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The International Metallographic Society eNewsletter
An ASM International Publication

Celebrating
50 Years
1967 - 2017

October 2017 Newsletter



Picture of the Day

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Consider Volunteering for Materials Camp

Did you know that there is a perfect way for you to work with our high school-level youth and volunteer at the same time?

“To excite young people (K-12) in materials, science and engineering careers” is the mission of the ASM Foundation. Working toward this goal, the first ASM Foundation Materials Camp, the ASM Eisenman Materials Camp, was established in 2000. I am excited and

honored to be a long-time volunteer mentor at this camp, having missed only that first one. Like my fellow mentors—many of whom are IMS members—I can't imagine not having camp to look forward to each year.

If you have considered volunteering even a few hours a year and didn't really know where you would like to spend that time, consider volunteering at an ASM Materials Camp. [View the list of 2017 Student Camps](#) or the [Teacher Camps](#) to see if there's one near you. Or email [Jeane Deatherage](#) to find out which camps could most use a few hours of your time. Trust me, you won't regret it. I sure don't. ASM Eisenman Camp 2017, here I come!

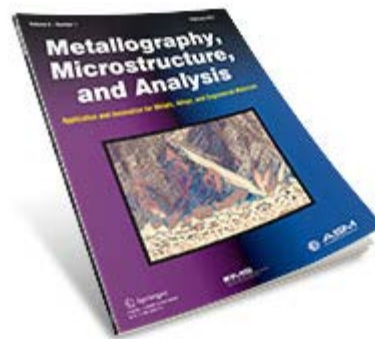
Judy Arner
Secretary, IMS Board of Directors

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June *MMA* Features Article from 2016 Jacquet–Lucas Award Winners

The June issue of *Metallography, Microstructure, and Analysis* will feature an article by the 2016 recipients of the Jacquet–Lucas Award, featuring their winning entry “Quantitative Characterization of Fracture Features in Titanium Alloys.” The 2016 recipients of the Jacquet–Lucas Award are Vikas Sinha, UES, Inc., Dayton, Ohio; Sushant Jha, Universal Technology Corporation, Dayton, Ohio; Adam Pilchak, Reji John, and James Larsen, Air Force Research Laboratory (AFRL), Wright-Patterson Air Force Base, Ohio; and William J. Porter, III, University of Dayton Research Institute, Dayton, Ohio.

The ASM Metallographic Award was established in 1946 for the best entry in the annual ASM metallographic competition. In



1958, it became known as the Francis F. Lucas Metallographic Award. In 1972, ASM joined with The International Metallographic Society (IMS) in sponsoring the Pierre Jacquet Gold Medal and the Francis F. Lucas Award for Excellence in Metallography. This award has been endowed by Buehler Ltd. since 1976.

Watch for the article to appear online first!

Online First Articles >



IMS Representatives Attend ASM Affiliate Officer Summit

ASM hosted an Affiliate Officer and ASM Management Summit on April 18 and 19 at its headquarters in Materials Park, Ohio. On hand to represent the interests of the International Metallographic Society were **Jaret J. Frafjord**, IMS president, laboratory director at IMR Test Labs-Portland, and **Daniel P. Dennies, FASM**, IMS vice president-elect, principal of DMS Inc. The objective of the Summit was to strengthen the relationships between the Affiliates and ASM, and better align their activities with the ASM Renewal.

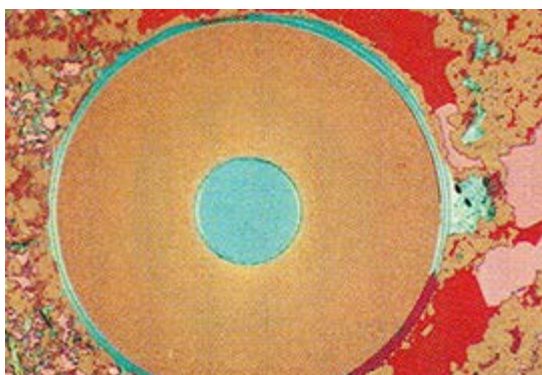
Also in attendance were leaders from the Electronic Device Failure Analysis Society, Failure Analysis Society, Heat Treating Society, International Organization on Shape Memory and Superelastic Technologies, and the Thermal Spray Society, as well as members of the ASM management team.

Video of the Week



One of the Strongest Lightweight Materials Known

A team of Massachusetts Institute of Technology engineers has successfully designed a new 3-D material with five percent the density of steel and ten times the strength, making it one of the strongest lightweight materials known.



**50th ANNIVERSARY of IMS:
Historic Jacquet-Lucas
Image**

In each issue of SlipLines this year, we will examine a small cross section of IMS history, in celebration of the Society's 50th anniversary (1967-2017).

This microstructure of an advanced ceramic composite utilized an interference-laying technique, which caused each phase to appear as a different color. Called "Quantitative Analysis of Color Metallography," it was the 1993 winner of the Jacquet-Lucas Award, the first after the International Metallographic Society became an affiliate society of ASM in September of that year. The entry was prepared by a team from NASA Lewis Research Center in Cleveland, Ohio.

