

table of contents preview

Omaha Imaging Symposium

Omaha Imaging Symposium—Introduction

New Horizons in Research Imaging, Papers from the Eighth Omaha Imaging Symposium, April 2012

Richard Hallworth

Extravascular CX3CR1⁺ Cells Extend Intravascular Dendritic Processes into Intact Central Nervous System Vessel Lumen

Deborah S. Barkauskas et al.

Endoscopic Fluorescence Lifetime Imaging for *In Vivo* Intraoperative Diagnosis of Oral Carcinoma

Yinghua Sun et al.

The Conserved Tetrameric Subunit Stoichiometry of Slc26 Proteins

Richard Hallworth et al.

Biological Applications

Examination of Biologically Active Nanocomplexes by Nanoparticle Tracking Analysis

Nikolai Nikitin et al.

Chromatic Aberration-Corrected Tilt Series Transmission Electron Microscopy of Nanoparticles in a Whole Mount Macrophage Cell

Jean-Pierre Baudoin et al.

Multiple Morphologies of Gold-Magnetite Heterostructure Nanoparticles are Effectively Functionalized with Protein for Cell Targeting

Evan S. Krystofiak et al.

Identification of Ferrous-Ferric Fe₃O₄ Nanoparticles in Recombinant Human Ferritin Cages

Michael G. Walls et al.

Zyxin Regulates Cell Migration and Differentiation in EMT during Chicken AV Valve Morphogenesis

Na Li et al.

Selection and Tuning of a Fast and Simple Phase-Contrast Microscopy Image Segmentation Algorithm for Measuring Myoblast Growth Kinetics in an Automated Manner

Pierre-Marc Juneau et al.

Adsorption Kinetics of DPPG Liposome Layers: A Quantitative Analysis of Surface Roughness

Andreia A. Duarte et al.

Feline HER2 Protein Expression Levels and Gene Status in Feline Mammary Carcinoma: Optimization of Immunohistochemistry (IHC) and *In Situ* Hybridization (ISH) Techniques

Maria Soares et al.

Review Article

Molecular Mechanisms of Asymmetric Division in Oocytes

Shao-Chen Sun and Nam-Hyung Kim

Blood Capillary Length Estimation from Three-Dimensional Microscopic Data by Image Analysis and Stereology

Lucie Kubinová et al.

Characterization of Rotating Gantry Micro-CT Configuration for the *In Vivo* Evaluation of Murine Trabecular Bone

Luke Arentsen and Susanta Hui

In Situ Study of Live Specimens in an Environmental Scanning Electron Microscope

Eva Tihlaříková et al.

EBSD Special Section

EMAS Special Section—Introduction

EBSB at the 10th EMAS Regional Workshop on Electron Probe Microanalysis of Materials Today: Practical Aspects

Romano Rinaldi

US EBSD Special Section—Introduction

Electron Backscatter Diffraction Special Section

Andrew Deal

Electron Backscatter Diffraction in Conservation Science: Phase Identification of Pigments in Paint Layers

A. Gambirasi et al.

The Backscatter Electron Signal as an Additional Tool for Phase Segmentation in Electron Backscatter Diffraction

E.J. Payton and G. Nolze

Inherited Fabric in an Omphacite Symplectite: Reconstruction of Plastic Deformation under Ultra-High Pressure Conditions

Florian Heidebach and Michael P. Terry

Azimuthal Projections: Data Rotation and Projection Switching in Real Time

Gert Nolze

Analysis of Chemical Changes and Microstructure Characterization during Deformation in Ferritic Stainless Steel

Andrés Núñez et al.

In Situ Electron Backscatter Diffraction Investigation of Recrystallization in a Copper Wire

François Brisset et al.

Effect of Crystallographic Orientation on Subcritical Grain Boundary Cracking in a Conventionally Cast

Polycrystalline Nickel-Based Superalloy

Kameshwaran Swaminathan et al.

Materials Applications

Characterization of a Cold-Rolled 2101 Lean Duplex Stainless Steel

Paola Bassani et al.

