



# The Macrogram

Hartford Chapter of the ASM International  
Build on our Strengths - Leverage our Diversity - Network to Succeed

## MONTHLY MEETING – TOPIC

January 10, 2006

**Topic:** Hydrogen Economy and Materials Issues

**Speaker:** Dr. Leon Shaw, FASM

Professor, Materials Science and Engineering - UConn

**Directions:** Cugino's, 1076 Main Street, Newington, CT 06111, Ph: (860) 665-0881 Main Street is Route 176.

Cugino's is south of Route 175 (Cedar Street). Use alleyway to parking area in rear.

**Agenda:**

Cocktails: 5:30-6:30 PM

Dinner: 6:30-7:30 PM

Program: 7:30-8:30 PM

**Program Charges:**

Regular Members - \$28.00

Retirees - \$15.00

Full Time Students - \$15.00

**Technical Chairperson:** Arnie Grot

**Reservations:** Call Shirley at Dynamic Metals (860) 583-3336 by noon January 6th. **Thanks!**

**Abstract:**

A transition to hydrogen as a major fuel in the next 50 years could significantly change the U.S. energy economy, reducing air emissions, and expanding domestic energy resources. However, many technical, economic, and infrastructure barriers need to be overcome. This presentation provides a brief overview of the key technical barriers associated with hydrogen production, hydrogen storage, and fuel cell technology. The work performed at UConn to develop novel solid state hydrogen storage materials will be highlighted as one of the specific examples in our journey to achieve the Department of Energy (DOE) FreedomCAR (www.eere.energy.gov/vehiclesandfuels/) target and to make the hydrogen economy a reality.



**Bio:**



Prof. Leon L. Shaw received a B.S. in Materials Engineering and a Master of Engineering in Mechanical Engineering from Fuzhou University (China), as well as a Master of Science and a Ph.D. in Materials Science and Engineering with a Minor in Mechanics and Engineering Science from the University of Florida.

He worked as a Research Scientist at Systran Corporation and as a Visiting Scientist at Air Force Wright Laboratory for 2 years before joining the University of Connecticut faculty in 1995.

His teaching and research interests are in processing and mechanical properties of nanostructured materials, solid freeform fabrication, and energy materials for hydrogen storage and fuel cell applications. He is a Fellow of ASM International, and a Fellow of the Academy of Materials and Manufacturing Engineering, Poland. He has authored or co-authored over 160 publications (2 edited books, 5 book chapters, 92 archival refereed journal articles, and 64 conference proceedings), and made 150 plus conference presentations including 33 invited talks or keynote presentations. He holds US patents for large quantity production of nanostructured materials. He is a guest editor for several journals including Metallurgical and Materials Transactions and Materials Science and Engineering. He also serves as a reviewer for federal funding agencies (e.g., NSF, DOE, AFOSR and CRDF) and leading journals in the field. He is an executive committee member of ASM Nanomaterials Technology Task Force and the Chairman of ASM Materials Synthesis and Processing Committee. He is cited in Who's Who in America and Who's Who in Science & Engineering. He is also an award-winning faculty advisor to the UConn ASM/TMS Student Chapter from 1998 to 2004 with the following international awards.

- ASM/TMS Chapters of Excellence for Technical Programming in 1999
- ASM/TMS Chapters of Excellence for Technical Programming in 2001
- ASM/TMS Chapters of Excellence for Promotion of the Field in 2003
- The First Place Winner of the 2003 and 2004 ASM, ISS, TMS World Materials Outreach Award investigative science in pre K through 12th grade.

**THE ASM HARTFORD/UCONN MATERIALS SCIENCE AND ENGINEERING INTERNSHIP PROGRAM**

is designed to introduce students interested in a materials science and engineering career to materials applications in the world and to offer practical experience in the industry's day-to-day operations.

**ASM Members, please help the future of the materials industry by asking your company to sponsor an Internship for a Materials and Science Engineering undergraduate.**

Contact Stu Weiss, (860) 731-6736, for more information on how your company can participate in the Internship Program. *Students can contact Dr. Ramprasad at 486-4102 about internship opportunities.*



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## MONTHLY MEETING – TOPIC

February 16, 2006

ASM Trustee Visit – Spouses Night

Topic: Can Lightning Strike Twice in the Same Place?

Speaker: Dr. Frederick E. Schmidt, Jr., FASM  
ASM Trustee (2004-2007)  
Technical Director - Materials Engineering  
Engineering Systems Inc.

Directions: Cugino's, 1076 Main Street, Newington, CT 06111, Ph: (860) 665-0881 Main Street is Route 176. Cugino's is south of Route 175 (Cedar Street). Use alleyway to parking area in rear.