ASK THE EXPERTS

Q: Is cold mounting a sufficient way to mount metal powders for SEM & EDS and optical microscopy?

— *I.P.*

A: Yes. Simply mix the metal powder well into a small amount of epoxy mounting material (resin and hardener) to keep the particle density high. Pour that into a mounting cup. Then carefully fill the cup with additional epoxy, being careful to keep the particles near the mount bottom. When cured, grind and polish as usual. For SEM applications, sputter with a thin layer of Au, Pt, Pd or C.

Thermosetting conductive mounting compound can also be used to mount metal powders for SEM work. For the best results, the large mounting compound particles should be pulverized into finer powder with a mortar and pestle. Then mix some of the metal powder (about 10-20% by volume) into the pulverized mounting compound before mounting as usual.

— *Composite answer*



IMAGE OF THE MONTH

Aluminum-Silicon Casting Alloys Atlas of Microstructures

This microstructure of alloy AlSi7Mg, effect of strontium modification on eutectic silicon morphology, is found in a new book published by ASM International, [Aluminum-Silicon Casting Alloys Atlas of Microstructures](#). The metal mold, wall thickness is 2 cm, plates and rods of silicon in the interdendritic eutectic. SEM, deep etch.



Buehler supports ASM World Training Center with metallographic test equipment

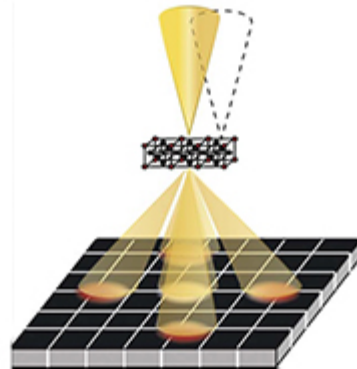
ASM International, Materials Park, Ohio, announces that Buehler, an ITW Company in Lake Bluff, Ill., has renewed its collaboration with ASM by supporting the ASM World Training Center with new metallographic and test instruments

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New STEM electron microscope pixel array detector multiplies image information

Cornell University, Ithaca, N.Y., announces that its physicists have developed an electron microscope pixel array detector (EMPAD) for scanning transmission electron microscopes (STEM) that extracts much more information from the image than possible with conventional detectors.

[Learn More](#) >



Free Webinar Color Metallography: Bold, Bright and Beautiful

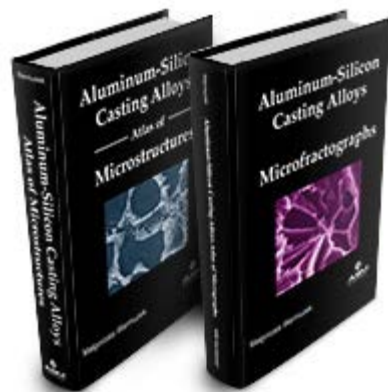
This webinar, sponsored by Struers Inc. takes place May 12th at 2:00 p.m. EDT and



features presenter George Vander Voort, FASM.

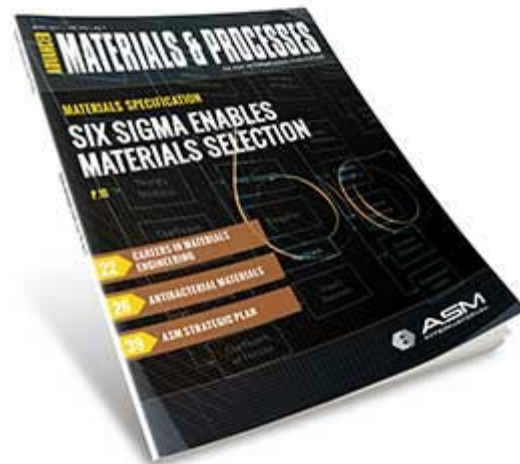
This lecture is designed to show the beauty of microstructures and the value of color etchants in metallographic studies compared to B&W etchants. Examples of many different metals and alloys will be displayed in full color.

Register Today >



ASM BOOKSTORE
Aluminum-Silicon Casting Alloys Atlas of Microstructures and Aluminum-Silicon Casting Alloys Atlas of Microfractographs Set

Price: \$278.00
 Member Price: \$213.00



AM&P DIGITAL EDITION

The April issue of *Advanced Materials & Processes* magazine has an editorial focus on Materials Specification and Materials Selection.

- [Six Sigma Process Streamlines Materials Selection](#)
- [Careers in Materials Engineering](#)
- [Antibacterial Materials](#)
- [ASM Progress Report: Strategic Plan Highlights for 2017 and Beyond](#)

This two-volume set of microstructures and microfractographs display images seen under a microscope and comprises systematic documentation of aluminum-silicon alloys with relevant descriptions. Each atlas contains images obtained during laboratory testing of mechanical properties.

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