not say much about the GE materials, however I am able to talk about, publish, and present novel data analysis protocol. I have co-authored 77 external papers, 75 internal GE reports and I hold 6 US patents. I have also presented numerous contributed and invited talks.

Before arriving at GE, I held a post-doc position at Argonne National Laboratories where I was part of a team that designed and built ion scattering instrumentation in order to perform in-situ, real-time, surface analysis of thin films during deposition at mTorr pres-

Meet Vin Smentkowski con't



**MAS MEMBER VINCENT
(VIN, VINCE)
SMENTKOWSKI**

...sures; a project which resulted in a 1997 R&D100 Award. I obtained my Ph.D. in physical chemistry under the guidance of Prof. John T. Yates, Jr., the title of my thesis was "Surface Science Investigation of Tribologically Important Systems – Iron and Diamond".

Since 2006, I have co-chaired the bi-annual Surface Microscopy and Microanalysis in Materials and Biological Systems symposia at the Microscopy and Microanalysis meetings. I will be the MAS co-chair for the 2012 Microscopy and Microanalysis meeting. In addition to MAS, I am also involved in the American Vacuum Society (AVS). I am the 2011 chair of the Applied Surface Science Division (ASSD) and I am was co-chair of the recent Surface Analysis 2011 meeting which took place in Albany NY April 11-13, 2011 (<http://divisions.avs.org/assd/SurfaceAnalysis2011/default.html>). I also served as the founding chair of the Hudson Mohawk Chapter of AVS (2009-2010). In 2010 I was named a fellow of AVS for "For exceptional contributions in the field of industrial surface analysis, including multivariate statistical analysis of ToF-SIMS data".

Outside of work, I enjoy custom woodworking, spending time outdoors, and vacationing with my family. I have two daughters ages 6 and 10 – both are figure skaters hence my wife and I spend four or more nights a week at local ice skating rinks. Over the past few years, I have been learning the science behind figure skate sharpening and

last year I purchased equipment to sharpen figure skates and was trained in the use of the equipment. I now sharpen a few pair of skates/week. In 2011, I will be chairing the Albany Figure Skating Club's USFS Competition.

Vincent Smentkowski
Surface Analyst/Chemist
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President's Corner con't

to MAS members. As always, additional information about upcoming MAS meetings and events is available on the MAS website.

Lastly, MAS's largest and most important meeting of the year is approaching rapidly in the form of Microscopy & Microanalysis 2011. Several members of MAS Council will be headed to Nashville in late March to participate in the Program Production Meeting (PPM) and to scope out venues for summer MAS meetings and events, including our flagship networking event, the Wednesday night MAS Social. While many of us attend M&M each year because of the high quality of the technical presentations and the trade show, let me close by reminding MAS members that we also conduct the MAS Business Meeting at M&M, your best opportunity to interact directly with us and to express your opinions and learn how to become involved in deciding the future of MAS. I hope to see you there.

Sincerely,

John Henry J. Scott
MAS President, 2010-2011



In 1819, the first commercial oil well was placed on this river which flows through Nashville on its way to join the Ohio River in southwestern Kentucky.

The Cumberland River.

We are now the Microanalysis Society!

Membership Approves Historic Bylaws Revision

by Ian M. Anderson, MAS Strategic Planning Chair

In November, the MAS membership overwhelmingly approved a historic revision of the Society's Bylaws. Along with sundry miscellaneous revisions to fine tune the working of the Society, the 2010 revision established two major changes that promise to affect the identity and operation of the Society for years to come: the name of the Society was changed from the "Microbeam Analysis Society" to the "Microanalysis Society" to better reflect the increasing diversity of techniques practiced by the membership; and the term of the President was changed from one year to two years, in order to provide better continuity and better networking with our sister societies of the International Union of Microbeam Analysis Societies (IUMAS) worldwide. This article will attempt to set the renaming of the Society in historical context, outline what the Society leadership has done in the months since the passing of the Bylaws revision, and to give members a sense of what's on the horizon.