### Agenda:

Social: 5:30-6:30 PM  
Dinner: 6:30 7:30 PM  
Program: 7:30- 8:30 PM

### Program Charges:

Regular Members - \$28.00  
Couples - \$50  
Retirees - \$15.00  
Full Time Students - \$15.00

Technical Chairperson: Arnie Grot

Reservations: Call Shirley at Dynamic Metals (860) 583-3336 by noon February 13th. Thanks!

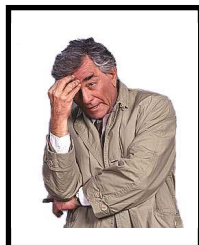


### Abstract:

*Can Lightning Strike Twice in the Same Place?* is a murder mystery style presentation. It involves a failure analysis situation wherein the audience inspects the clues during the Social Hour. The presenter, a.k.a. Chief

Inspector Mur Doc, builds the suspense by setting the scene and outlining the investigation during appetizers. Following dinner, members, spouses, students and guests participate in using the clues to find the cause of the failure under the guidance of Chief Inspector Mur Doc.

The program gives lay people an introduction to materials engineering. It also lets those scientifically trained to use their analyzing and reasoning skills. The evening program is a combination of show & tell and amateur acting by the presenter, who assumes the role of Mur Doc, a character loosely styled in the mold of Lt. Columbo.



### Bio:

Dr. Frederick E. Schmidt, Jr. oversees the materials consulting function of Engineering Systems Inc. as Technical Director, Materials Engineering. His broad consulting practice spans from design and performance of complex engineered systems to consumer products. He received his B.S. degree in metallurgical engineering (1968), and his M.S. (1970) and his Ph.D. (1994) in materials science from Drexel University. In 1981, he became a registered Professional Engineer in Pennsylvania.

As a Consultant (1972) and Research Fellow (1989) with E.I. du Pont de Nemours and Co., Inc., Dr. Schmidt provided creative solutions to materials and processing problems associated with new products and technologies. Ceramics, polymers, elastomers and advanced coatings were frequently engineered in unique configurations for new or improved products. As Chief Metallurgist (1989-1997) for Remington Arms, he had design responsibility to specify materials, manufacturing processes and abuse-test five advanced firearm products in just eight years.

Dr. Schmidt has published and presented more than 50 papers including such diverse subject matters as slurry erosion, firearm design, tribology, and lubrication testing methodology. He has been a regular contributor to ASM's Practical Failure Analysis journal, writing for the "Point/Counter Point" feature. Failure analysis has been a long-time hobby that parallels his interest in the historical development of materials throughout the Industrial Revolution, and the progressive use of modern materials in design.

Dr. Schmidt enjoys teaching and has served as Adjunct Professor at the University of Delaware, Mechanical and Aerospace Department, and currently teaches focused courses for ASM and American Electroplaters & Surface Finishers (AESF) as well as industry. He is active in the National Society of Professional Engineers (NSPE) and has served as President of the Delaware State Council of Engineering Societies. He has received ASM's Allan Ray Putnam National Service Award (1991) and the Instructor of Merit Award (2001). Schmidt joined ASM in 1963 and was named a Fellow in 2002 for his contributions to materials design. He is active in both the Rockford Chapter and the Chicago Regional Chapter.

## MONTHLY MEETING – TOPIC

March 14, 2006

Past Chair Night

Topic: To Be Announced

## Winter 2006

## ASM HARTFORD

### EXEC'S LETTER

My fellow members: In our *Hedgehog Council* sessions, our Executive Committee has postulated *networking connections* as a uniqueness of the Hartford Chapter. Network connections can be defined as contacts made between members for mutual benefit at a Chapter meeting, or by members to ASM International as a result of a chapter initiative. Details of this concept and the process by which



2005 Golf Outing

we developed it can be found on our web site. Such connections were used at our *Annual Golf Outing* in September to give the *ASM Hartford/UConn Materials Science and Engineering Internship Program*

a great start at our November Meeting. Matthew Diem, Plant Manager at Bodycote - Berlin, gave a talk on how his student internship molded his career path. Kevin Rankin, a UConn junior in MSE, gave a coffee talk on *Interning in a Federal Research Lab*. Both speakers as well as over a dozen internship opportunities were discovered through networking at ASM Hartford events.



November Meeting

Chapter members and guests assembled at our October meeting to listen to Jack Crane give an overview of *The Future of Nanomaterials in CT*. The discussion centered on the things that we can do to help our industry and Connecticut to harvest the benefits of this emerging technology. Jack's presentation and many benchmarking sources can be found linked from the October 2005 meeting page on our web site.



October Meeting

You, too, can help position yourself and your company for success through *networking connections*, which you can develop at ASM Hartford meetings. Each of our three winter meetings provides you with the opportunity for establishing and maintaining connections. Each offers a unique topic important to the materials industry.