Characterization of Dual-Phase Steel Microstructure by Combined Submicrometer EBSD and EPMA Carbon Measurements

Philippe T. Pinar et al.

Preparation of Samples with Both Hard and Soft Phases for Electron Backscatter Diffraction: Examples from Gold Mineralization

Angela Halpenny et al.

Color Metallography and Electron Microscopy Techniques Applied to the Characterization of 413.0 Aluminum Alloys

George Vander Voort et al.

Materials Applications

In Situ Electron Energy-Loss Spectroscopy in Liquids

Megan E. Holtz et al.

Scanning Confocal Electron Energy-Loss Microscopy Using Valence-Loss Signals

Huolin L. Xin et al.

Identifying and Correcting Scan Noise and Drift in the Scanning Transmission Electron Microscope

Lewys Jones and Peter D. Nellist

Quantification and Morphology Studies of Nanoporous Alumina Membranes: A New Algorithm for Digital Image Processing

Khoobaram S. Choudhari et al.

Characterization of Inertial Confinement Fusion (ICF) Targets Using PIXE, RBS, and STIM Analysis

Yongqiang Li et al.

Alternative FIB TEM Sample Preparation Method for Cross-Sections of Thin Metal Films Deposited on Polymer Substrates

Felipe Rivera et al.

Universal Variable Brightfield-Darkfield Contrast: A Variant Technique for Improved Imaging of Problematic Specimens in Light Microscopy

Timm Piper and Jörg Piper

Book Reviews

Optical Imaging Techniques in Cell Biology, by Guy Cox

Amasi Periasamy

Diagnostic Electron Microscopy. A Practical Guide to Interpretation and Technique, John W. Stirling, Alan Curry, and Brian Eyden (Eds.)

Josep Lloreta-Trull



Dear Abbe

Dear Abbe,

I have a coworker (whom I'll refer to as "Bill") who can't seem to stop talking like a pirate and keeps a parrot in the lab! It wouldn't be so bad, but he insists on keelhauling his fellow technicians and giving no quarter as he takes over bench space. The parrot sits on his shoulder while he uses the TEM. Consequently we find bird droppings all over the view port and keyboard. The rascalion's shoulder is almost always stained and reeks of parrot guano. And the ghastly parrot spouts pirate curses on everyone and uses foul language at inopportune moments. I keep finding cracker crumbs in the oddest locations. Bill keeps going off with "Shiver me timbers" this and "Splice the main brace" that. It gets rather annoying since we aren't all piratey and don't know the lingo. Last Wednesday Bill came in bathed in an aura of rum and complaining about some strumpet when he "cracked Jenny's tea cup!" He's even begun dressing the part and wearing an eye patch. Says it helps to see in the darkened room when viewing samples. At least we've made lemonade from the lemons by claiming his missing eye as a handicap for EEO purposes. I'm afraid he may start bringing in cutlasses and cat-o-nine tails next. Our technicians are threatening to mutiny. What can be done?

Hornswaggled in Hampton

Dear Hornswaggled

Two words: "Parrot Stew."

Dear Abbe,

I'm attempting to train students to section using glass knives before I let them move up to a diamond knife. Our problem is they are dull from the start and won't cut the tissue samples. Any advice on how to get sharper glass knives?

Dull in Dartmouth

Dear Dullard,

I have no time for your petty glass knife problems involving dull students! So I enlisted one of the grad students in a friend's lab to address your issues. Herr Brooks, who apparently spends way too much time sniffing the mounting media, responded thusly: "Your first problem is that you're making your own glass knives. The only glass knives worth *ein verdammt* are shaped by the nimble hands of elf-kind from glass created by Dwarven Smiths. The best glass (as I'm sure you know) is made from the quartz mined deep below the Misty Mountains, but that source has long since been ... compromised. (Between you and me, dwarves are an obstinate bunch, and frankly they got what they deserved.) I recall a knife the elves made for my professor: *Glamrist*. Roughly translated as 'Tech clever,' and *mein godt* she was a beauty. Able to slay an orc, and then section his liver down to 40 nm thin sections for TEM. *Glamrist* saw a lot of use during a particularly disastrous road trip to a conference. Our PI was mugged in the subway, two of the undergrads were lost during a drinking contest, and the tall, shapely blonde I'd had my eye on fell for a short, hairy guy from Mississippi Tech who never bathed. Worst. Trip. Ever."

