

# Microscopy AND Microanalysis

table of contents preview

## Electron Backscatter Diffraction Special Section

### Introduction

Introduction to Electron Backscatter Diffraction

Andrew Deal

### Review Article

A Review of Strain Analysis Using Electron Backscatter Diffraction

Stuart I. Wright, Matthew M. Nowell, and David P. Field

Pattern Center Determination in Electron Backscatter Diffraction Microscopy

Jay Basinger, David Fullwood, Josh Kacher, and Brent Adams

Influence of Crystallographic Texture on Young's Modulus of Various Alloy 82H Welds

Steven R. Claves and William J. Mills

The Microstructure and Creep Behavior of Cold Rolled Udimet 188 Sheet

C.J. Boehlert and S.C. Longanbach

Strain-Induced Selective Growth in 1.5% Temper-Rolled Fe-1%Si

Tricia A. Bennett, Peter N. Kalu, and Anthony D. Rollett

Application of Electron Backscatter Diffraction Techniques to Quenched and Partitioned Steels

Grant Thomas, John Speer, David Matlock, and Joseph Michael

An Open-Source Engine for the Processing of Electron Backscatter Patterns:

EBSD Image

Philippe T. Pinard, Marin Lagacé, Pierre Hovington, Denis Thibault, and Raynald Gauvin

## Materials Applications

Focused Ion Beam Induced Microstructural Alterations: Texture Development, Grain Growth, and Intermetallic Formation

Joseph R. Michael

Dynamical Diffraction Simulations in FePt—I

Karen L. Torres, Richard R. Vanfleet, and Gregory B. Thompson

Comparison of Simulated and Experimental Order Parameters in FePt—II

Karen L. Torres, Richard R. Vanfleet, and Gregory B. Thompson

Multifrequency Atomic Force Microscopy: Compositional Imaging with Electrostatic Force Measurements

Sergei Magonov and John Alexander

Bridging the Micro-to-Macro Gap: A New Application for Micro X-Ray Fluorescence

Jeffrey M. Davis, Dale E. Newbury, Albert Fahey, Nicholas W.M. Ritchie,

Edward Vicenzi, and Dale Bentz

Atomic-Scale Phase Composition through Multivariate Statistical Analysis of Atom

Probe Tomography Data

Michael R. Keenan, Vincent S. Smentkowski, Robert M. Ulfig, Edward Oltman,

David J. Larson, and Thomas F. Kelly

## Biological Applications

Ndc80 Regulates Meiotic Spindle Organization, Chromosome Alignment, and Cell

Cycle Progression in Mouse Oocytes

Shao-Chen Sun, Ding-Xiao Zhang, Seung-Eun Lee, Yong-Nan Xu, and

Nam-Hyung Kim

Staining of Mitochondria with Cy5-Labeled Oligonucleotides for Long-Term

Microscopy Studies

Steffen Lorenz, Stephanie Tomcin, and Volker Mailänder

Analysis of Roughness and Surface Hardness of a Dental Composite Using Atomic

Force Microscopy and Microhardness Testing

Marcos Aurélio Bomfim da Silva, Aline Barbirato Fardin, Renata Carvalho Cabral

de Vasconcellos, Lucineide de Melo Santos, Josealdo Tonholo, José Ginaldo da Silva

Júnior, and José Ivo Limeira dos Reis

Analysis of Elemental Composition of the Eggshell before and after Incubation in the

Loggerhead Turtle (*Caretta caretta*) in Oman

S.N. Al-Bahry, I.Y. Mahmoud, K. Melghit, and I. Al-Amri

Morphology of Foliar Trichomes of the Chinese Cork Oak *Quercus variabilis* by

Electron Microscopy and Three-Dimensional Surface Profiling

Ki Woo Kim, Do-Hyun Cho, and Pan-Gi Kim

## Book Review

Scanning Force Microscopy of Polymers, by Holger Schönherr and G. Julius Vancso

Paolo Samori



## Dear Abbe

Dear Abbe,

*We recently purchased a mini-SEM and are having trouble finding the parts for it. Do you have any idea where to find them?*

**Searching in Saskatchewan**

Dear Searching,

Göttlich objektiv gewebe! Mini SEMs? No wonder you are having trouble finding parts for it! I have trouble just seeing the letters on the page in my advanced age, much less looking for missing parts from a mini electron microscope. That's why I have an attractive personal assistant whom I trust explicitly. With all the advances in miniaturization, I had a bad feeling that it would someday influence microscopy. First all the samples started getting smaller and now the instrument! What's next? Micro TEMs? Nano-confocal laser microscopes? Table-top Hadron colliders? Soon we'll be developing imaging equipment to look at our microscopes! Where does it all end? Where is my nightcap?

Dear Abbe,

*What tricks/tools do people suggest for unscrewing objectives from the turret when you cannot loosen them by hand?*

**Dave from Connecticut**

Dear Dave,

Many people have ideas for removing stuck objectives from the turret. Some may suggest a rubber strap, others may say wearing finger cots helps, and a few may be so bold as to resort to a hammer and channel lock pliers. However, I use a much more satisfying method. After extensive conversations and a few Fliegender Hirsches with my good friend Al Nobel, I was able to convince him to share some experimental formulae. He was working on various types of explosive chemical combinations beyond basic dynamite. Many were precursors to C4, for example, but were never fully developed. We came up with a method of small plastic charges placed at intervals that, once set off, would create a torque in one direction thereby shearing off the offending lens. So very satisfying! Of course, Semtex is a bit more reliable than C4 in my experience. The only downside I can think of is having to remember to wash your hands thoroughly before air travel.

*Have a problem in your lab? Let Herr Abbe have a crack at it. Write to Abbe in care of his faithful assistant who can be reached at [jpshield@uga.edu](mailto:jpshield@uga.edu).*