



*Updates on friends and colleagues in the materials community*

## JOM Authors Honored

### Markus J. Buehler Wins 2011 Alfred Nobel Prize for JOM Paper

Markus J. Buehler, associate professor, Massachusetts Institute of Technology, was announced the recipient of the 2011 Alfred Nobel Prize, conferred by the American Society of Civil Engineers (ASCE), for his paper, "Failure of Alzheimer's A $\beta$ (1-40) Amyloid Nanofibrils Under Compressive Loading," published in the April 2010 issue of *JOM* with co-author Raffaella Paparcone. The award recognizes a technical paper of exceptional merit published in one of the journals of ASCE, AIME, American Society of Mechanical Engineers, American Institute of Electrical Engineers or Western Society of Engineers, whose lead author is 35 years of age or younger. The prize was established to honor Alfred Noble, a former president of ASCE and renowned civil engineer.



In addition to the 2011 Alfred Nobel Prize, Buehler's paper also won the 2011 AIME Raymond Award. In this photo, Brajendra Mishra (left), AIME president, presents Buehler with his Raymond Award at the TMS 2011 Annual Meeting and Exhibition in San Diego.

### JOM Paper on 3-D Microscopy Selected for 2012 AIME Raymond Award

D.J. Rowenhorst, metallurgist, and A.C. Lewis, materials research engineer, both of the U.S. Naval Research Laboratory, are the winners of the 2012 AIME Rossiter W. Raymond Award for their paper, "Image Processing and Analysis of 3-D Microscopy Data," published in the March 2011 issue of *JOM*. The authors will receive their award at the TMS 2012 Annual Meeting & Exhibition in Orlando, Florida, March 11–15, 2012. The Raymond Award recognizes the best technical paper published by one of AIME's member societies—of which TMS is one—in which the lead author is under the age of 35.

Lewis is also the lead organizer for the International Conference on 3D Materials Science 2012 (3DMS 2012), set for July 8–12, 2012, at the Seven Springs Mountain Resort, Seven Springs, Pennsylvania.

### Jay Narayan Named Reynolds Prize Recipient

Jagdish (Jay) Narayan, a 1999 TMS Fellow, has received the 2011 Reynolds Prize, the North Carolina State University (NCSU) College of Engineering's highest honor. The award recognizes sustained excellence in research and teaching, with the winner receiving a cash prize of \$25,000, endowed by R.J. Reynolds Industries, Inc.

Narayan is NCSU's John Fan Family Distinguished Chair Professor in the Department of Materials Science and Engineering, and also holds an appointment as Distinguished Visiting Scientist at Oak Ridge National Laboratory. He was cited for his pioneering research in novel materials and groundbreaking contributions in materials science, his mentoring of a large number of highly successful graduate students and postdoctoral researchers, and service to the science and engineering community through professional societies and the National Science Foundation. He presented his Reynolds Lecture, titled, "Frontiers in Nanomaterials and Nanotechnology and Impact on Society," at NSCU on November 2 at a program and reception in his honor.



### Hani Henein Receives Canadian Metal Chemistry Award

Hani Henein, professor, University of Alberta, received the 2011 Canadian Metal Chemistry Award at the 23<sup>rd</sup> Canadian Materials Science Conference held in June. Henein was hon-

ored for "long-time achievements in academia, leadership in the Canadian materials science field, mentoring of students, and exemplary research." As part of the award recognition, Henein delivered a lecture, "The Use of 3D Characterization in Materials Process Engineering," at the conference.

In related news, Henein won the 2011 Metallurgy and Materials Society of the Canadian Institute of Mining, Metallurgy, and Petroleum (MetSoc-CIM) Best Paper Award for "Droplet Solidification of Impulse Atomized Al-0.61Fe and Al-1.9Fe," published in the *Canadian Metallurgical Quarterly*, Vol. 49, No. 3, 275–292, 2010. He was presented with the award at the Conference of Metallurgists in October.

### In Memory of Anthony Pengidore

TMS extends its condolences to the family, friends, and colleagues of Anthony "Tony" Pengidore, who passed away on September 25.