World Scientific Series in Nanoscience and Nanotechnology - Vol. 7

SCANNING PROBE MICROSCOPY FOR ENERGY RESEARCH

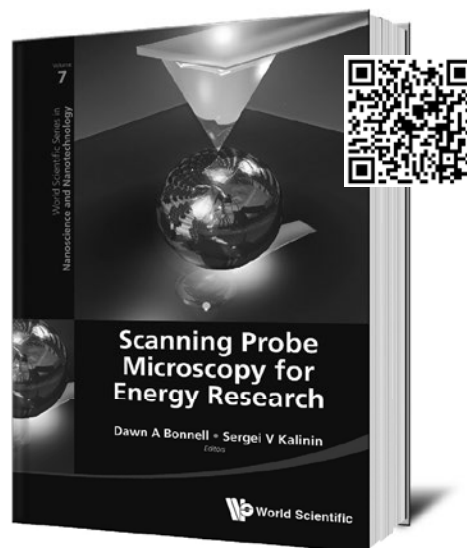
edited by **Dawn A. Bonnell** (*The University of Pennsylvania, USA*) & **Sergei V. Kalinin** (*Oak Ridge National Laboratory, USA*)

Efficiency and life time of solar cells, energy and power density of the batteries, and costs of the fuel cells alike cannot be improved unless the complex electronic, optoelectronic, and ionic mechanisms underpinning operation of these materials and devices are understood on the nanometer level of individual defects. Only by probing these phenomena locally can



Prof. Dawn A. Bonnell is elected as a Member of NAE in 2013.

we hope to link materials structure and functionality, thus opening pathway for predictive modeling and synthesis. In this volume, we provide a summary of recent advances in scanning probe microscopy studies of local functionality of energy materials and devices ranging from photovoltaics to batteries, fuel cells, and energy harvesting systems. Recently emergent SPM modes and combined SPM-electron microscopy approaches are also discussed.



Readership: Students, professionals and researchers in materials science, nanomaterials and new materials.

640pp
978-981-4434-70-6

May 2013
US\$148 £98

AD-CY-05-13-05-W



ACMM23
23rd Australian Conference on Microscopy and Microanalysis

ICONN2014
2014 International Conference on Nanoscience and Nanotechnology

2-6 FEBRUARY 2014 ADELAIDE SOUTH AUSTRALIA


The Australian Microscopy and Microanalysis Society, together with the Australian Nanotechnology Network, are pleased to present the 23rd Australian Conference on Microscopy and Microanalysis (ACMM23) and the International Conference on Nanoscience and Nanotechnology (ICONN 2014), to be jointly held at the Adelaide Convention Centre, South Australia, from 2-6 February 2014.

Call for Abstracts Open: 31st August 2013
Submission of Abstract Deadline: 30th September 2013
Notification to Authors: 31st October 2013
Early-bird registration deadline: 15th November 2013

Contact us or visit the conference website for more information
www.acmm23iconn2014.com.au
conference@aomevents.com





The International Union of Microbeam Analysis Societies



IUMAS-6
August 2-7, 2014
Hartford, CT USA

held in conjunction with



M&M 2014
MICROSCOPY & MICROANALYSIS
AUGUST 3 - 7 • HARTFORD, CT

IUMAS-6 held in conjunction with M&M 2014

Aug 4-7 • Monday through Thursday

- Symposia covering instrumentation, techniques, and applications of microscopy & microanalysis
- IUMAS banquet & MAS Social

IUMAS-6

Aug 2-3 • Saturday & Sunday

- Half-day workshops led by microanalysis experts
- Plenary session featuring the state-of-the-art of microanalysis in scientific applications areas
- IUMAS welcome reception & M&M opening reception

Sponsorship opportunities & student support available

www.iumas6.org