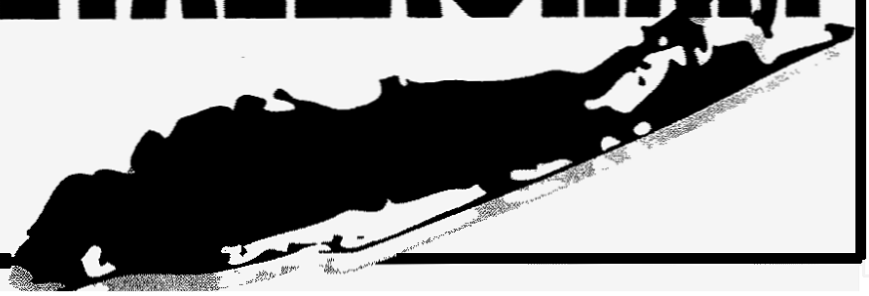
ASM INTERNATIONAL
The Materials Information Society
LONG ISLAND CHAPTER

METALLAGRAM



Volume 56 Issue 5 Chapter website: http://www.matscieng.sunysb.edu/asm/

******* PAST CHAIRS NIGHT *******

Next Meeting . . . . . Wednesday, February 18, 2015

Where . . . . . Pollo Rico, Centereach, NY

Topic: Atomistic Simulations of Coupled Deformation Behavior in Ductile Crystalline-Amorphous Nanolaminates
Speaker: Jason R. Trelewicz, SBU

Social Hour … 6 pm Dinner … 7:00 pm Meeting … 8:00 pm

Members …$25 Guests …$27 Students …$15

(New and recently transferred-in members free)

Reservations appreciated – call Peter Indrigo (631-589-6666)

Directions to Pollo Rico Latin Bistro

Pollo Rico is located at 2435 Middle Country Road (Rte. 25), Centereach. Probably the simplest way to get there from the LIE is to take Exit 62 (Nicolls Road) and go north on CR 97 (towards Stony Brook). Continue north for about 3 miles then take the exit to Rte. 25. At the traffic signals at the end of the ramp go left and head west (Smithtown). The restaurant will appear after about 1.5 miles, on the right side of the highway. Their telephone number is 631-471-0585. Their website is: http://www.polloricolatinbistro.com/

The Topic

Metallic nanolaminates, composed of periodically alternating nanocrystalline and amorphous layers, represent an exciting class of materials that simultaneously exhibit exceptional strength and ductility, which are often mutually exclusive behaviors in monolithic nanocrystalline and amorphous metals. While a number of pioneering studies have shown that the amorphous layers act as both a source and a sink for defects operating within the crystalline regions, how these processes translate to enhanced mechanical stability and their implications for the governing deformation physics remain unresolved. In this presentation, results from molecular dynamics simulations on alloy nanolaminates containing columnar nanocrystalline structures will be presented. Focus is placed on elucidating the mechanisms in which defects are initiated at grain boundaries and accommodated at the interface between the amorphous and nanocrystalline regions. By manipulating the nanocrystalline grain size collectively with the structural length scales of the nanolaminate, defect sources and sinks can be engineered to promote a more homogenous and ductile plastic response.

The Speaker

Dr. Jason Trelewicz is an Assistant Professor of Materials Science and Engineering at Stony Brook University, an Affiliate Faculty Member of the Institute for Advanced Computational Science (IACS), and Director of the IACS High Performance Computing Consortium. Dr. Trelewicz's research group, the Engineered Metallic Nanostructures Laboratory (EMNL), focuses on understanding the design, synthesis, stability, and mechanical behavior of metallic nanostructures and hierarchically structured alloys. These novel materials are synthesized through electroforming, pulsed laser deposition, and additive spray manufacturing techniques. Experiments are used in concert with atomistic simulations to study their intriguing stability and deformation behavior, which derives from competing physics spanning many length scales within the hierarchical structures. EMNL is currently supported by the National Science Foundation through projects with the Division of Materials Research and the Civil, Mechanical and Manufacturing Innovation Division. Dr. Trelewicz received his Ph.D. in Materials Science and Engineering from the Massachusetts Institute of Technology in 2008 with a concentration in Technology Innovation from the Sloan School of Management. Prior to joining the faculty at Stony Brook University, he spent four years in industry as a Program Director at MesoScribe Technologies, Inc. responsible for managing technology development and transition with a focus on harsh environment sensors produced by additive manufacturing processes. Dr. Trelewicz was selected for the 2015 TMS Young Leader Professional Development Award, represented TMS at the 2014 Emerging Leaders Alliance Conference, and was selected for the Top Speaker Award at the 2010 Defense Manufacturing Conference.

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Long Island Chapter Meeting Schedule

Mar. 11, 2015 **Topic: The Convergence of the Industrial Semantic Web and the Internet of Things**
Speaker: Rupert Hopkins, XSB
Place: Pollo Rico

April 15, 2015 **Topic: Student Night**
Place: Old Field Club

Metro NY-NJ Chapter

(http://metronynj.asminternational.org/portal/site/metronynj/)

Feb. 24, 2015 **Topic: Wearable Robots, Prosthetics, and Optimal Human-Robot Energetic Interactions**
Speaker: Joo Kim, NYU
Place: Meson Madrid, Palisades Park, NJ

Long Island Metal Workers Society

(website http://www.limws.org)

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