

Steering Committee Member  
Publishes Book(article)

#### IN THIS ISSUE

"Chalk Talk" with Dr. Ian White  
2012 Fall Workshop  
Web Site Update

## “Chalk Talk” on Jan. 8 with Dr. Ian White

Join us at Facci (<http://faccirestaurant.com/>) in Laurel, MD from 4:30 – 6:30 pm, as we hear about the work of Dr. Ian White from the Fischell Department of Bioengineering at the University of Maryland, on “Optofluidic SERS on paper for chemical and biological analytics.” As a bio/chemical sensing technique, surface enhanced Raman spectroscopy (SERS) offers sensitivity comparable to that of fluorescence detection while providing highly specific information about the analyte. Although single molecule identification with SERS was demonstrated over a decade ago, today a need exists to develop practical solutions for point-of-sample and point-of-care SERS systems.

[Job Openings at USNA](#)  
[Optofluidic SERS on paper for chemical and biological analytics](#)  
[2013 Alliance Symposium](#)

## UPCOMING EVENTS

Jan. 8 -- Chalk Talk with Ian White

March 12 -- Chalk Talk with Brian Jamieson

May 14 -- Spring Symposium @ NIST

June 4 -- Chalk Talk with Marcel Prussner

## STEERING COMMITTEE:

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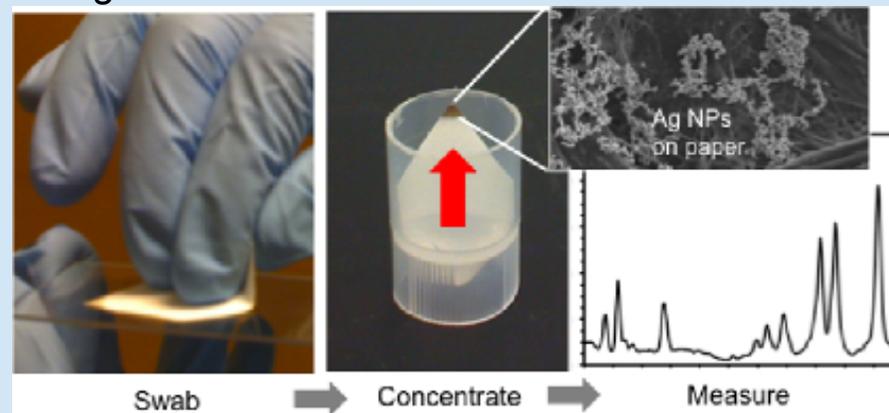
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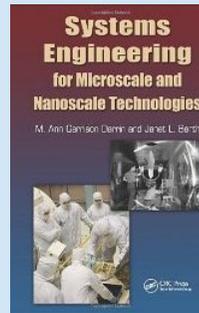
Ian White (UMD)

Recently, Dr. White's group demonstrated the fabrication of SERS substrates by inkjet printing silver nanostructures onto paper. Using a low-cost commercial inkjet printer, they inkjet-printed silver nanoparticles with micro-scale precision to form SERS-active biosensors. Using these devices, they have been able to achieve detection limits comparable to conventional nanofabricated substrates. Furthermore, they leveraged the fluidic properties to enhance the performance of the SERS devices while also enabling unprecedented ease of use. This talk will summarize the progress in the fabrication and use of these paper-based optofluidic devices, and will describe their use in practical applications for point-of-sample chemical and biological detection.



Alliance Members publish  
Book on Systems Engineering  
for  
Microscale

# and Nanoscale...available on Amazon and other sites!



Edited by Ann Darrin with contributions from 10 Mid Atlantic Micro Nano Alliance members!!!!

Course now offered through JHU Whiting School of Engineering Material Science Curriculum.

Systems Engineering for Microscale and Nanoscale Technologies is perhaps the first handbook to concentrate on the use of systems engineering at the micro and nano levels. One major roadblock to this process is a generally limited understanding of exactly how to apply systems engineering principles and management processes to the integration of newer, small-scale technologies.

Focusing on this problem of consolidating disciplines, contributors illustrate the interdependence between nanotechnology and systems engineering, making it easier for experts from these two distinct fields to understand and optimize their application of the other. To help readers from these different domains successfully combine heterogeneous, mixed-scale elements, contributors assess the evolution of micro- and nanoscale technology development and its impact on everything from laboratory concepts to actualized products

in health, automotive, aerospace, communication, and many other fields. The book outlines new approaches to developing smart systems. It also clarifies the capabilities of micro- and nanotechnologies, including how they interface with each other and with macro systems.

## 2012 Fall Workshop a Success!

MAMNA's Fall Workshop, held Tuesday, November 6 in JHU/APL's Kossiakoff Center, brought together a mix of local micro- and nanotechnologists for a cutting-edge slate of tutorials. Keynote Speaker Buzz Hardy, MEMSCAP, Inc., launched the event with an overview of the growth of the MEMS industry and multi-user processes. Scientists from industry and academia then split into parallel sessions, with tutorials covering printed circuit board design, Arduino programming, tape/paper-based microfluidics, designing for MEMS multi-user processes, rapid prototyping with the MakerBot 3-D printer, and user facilities at CCBC's FabLab. The afternoon closed with a Happy Hour and presentation

about Ethical Influence.

Thanks to all attendees for making the event a success, and to all of the speakers (Buzz Hardy, Francisco Tejada, Currie Wooten, Javier Atencia, Nate Leichter, Kelly Zona, and Mark Happel) for the fascinating sessions. Special thanks to Nate Leichter of MakerBot for making a same-day trip to the Workshop from the company's headquarters in Brooklyn, which were not fully operation due to the hurricane!

## Web Site Update

The [MAMNA web page](#) has recently undergone a redesign. We hope the new web site helps attract new members and provides our current members with better access to our resources. We plan to open up a new password protected members directory. The goal of the directory is to facilitate contact and collaboration between our members. We are currently collecting membership forms, please fill one out so you can be included when the directory goes live. The new upcoming events page will allow you to see all of MAMNAs activities in one location. The event archive will let you track down information about all of our past events. The job board will allow both job seekers and employers to post information about positions. The investment in our new webpage is meant to help our members, but we need your help in order to get the

members directory and job board to critical mass.

## Job Openings at USNA

The United States Naval Academy has openings for tenure track faculty in electrical and computer engineering, systems engineering, mathematics, physics, chemistry and aerospace engineering. The United States Naval Academy is a special place, with a special purpose. Those selected for employment will find challenging and rewarding work; state-of-the-art facilities which inspire academic and athletic excellence; the benefits of Federal employment; and exceptional quality of life. More information can be found at: <http://www.usna.edu/jobinfo/>

## 2013 MAMNA Symposium to be held on May 14th

The Mid-Atlantic Micro/Nano Alliance is hosting a symposium to discuss the recent surge in the economic importance of microsystems technology. The event, titled "Microsystems Technology: Fulfilling the Promise," will take place on May 14th, 2013 at the National Institute of Standards and Technology in Gaithersburg, MD. Participants can register on-line at:

### **MAMNA Mission**

*The Mid-Atlantic Micro/Nano Alliance is an alliance of companies, universities, and government laboratories in the Washington DC metropolitan area.*



Our mission is to create a group that networks expertise, capabilities, and research to facilitate the development of new applications and commercialization of miniaturization technologies.

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