The "Microanalysis Society" is the third name of the Society that was established by filing of articles of incorporation with the State of New York on July 31,

1968 as the "Electron Probe Analysis Society of America" or EPASA. The purpose of the Society set forth by the eight founding members of the Executive Council was "to advance the state of scientific knowledge, and to disseminate to the scientific community and the public-at-large the advances made and the knowledge obtained, concerning the principles, instrumentation and application of electron probes, and related instruments." However, within five years, the scope of activities of the membership had diversified beyond this original statement of mission. The technical program of the Eighth National Conference on Electron Probe Analysis, held in New Orleans in August of 1973, led off with a plenary session on the "Ion Microprobe," the precursor of the modern secondary ion mass spectrometer. Effective January 1, 1974, the name of the Society officially became the "Microbeam Analysis Society" or MAS, to reflect this broader scope of activities. Now, thirty-seven years later, in order to better represent the current scope of activities, the membership has chosen to change the name of the Society once again: although we will continue to be known by the acronym "MAS," we are now

the "Microanalysis Society." In many ways, this change has been a long time coming: "Microanalysis" is the name that our Society has brought to our two very successful joint ventures with the Microscopy Society of America, our annual meeting and journal, for the past fifteen years. The new Society name also better represents the current scope of activities of the membership, which comprised quantitative microanalytical techniques that do not rely on focused beams; notable examples include energy-filtered transmission electron microscopy and atom probe tomography, techniques that exemplify the newly expressed purpose of the Society "to advance and disseminate knowledge concerning the principles and applications of microanalysis down to the atomic level."

During the first few months of the year 2011, MAS Council has taken steps to revise the public face of the Society to reflect our new identity as the Microanalysis Society. A minor revision to the Society logo was approved by MAS Council at its 2011 Winter Council Meeting and has been incorporated into all society materials, including the Society web

Bylaws Revision Con't

site, letterhead, and promotional materials for Microscopy & Microanalysis 2011 in Nashville. We are now in the process of legally filing the change of the Society name with the State of New York to complete this transition. Logistical repercussions of the transition to a two-year Presidency are also being worked out, beyond the transitory provisions that were included (as Article XI) in the 2010 revision of the Bylaws. For example, the MAS President hosts the Presidents of our sister societies in Australia (AMAS) and Europe (EMAS) at Microscopy & Microanalysis in alternate years (odd and even, respectively), but these societies reciprocate by inviting the MAS President to biennial meetings that both take place within a few months of one another (during the first half of oddly numbered years). These logistics of these exchanges have now been worked out in a way that best achieves the purpose of the exchanges: to allow the strengthen-

ing of ties and the pursuit of joint initiatives among AMAS, EMAS and MAS.

In many ways, membership approval of the Bylaws revisions marks just the beginning of a process. At the Winter Council meeting where the slightly modified Society logo was approved, MAS Council unanimously agreed that this logo should serve as an interim solution, and that a modern new logo should be designed to accompany the Society name change. The Strategic Planning Committee is working with Council to find ways to engage the general membership in a process that will ultimately lead to the devising of this new logo. We'd like to hear from all of our members what to them constitutes the best of the Society – past, present, and future. For example, how did you get involved in the Society? Is there a moment in our Society's history that strikes you as the best that the Society represented? Among the events

and programming that the Society sponsors, is there one that particularly stands out? What are your future hopes as we move forward as a Society? The answers to these questions are meant to get past the various instruments, techniques, and applications of our work to address the values of our Society and its members. Please reflect on these questions and discuss with your colleagues. The MAS leadership will be looking to hear from you in the coming months.



What was the original name of the Grand Ole Opry?

The WSM Barn Dance.

Membership News by Dan Kremser

In November, voting was held via on-line electronic ballot for the election of MAS Officers for terms beginning in 2011, along with several Bylaws changes. Forty-two percent of membership participated in the election process. A President-Elect (John Mansfield), new Treasurer (Jeff Davis) and two directors (Rhonda Stroud and John Donovan) were elected. Further, all three proposed Bylaws revisions passed with overwhelming support margin (society name change, executive council restructuring, and miscellaneous revisions).

Please keep your email address current. Feel free to contact Membership Services via email at dkremser@columbus.rr.com with any membership changes, concerns or comments.

