Volume 15 Number 6 December 2009

Microscopy Microanalysis

table of contents preview

40 Years of EDS-Special Section

Preface—40 Years of EDS

by Dale Newbury and Raynald Gauvin

Celebrating 40 Years of Energy Dispersive X-Ray Spectrometry in Electron Probe Microanalysis: A Historic and Nostalgic Look Back into the Beginnings

by Klaus Keil, Ray Fitzgerald, and Kurt F.J. Heinrich Impact of 40 Years of Technology Advances on EDS System Performance

by Jon McCarthy, John Friel, and Patrick Camus 35 Years of EDS Software by Frederick H. Schamber

Materials Science Applications

EELS of Niobium and Stoichiometric Niobium-Oxide Phases— Part I: Plasmon and Near-Edges Fine Structure

by David Bach, Reinhard Schneider, Dagmar Gerthsen, Jo Verbeeck, and Wilfried Sigle

EELS of Niobium and Stoichiometric Niobium-Oxide Phases— Part II: Quantification

by David Bach, Reinhard Schneider, and Dagmar Gerthsen

Biological Science Applications

Ultrastructural Observations Reveal the Presence of Channels between Cork Cells

by Rita Teresa Teixeira and Helena Pereira Differential Uptake and Selective Permeability of Fusarochromanone (FC101), a Novel Membrane Permeable Anticancer Naturally Fluorescent Compound in Tumor and Normal Cells

by Brian D. Furmanski, Didier Dréau, Roy E. Wuthier, and John W. Fuseler

Focused Ion Beam Applications

The Focused Ion Beam Fold-Out: Sample Preparation Method for Transmission Electron Microscopy

by Herman Carlo Floresca, Jangbae Jeon, Jinguo G. Wang, and Moon J. Kim

Book Review

Biological Low-Voltage Scanning Electron Microscopy. Edited by Heide Schatten and James B. Pawley

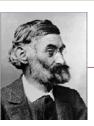
by Thomas L. Hayes

Calendar of Upcoming Meetings and Courses

Microscopy and Microanalysis website: http:journals.cambridge.org/MAM

Indexed in Chemical Abstracts, Current Contents, BIOSIS, and MEDLINE (PubMed)

MSA members receive both *Microscopy Today* and *Microscopy and Microanalysis* FREE!



Dear Abbe

Humor

Dear Abbe,

I just heard of a technique to obtain a super-resolution image from a series of low-resolution shifted images: Basically, you extract details from sub-pixel shifts in the image. My understanding is that it could be useful for microscopy, but only for under-sampled images where the limiting factor is the pixel size and not the diffraction. Is is true that you can't break the diffusion barrier with this method? Christophe in Marseille

Dear Christophe,

My answer to this can be summed up in a single acronym TANSTAAFM or "There Ain't No Such Thing As A Free Mittagessen." A high-resolution image being obtained from a bunch of images of inferior quality? That is like saying one could create a single Hedy Lamar simply by shifting around a half dozen Uma Thurmans. Not that I wouldn't mind trying this with Uma, but I just don't think that it is possible. As for breaking through the diffusion barrier, I have seen this done only once. My dear friend Johann Zöllner once drank so many Altbiers that he actually began to pee a fine Pilsner. Hmmm, I wonder if Uma would be interested in meeting Johann?

Dear Abbe,

I heard that the BBC is planning a special documentary on the history of microscopy. I was wondering if you have been contacted by them, and if so what role would you play? Curious in Curacao

Dear Curious,

doi: 10.1017/S155192950999109X

I don't know how you found out about this (all participants were required to sign a non-disclosure waiver AND do a pinky swear), but the answer is yes, and I have been offered the starring role of Antonie van Leeuwenhoek. At first I declined, but when they told me that Kate Hudson had signed on to play the part of Mrs. van Leeuwenhoek and that the screenplay called for a tender love scene in which I examine her for microscopic parasites, I could no longer demur. Regrettably, when we were two weeks into production, Ms. Hudson had to back out and was hastily replaced by comedienne Mo'Nique who had markedly less acting experience and virtually no knowledge whatsoever about the use of Rayleigh distribution of wavelengths in achromatic lens design. The program is to be released in June, but I am not happy with the outcome.

Having trouble sleeping at night worrying about technique? Can't seem to find the right words to say to your technicians? Let Abbe have a whack at it. What could go wrong? Send your posers to his assistant at jpshields@cb.uga.edu.