

## From the Editor

### Eliminate Optical Microscopy



This special issue of *Microscopy Today* is devoted to light microscopy. Light microscopy is microscopy that employs light as a medium, or so I thought. Every week I see “optical microscopy” used as a synonym for light microscopy. I cannot understand the popularity of this confusing term. For people outside our field, the term “optical microscopy” must be perplexing: does it mean electron optical or light optical? My point is that we should present the techniques we use in clear unambiguous language: light microscopy, electron microscopy, scanned probe microscopy, etc. Regardless of logic, there are still strong adherents to the term “optical microscopy.”

Many reasons are given for the use of the term “optical microscopy.” Certainly “optical” makes one think of techniques other than scanned probe microscopies. Some people relate their use of “optical microscopy” to the connection with glass lenses or to the dictionary definition for “optical”: using the properties of light to aid vision. Others say that “optical” was directly related to photons before electron microscopy was invented and thus has priority.

Proponents of replacing “optical microscopy” with “light microscopy” note that physicists sometimes call the synchrotron a light source because it generates photons over a range of wavelengths. Others state that lenses and optical equations are also used to focus electrons and ions. Of course, when describing lenses for electrons, an additional modifier is used: “electron optics.” It is easy to see why some people avoid these fine distinctions and use “light optical microscopy” or LOM.

The tendency to use one term or the other may be industry- or discipline-related. Microscopists who only use light microscopy and never deal with images or maps produced by other means may have a tendency to call the technique “optical microscopy.” However, most research in the life sciences and physical sciences requires a wide range of complementary microscopy techniques. The photonics industry often, and perhaps justifiably, skips the adjective altogether and calls all work with a microscope “microscopy.” Another confusing term is “digital microscopy” that also tends to mean light microscopy, even though all microscopies now use digital technology.

One of the goals of this magazine is to make all types of microscopy and microanalysis accessible to every microscopist. To do this requires that logical terms be used to identify microscopy techniques. Another goal is to present microscopy methods to non-microscopists outside our community in a way that makes our field understandable. Thus, I vote for promoting the term “light microscopy” to refer to all magnified images made with visible, IR, or UV light.

Charles Lyman  
Editor-in-Chief

**Publication Objective:** to provide information of interest to microscopists.

*Microscopy Today* is a controlled-circulation trade magazine owned by the Microscopy Society of America that is published six times a year in the odd months. Editorial coverage spans all microscopy techniques including light microscopy, scanning probe microscopy, electron microscopy, ion-beam techniques, and the wide range of microanalytical methods. Readers and authors come from both the life sciences and the physical sciences. The typical length of an article is about 2,000 words plus figures and tables; feature articles are longer. Interested authors should consult “Instructions for Contributors” on the *Microscopy Today* website: [www.microscopy-today.com](http://www.microscopy-today.com).

ISSN 1551-9295

#### Disclaimer

The Microscopy Society of America and the editors cannot be held responsible for opinions, errors, or for any consequences arising from the use of information contained in *Microscopy Today*. The appearance of advertising in *Microscopy Today* does not constitute an endorsement or approval by the Microscopy Society of America of any claims or information found in the advertisements. By submitting a manuscript to *Microscopy Today*, the author warrants that the article is original or that the author has written permission to use copyrighted material published elsewhere. While the contents of this magazine are believed to be accurate at press time, neither the Microscopy Society of America, the editors, nor the authors can accept legal responsibility for errors or omissions.

© Copyright 2011 by the Microscopy Society of America. All rights reserved.

#### Editorial Staff

**Charles E. Lyman**  
*Editor-in-Chief*  
[charles.lyman@lehigh.edu](mailto:charles.lyman@lehigh.edu)  
(610) 758-4249

**Gennifer Levey**, *Production Manager*  
[glevy@meridianartproduction.com](mailto:glevy@meridianartproduction.com)  
(212) 780-0315

**Ron Anderson**, *Executive Editor*  
[microscopytoday@tampabay.rr.com](mailto:microscopytoday@tampabay.rr.com)

**Phil Oshel**, *Technical Editor*  
[oshel1pe@cmich.edu](mailto:oshel1pe@cmich.edu)

**Stephen Carmichael**, *Columnist*  
[carmichael.stephen@mayo.edu](mailto:carmichael.stephen@mayo.edu)

**Michael Davidson**, *Pioneers Editor*  
[davidson@magnet.fsu.edu](mailto:davidson@magnet.fsu.edu)

**Steven Barlow**, *Education Editor*  
[sbarlow@sunstroke.sdsu.edu](mailto:sbarlow@sunstroke.sdsu.edu)

**Thomas E. Phillips**, *Consulting Editor*  
[phillipst@missouri.edu](mailto:phillipst@missouri.edu)

**E. Ann Ellis**, *Microscopy 101 Editor*  
[eann.ellis@worldnet.att.net](mailto:eann.ellis@worldnet.att.net)

**Paul Webster**, *Calendar Editor*  
[pwebster@usc.edu](mailto:pwebster@usc.edu)

**John Shields**, *Humor Editor*  
[jpsshield@uga.edu](mailto:jpsshield@uga.edu)

#### Advertising Sales

M.J. Mrvica Associates, Inc.  
2 West Taunton Avenue, Berlin, NJ 08009  
[mjmrvica@mrvica.com](mailto:mjmrvica@mrvica.com)  
(856) 768-9360

**Amy Reuter**, *Account Manager*  
[areuter@mrvica.com](mailto:areuter@mrvica.com)

#### Magazine website:

<http://www.microscopy-today.com>

Free subscriptions are available

#### Publisher

Cambridge University Press  
32 Avenue of the Americas  
New York, NY 10013-2473  
(212) 337-5000

Circulation: 16,400

#### Editorial Board

Arlan Bencoter, *Lehigh University*  
John Bozzola, *Southern Illinois University*  
Peter Crozier, *Arizona State University*  
Vinayak Dravid, *Northwestern University*  
Joseph Goldstein, *University of Massachusetts*  
Bryan Huey, *University of Connecticut*  
Thomas Kelly, *Imago Corporation*  
John Mackenzie, *North Carolina State Univ.*  
Paul Maddox, *University of Montreal*  
Ania Majewska, *U. Rochester Med School*  
Greg Meeker, *U.S. Geological Survey*  
Joseph Michael, *Sandia National Labs*  
Caroline Miller, *Indiana University*  
Robert Price, *University of South Carolina*  
John Reffner, *John Jay College, SUNY*  
Ian Robertson, *University of Illinois*  
Phillip Russell, *Appalachian State University*  
Glenn Shipley, *Citizen Microscopist*  
Robert Simmons, *Georgia State University*  
Paul Voyles, *University of Wisconsin*  
Simon Watkins, *University of Pittsburgh*  
Cynthia Zeissler, *Nat. Inst. of Sci. and Tech. (NIST)*