If you haven't renewed your 2011 membership dues, please do so by using the following link: <http://www.microprobe.org/forms/2011-dues/member-application-renewal>

See you in Nashville!

M&M 2012 Planning

For those of you that do not know me, my name is Vin Smentkowski and I am the Microanalysis Society (MAS) co-chair for the 2012 Microscopy & Microanalysis meeting. I would appreciate any comments/suggestions you have about M&M 2012, including:

- * new symposia (as well as symposia which should not be considered in 2012),
- * new symposium chairs (also names of people who you feel should not be chairs),
- * reorganization of past symposia,
- * other items you liked (or disliked) at past MM meetings.

The input you provide will help shape the M&M 2012 meeting. Please keep in mind that most of the 2012 meeting logistics will be finalized in the next month or two (before June 2011) hence the sooner you can provide input, the better!

Sincerely,

Vincent Smentkowski

Surface Analyst/Chemist

General Electric Global Research Center smentkow@ge.com www.edisonsdesk.com

Have a logo idea?

With the approved name change, MAS council feels now is the time to rebrand our Society with a new modern logo that reflects the breadth of techniques used by MAS members. If you have an idea for a logo please email Ian Anderson, Chair of the Strategic Planning Committee, ian.anderson@nist.gov, subject line "MAS logo."



This American Statesman born near Nashville defeated James Polk in 1834 to become Speaker of the House.

John Bell

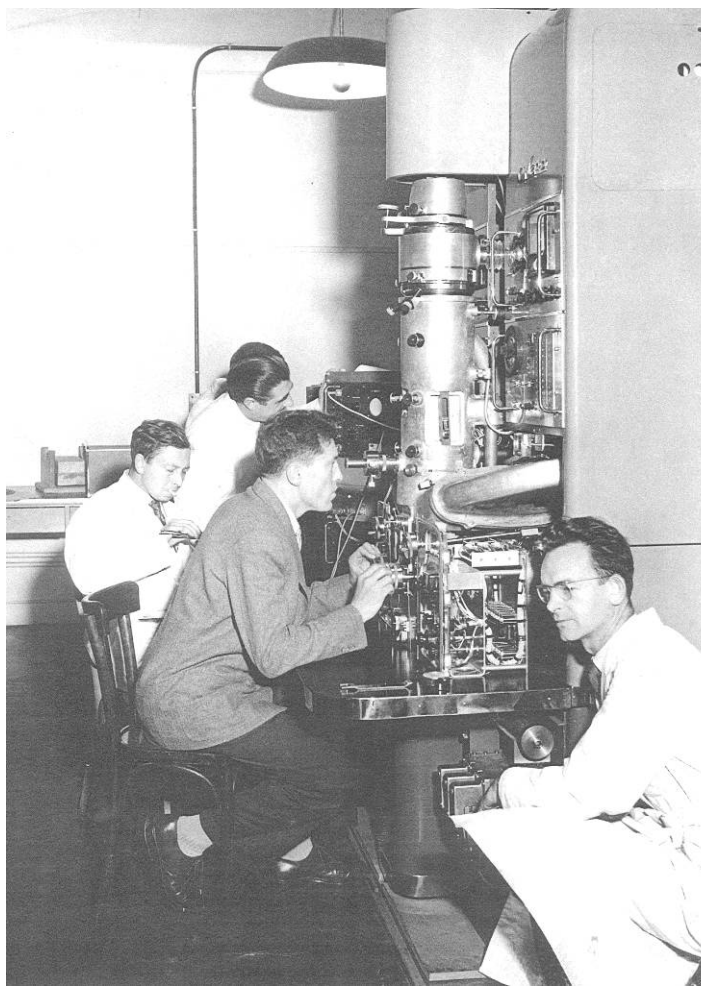
Archivist's Corner

by John Fournelle

This year marks the 60th anniversary of publication of Raimond Castaing's important thesis and which MAS is marking with a symposium in his honor at M&M 2011. I have been researching the early history of EPMA and in April 2010, my wife and I had lunch with Castaing's daughter and her family at their Paris apartment. She is a retired high school physics teacher. One brother is a radiologist and the other a physics professor. She shared several unpublished photos of her father, one shown here, a candid laboratory scene with Raimond in a pose many of us can relate to, concentrating on moving the sample under the beam. When I commented on the cigarette smoking in the lab, she laughed and said her father would also have a cigarette except for the fact that he needed both hands to run the probe. There is no date on the photo, and it resembles in many features the commercial Cameca SX85 (1958), and so would perhaps be from a few years prior.