On January 10, Dr. Leon Shaw will discuss some of the materials needed to bring the hydrogen economy to fruition. The topic and its mystery style presentation of our February 16 meeting was selected so that you can include your spouse or a special friend in an entertaining evening. You can make this meeting part of an extended celebration of Valentine's Day. A couple's rate is offered as a further inducement. *Past Chair Night* in March will offer a chance to build relationships with our Chapter's past leaders as well as a topic with a unique spin.

*Networking to help you succeed through ASM Hartford,*

Executive Committee

ASM Southern Connecticut Chapter has the following meetings planned for the winter. Meetings start with a social hour at 5:30 PM, dinner at 6:30 PM and the speaker at 7:30 PM

**January 19, 2006 Tooling Issues and Materials, RTM, Autoclave and Compression Molds** presentation by Richard Walton and Ken Scibelli, APEX Machine Tool Company of Farmington, CT at Connie's Family Restaurant, 87 Elizabeth Street, Derby, CT

**February 16, 2006 Cold Spray Deposition** by Dr. Andrew DeBiccari of Pratt and Whitney, East Hartford, CT (Location to be determined – see website for updates)



Coffee Talk Speaker Gift

### Coffee Talks

We encourage our Chapter Sustaining Members to briefly (*8-12 minutes*) tell our members about their products and services in a *Coffee Talk*.

Coffee Talks are given at ASM Hartford monthly meetings when appetizers are served, typically just after the networking hour (5:30-6:30 PM) and prior to dinner (6:45 PM).

Contact our Chapter Chairperson to give a Coffee Talk.

If you are not a Chapter Sustaining Member and wish to give a Coffee Talk, you can either sponsor one of our meetings or become a Chapter Sustaining Member by contacting our Chapter Secretary or Chairperson.

**The following bound and unbound copies of past issues of AIME Trans and ASM journals** are available free to interested individuals or organizations:

1. Met Trans- Bound volumes - 1953-1969  
Unbound issues - Jan 1970 - Dec 1999
2. Acta Met- Unbound issues - Jan 1971 - Dec-1982

*They will be donated to any interested persons or organization.* For tax purposes, an estimate of the value of the donation should be made.

**Contact:** Prof. Arthur J. McEvily  
Metallurgy Department, University of Connecticut  
U-3136, 97 No. Eagleville Rd., Storrs, CT 06269-3136  
Tel: (860) 486-2941 Fax: (860) 486-474  
Email: [mcevily@mail.ims.uconn.edu](mailto:mcevily@mail.ims.uconn.edu)

## Winter 2006

## ASM HARTFORD

### 2005-2006 Executive Committee

<b>Chairperson</b>	Arnie Grot	(860) 633-5849
<b>Vice Chairperson</b>	Joe Zucco	(203) 250-6922
<b>Secretary</b>	Jack Woodilla	(203) 374-7650
<b>Treasurer</b>	John Rugh	(860) 346-2433
<b>Public Relations</b>	Harley Graime	(860) 550-7246
<b>Scholarship</b>	Rob McQueeney	(860) 738-5650
<b>Membership</b>	Jack Piela	(860) 872-9359
<b>University Affairs</b>	Leon Shaw	(860) 486-2592
<b>Student Affairs</b>	Rampi Ramprasad	(860) 486-4102
<b>Student Chapter</b>	Neil Magdefrau	(860) 427-5181
<b>Golf Outing</b>	Rebecca Gatzon	(860) 667-4403
<b>Member at Large</b>	Stu Weiss	(860) 731-6736
<b>Member at Large</b>	Joe Kubinski	(860) 745-5977

### Sustaining Member Companies

Consider becoming a sustaining member. For information, please contact Jack Woodilla, Secretary.

Bodycote Thermal Processing	Lutz Associates
Consolidated Ceramic Products	M&S Incorporated
Conval Corp	Metallurgical Services Intn'l
Deringer Ney Inc	MicroTech Optical Inc.
Excel Technologies	Nerac
Flame Treating & Engineering	Specialty Steel Treating Inc
Fenn Manufacturing Co	United Service Company
Grot Enterprises	University of Connecticut
Jacobs Vehicle Systems	Vitta Corp

*Due to cost of printing and mailing, ASM Hartford will publish just one issue of the Macrogram in the fall, one winter issue and one spring issue. Therefore, it is particular important that you bookmark the ASM Hartford web site (<http://www.asm-hartford.org/>) and check it regularly for updated information. We will continue to send out email notices to those on our distribution list prior to events.*

To receive an email notice of Hartford Chapter events, send an email to [web@asm-hartford.org](mailto:web@asm-hartford.org).



**Join ASM!**

- FREE Book when you join! (see available selection)
- FREE monthly magazine covering industry and society happenings
- FREE access to ASM Desk Editions Online
- FREE access to online membership directory for networking and information exchange
- Members-Only discounts on books, seminars, journals, self-study, conferences, and online subscriptions



**Hartford Chapter**

The Materials Information Society

[www.asm-hartford.org](http://www.asm-hartford.org)