A graduate of Carnegie-Mellon University, Pengidore was the Practice Director-Metals for Chester Engineers. A member of TMS since 1998, he served on the TMS Board as the Director, Professional Development in 2008, and was active on the Education and Accreditation Committees. He also served as the chair of the Professional Registration Committee and was very active in promoting professional licensure in materials engineering.



## TMS Member Profiles

# Fly Fishing Ties Art, Science, and Friendship Together for Dan Miracle

By Lynne Robinson

Catching a glint of early morning sun, Dan Miracle's fly line unfurls in a graceful loop before landing softly on the surface of the swiftly flowing stream. It is his hope that his meticulously tied fly lure—essentially a cleverly disguised hook—dancing at the end of the line will fool an unsuspecting trout into taking it for a real insect. But while landing a prize catch is certainly a payoff, Miracle's love for the sport actually runs as deep as the rivers he fishes.

"Fly fishing may seem a solitary activity, but it really does bring people together," he said. "I have formed many friendships 'on stream.' Sharing the beauty and serenity of where you are fishing creates a very special bond."

It was the aesthetics of fly fishing that first attracted Miracle as a 12-year-old boy growing up in Streetsboro, Ohio. With money that he had saved from working a paper route, Miracle bought his first rod and reel and taught himself how to cast. "It seemed elegant and graceful and involved some skill," he said. "It took a little dedication to master, and that appealed to me as a kid."

Many rods and reels later, Miracle, now senior scientist, Materials and Manufacturing Directorate, U.S. Air Force Research Laboratory, notes that much of his enjoyment in fly fishing derives from the experience of immersing himself in the ecosystem. "You need to blend in with the natural setting to be effective," he said. "Your casting technique is based on a number of factors—where the fish are feeding, what kind of insects they are feeding on, temperature, and water current."

Miracle has sampled many different environs in pursuit of fly fishing adventures, commenting that his hobby has taken him "to some of the most beautiful places in the world." His favorite location is New Zealand, particularly the mountainous south island.

Back at home, Miracle said that creating the flies he uses on his excursions is

another enjoyable aspect of his hobby. Weaving together feathers, synthetic fur, and tiny metal beads, Miracle explained that fly tying "gives me the opportunity to be innovative. There are lots of books that discuss materials and patterns in great detail, but I use these more as a guideline. It's an aesthetic activity for me, and I look for beauty, color, proportion, and balance. Hopefully, I can also



(Above) Miracle with a Bruce Creek brown trout on his last fishing trip to New Zealand. (Below) Miracle nets a catch.



While he has caught his share of trophy fish over the years, Miracle never keeps them, since he practices only "catch and release" fishing. "This preserves the resource and minimizes the trauma to the fish," he said. "It's an important movement in flyfishing that I and my friends all strongly support."

bring that all together into something that will help me catch a fish!"

Within the art of fly fishing, there is also a significant connection to Miracle's professional interest in materials science. "Like any sport, it's all about the materials," he said. "Graphite epoxy, for instance, has totally changed the way you fish. My first rod was fiberglass and a serious fly fisherman at the time was likely to have bamboo rod. Bamboo and fiberglass rods are much heavier, less stiff, and much harder to cast with than today's carbon or boron fiber rods. When you cast a line 1,000 times a day, removing a little weight makes a big difference."

Achieving the subtle tapering of the fly line—necessary to provide weight for casting—previously required the painstaking knotting together of progressive thicknesses of catgut or silk. Now, said Miracle, "Nylon lines give you a beautiful, continuous taper with you hardly having to do anything at all." Hooks small enough to float unobtrusively as part of the fly, but still strong enough to land a struggling fish also present materials challenges that Miracle said have been addressed over the years with such techniques as cold forging and chemical sharpening.

While noting that he doesn't have a "grand goal" for his hobby, Miracle said he would like to try his hand at salt water fishing. He also intends to work through a long list of new fishing spots to visit—in all probability in the company of the many friends he has made over the years on various river banks. "We are a far flung group, but we are bound together by this amazing sport," he said.

Each month, *JOM* profiles a TMS member and his or her activities both in and out of the realm of materials science and engineering. To suggest a candidate for this feature, contact Maureen Byko, *JOM* editor, at [mbyko@tms.org](mailto:mbyko@tms.org).