It is not commonly known, but Castaing, as well as his advisor, the famous crystallographer André Guinier, made several trips to the US in the early 1950s. These occasions provided for important "technology transfer" to American scientists. Many of us have read of the interaction between Guinier and Castaing. It turns out that both Guinier and one of the early American probers (and founders of EPASA, MAS's precursor) Verne Birks, attended the 8th Pittsburgh Conference on X-ray and Electron Diffraction in November 1950 and were in the X-ray session. Guinier spoke on refinements in the design of rotating anode X-ray tubes and Birks spoke on developments in XRF--use of vacuum plus wider 2d crystals "to

extend the range of analysis from Ca down to the next row of lighter elements". One may guess that Birks may have learned here, perhaps over beer or cocktails, about the work Castaing was finishing at that moment. Then in late October and early November of 1951, Castaing came to the U.S. and introduced the electron probe for the first time to the American scientific audience.



As he relates in his historical article in "The Green Book" (1991 volume edited by Heinrich and Newbury), he gave a short talk, squeezed in at the last minute, to the American Physical Society's meeting in Chicago; a few days later, he spoke at the Symposium on Electron Physics held at the

National Bureau of Standards in DC upon the occasion of its 50th anniversary. Interestingly, a week later, the 9th annual meeting of EMSA was held in Philadelphia, but Castaing was not listed in the program and presumably was not present. Thereafter, it appears that Guinier and Castaing made a point of highlighting applications of this new instrument. In September, 1952, the American Chemical Society organized a

Symposium on X-rays as an Analytical Chemical Tool at Atlantic City, NJ. Castaing and Guinier presented "Point-by-Point Analysis by X-ray Spectroscopy", while Birks spoke on XRF. At the March 1953 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, the record indicates a talk by Guinier and Castaing "Point by Point Chemical Analysis by X-ray Spectrography" and it appears that Guinier may have been on sabbatical at the University of Illinois, Urbana. Castaing mentioned that Birks visited him at his lab and brought a sample to analyze with the probe; Birks said it was a "tungsten alloy" but Castaing found it was totally different and said he suspected this was a test to see exactly how good this new instrument was. The record suggests that the next time Castaing visited the US was in February 1958, when Verne Birks organized with Office of Naval Research support, a Conference on Electron Probe Micro-analyzers in Washington, DC, at the National Academy of Sciences. Castaing was the keynote

speaker, and among the 46 invited participants were Peter Duncumb and David Wittry, who had each built their own instruments for their Ph.D. projects, starting in 1953. In an upcoming "Archivist's Corner" we will learn a lot more about the work of David Wittry, and why Pasadena played a significant role in the history of EPMA in North America.

MAS Upcoming Topical Conferences



Cathodoluminescence, CL 2011

October 24-28, 2011
NIST, Gaithersburg, MD
co-organized by [AMAS](#)

Registration is now open!

Check the website for up-to-date information

<http://www.microbeamanalysis.org/topical-conferences/cl-2011/index.htm>



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Want to participate in the round robin?

Contact Heather Lowers (hlowers@usgs.gov), Brian Gorman (bgorman@mines.edu), or Alan Koenig (akoenig@usgs.gov)

for more information.



EBSD 2012

June 19-21, 2012 Carnegie Mellon University

Contact Andrew Deal (deal.andrew@gmail.com), Steven Claves (steven.claves@unnpp.gov), Desmond Moser (desmond.moser@uwo.ca), or Yoosuf Picard (ypicard@cmu.edu)

for more information.



This multimedia artist was born in Nashville in 1937 and in 2003 was awarded the Lifetime Achievement Award by the National Academy of Design. Two notable installations include The City of Chicago (1967) and Ruckus Manhattan (1975).

