



# METALLAGRAM

LONG ISLAND CHAPTER



Volume 54 Issue 6

Chapter website: <http://www.matscieng.sunysb.edu/asm/>

## PAST CHAIRS NIGHT

**Next Meeting . . . . . Wednesday, February 20, 2013**

**Where . . . Copper Wok, Hicksville, NY**

**Topic: Fuel Cell Materials**

**Speaker: Ben Emley, Watt Fuel Cell Corp.**

*Social hour ... 6:00 pm Dinner ... 7:00 pm Meeting ... 8:00 pm*

*Members ... \$22 Guests ... \$25 ASM 25 years ... \$20 Students ... \$12*

*(New and recently transferred-in members free)*

*For reservations, call Peter Indrigo at 631-589-6666 or email [peterd@unitronusa.com](mailto:peterd@unitronusa.com)*

## Directions to the Copper Wok Restaurant

**From the Long Island Expressway** - take Exit 41 and go south on Route 106/107 (N. Broadway). After about 1.5 miles, stay to the left to keep on Route 107 (Route 106 forks off to the right at this point). Cross John St. and Barclay St., pass under the railroad, and after about 0.1 mile, make a right onto W. Marie Street. The restaurant will be on your right, at 1615 West Marie Street, about 100 feet after the turn. The telephone number at the restaurant is (516) 681-1947.

**From the Northern State Parkway** – instructions similar to those above, except that you should take Exit 35.

## **Our Speaker**

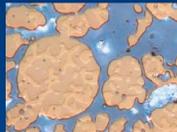
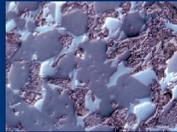
Ben Emley is the Director of Technology at Watt Fuel Cell Corporation with over 13 years of experience in advanced ceramics processing, electrochemical evaluation, and manufacturing strategies of solid oxide fuel cell technology. Prior to joining WATT, Ben managed over \$10M in private and public investments for other fuel cell ventures including NexTech Materials, NanoDyanamics Energy, and Contained Energy. Ben is currently focusing his expertise on cost reduction of manufacturing micro tubular ceramic structures with his patented 3-dimensional printing process and alternative current collection methods to make fuel cells a viable, cost competitive power source in the portable power market. Ben has a Bachelor's Degree in Chemistry from The Ohio State University and a Masters of Science in Business with a focus on Technology Commercialization from the University of Texas at Austin.

## **The Topic**

All fuel is simply stored energy – from the propane you buy at a local hardware store, to the diesel and gasoline you get at the pump. The end goal with any fuel source is to convert its stored energy into a usable form – electricity – as efficiently as possible. Fuel cells can do this exceptionally well, especially when compared with conventional technologies that include an internal combustion engine (ICE) attached to an alternator. An ICE is less efficient, requiring multiple steps to convert the fuel into electricity. Comparatively, a fuel cell directly converts the fuel source into electricity; less steps equals more power.

Fuel cells come in a variety of designs but all are based on the conversion (through a chemical reaction with an oxidizing agent) of the chemical energy in a fuel into electricity. Our speaker is involved with the design and development of one particular type, the solid oxide fuel cell (SOFC). Such fuel cells are typically based on the use of a ceramic (yttria-stabilized zirconia) as the electrolyte and operate at high temperatures (700C and above). SOFCs offer the promise of high efficiency but challenges exist in both the materials used and the optimization of the design parameters.

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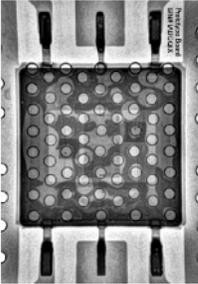
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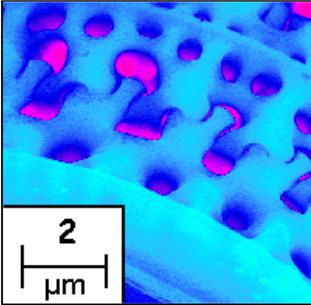
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### Long Island Chapter Meeting Schedule

**Mar. 20, 2013**    **Sustaining Members Night**  
**Place:** Mauricio's, St. James  
**Speaker:** tba  
**Topic:** Solar Cell Materials

**Apr. 17, 2013**    **Student Night**  
**Place:** Old Field Club, West Meadow Beach  
**Speaker:** tba  
**Topic:** Final Senior Design Results

**Metro NY-NJ Chapter**  
(website [www.asminternational.org/portal/site/metronynj/](http://www.asminternational.org/portal/site/metronynj/))  
(contact: Rich Lynch @ 201-891-8399)

**Feb. 13, 2013**    **Place:** Rutgers University, Piscataway, NJ  
**Speaker:** TBA  
**Subject:** TBA  
**Students Night**

**Mar. 25, 2013**    **Place:** Meson Madrid, Palisades Park, NJ  
**Speaker:** TBA  
**Subject:** TBA

**Long Island Metal Workers Society**  
(website <http://www.limws.org>)

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