Red Grooms

Sustaining Members

Three years has flown by since I was appointed Sustaining Member Chair when Cathy Johnson was nominated as President of MAS. Cathy was a hard act to follow after being Chair since 1996. I will be stepping down a few months early, coinciding with my retirement at the University of Missouri on May 31st after 29 years. It's been a great ride, both in Columbia and with the Microanalysis Society. What a great organization and community of people!

My goal was to increase our Sustaining Membership after the economic downturn and mergers. Although we lost a few along the way, we are hovering around 30, having added several new members in the last two years, the latest one being CAMCOR just the other day. Hopefully our Sustaining Membership will grow as our leadership continues to move in new directions while holding true to our roots.

I will be turning the reins over to Lucille Giannuzzi, an excellent choice by Council with her industry connections and knowledge. Lucille was a Society Director of MAS as well as serving MAS in many other many capacities. Good Luck Lucille!! I won't say goodbye yet as, if elected, I would like to continue on as an Emeritus Member. Thanks to everyone who has made my association with MAS a wonderfully rewarding professional and personal life experience.

Lou Ross

Sustaining Member Chair, 2008-2011



This Nashville astronomer born in 1857 had a star named after him.

Edward E. Barnard (Barnard's Star).



Thoroughbreds such as Secretariat can trace their bloodline back to this first American winner of the English Derby in 1881 bred at Nashville's Belle Meade Plantation.

Troquois

Thanks to Our Sustaining Members

Sustaining Members consist of individuals, companies, or corporations wishing to advance the interests and objectives of the society; up to two individuals designated by the sustaining member are deemed regular members of the society.



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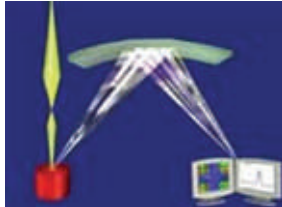
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- ⇒ [EMAS 2011](#) (Angers, France, from May 15-19, 2011)
12th European Workshop on Modern Developments and Applications in Microbeam Analysis
- ⇒ [Southeastern Microscopy Society](#) (Atlanta, GA, from May 18-20, 2011)
- ⇒ [IUMAS-V](#) (Olympic Parktel, Seoul, South Korea, from May 22-27, 2011)
5th Meeting of the International Union of Microbeam Analysis Societies, held in conjunction with the 8th International Symposium on Atomic Level Characterization for New Materials and Devices (ALC '11)
- ⇒ [Lehigh Microscopy School](#) (Bethlehem, PA, from June 5-16, 2011. Contact Sharon Coe, 610-758-5133, Sharon.coe@Lehigh.edu)
Introduction to SEM and EDS for the New Operator-June 5, 2011
Scanning Electron Microscopy and X-ray Microanalysis-June 6-10, 2011
Scanning Probe Microscopy: From Fundamentals to Advanced Applications-June 13-16, 2011
Problem Solving with SEM, X-ray Microanalysis, and Electron Backscatter Patterns-June 13-17, 2011
Quantitative X-ray Microanalysis: Problem Solving using EDS and WDS Techniques-June 13-17, 2011
Scanning Transmission Electron Microscopy: From Fundamentals to Advanced Applications-June 13-17, 2011
Focused Ion Beam (FIB): Instrumentation and Applications-June 13-16, 2011
- ⇒ [Microscopy & Microanalysis 2011](#) (Nashville, TN, from Aug 07-11, 2011)
The annual meeting of the Microanalysis Society in conjunction with the Microscopy Society of America
- ⇒ [Cathodoluminescence 2011](#) (NIST, Gaithersburg, MD, USA, from Oct 24-28, 2011)
An MAS Topical Conference, co-organized by AMAS
- ⇒ [Microscopy & Microanalysis 2012](#) (Phoenix, AZ, from Jul 29, 2012 to Aug 02, 2012)
The annual meeting of the Microanalysis Society in conjunction with the Microscopy Society of America.
- ⇒ [Microanalytical Reference Materials 2012](#) (Colorado School of Mines, Golden, CO, from May 15-17, 2012) An MAS Topical Conference
- ⇒ [EBSD 2012](#) (Carnegie Mellon University, Pittsburg, PA, USA, from June 19-21, 2012)
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