



The Macrogram

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

MONTHLY MEETING – TOPICS

January 11, 2005

Topic: Introduction to Inertial Guidance and Control Systems

Speaker: Steve Kaye

Manager of International Business Development
BAE Systems Cheshire
www.na.baesystems.com

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: Joe Zucco

Social Hour Sponsor: TBA

Reservations: Call Laura or Patti at Dynamic Metals (860) 583-3336 by noon January 7th. **Thanks!**

Abstract:



Mr. Kaye will be speaking on the science of inertial guidance measurement, technology and applications. The presentation will be in layman's terms, with more technical focus if there is interest.

An engineer is taught, early on, that under most circumstances it is inadvisable to use dissimilar materials in intimate contact. The reason of course, is that dissimilar metals make batteries, thereby generating voltages and current flows between the metals causing decomposition. When such a system is required various techniques must be employed to either eliminate or reduce the reaction rate to something tolerable.



BAE Systems microprocessor guides Rover landings on Mars BAE Systems built the radiation hardened RAD6000 computers that are guiding the 'Spirit' and 'Opportunity' Rovers that have successfully landed on Mars to study minerals in rocks. These computers also processed key navigational data during each spacecraft's six month journey.

The GYROSCOPE is an instrument that demands the use of many materials of differing compositions each chosen for something special and each dragging along a plethora of unwanted characteristics that must be dealt with.

Speaker's Bio:

Steve Kaye is a 1959 BEE graduate of CCNY. Having completed his US Navy obligations in 1955, he went to work at Sperry Gyroscope Company immediately after graduation. After leaving Sperry, he worked for: American Machine and Foundry Co.; Radiation Dynamics; Atlantic Research Corp; Celesco; Timex; Bendix; Allied; AlliedSignal; Condor Pacific; Honeywell; and BAE where he now holds the position of Manager, International Business Development. While working at Celesco, Mr. Kaye earned his Masters Degree in Management (MAOM) from The University of Southern California. Mr. Kaye has been designing or building or selling Gyroscopes in one form or another for more than 45 years.

February 8, 2005

Trustee Visit and Past Chair Night
Topic: Roach Inspired Technology

Speaker:



Dr. Frederick J. Lisy, FASM
2004-2007 ASM Trustee
President Orbital Research Inc.
Cleveland, OH
www.orbitalresearch.com

Directions: Cugino's, 1076 Main Street, Newington, CT, 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
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Program Charges:

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

Technical Chairperson: Arnie Grot

Social Hour Sponsor: TBA

Reservations: Call Laura or Patti at Dynamic Metals (860) 583-3336 by noon February 4th. **Thanks!**

Abstract:

To survive, animals must integrate large amounts of sensory information, often in milliseconds, to direct movement towards goals and away from threats. Similar directives are faced by autonomous vehicles through rapid assimilation of surroundings, instantaneous goal seeking and crash avoidance. Nature, through evolution and natural selection, has optimized this behavior. In particular, insects initiate actions reflexively in situations where no time for detailed information processing or planned decision-making is possible. This presentation will highlight innovative control strategies to maneuver autonomous vehicles using controls inspired by nature. Imagine the performance, speed and accuracy of autonomous vehicles possessing similar maneuvering capabilities of insects. Members of the Orbital Research team have developed a biologically inspired neural network that mimics the escape response of the American Cockroach as well as swarming algorithms to coordinate a large number of manned, semi-autonomous and/or autonomous vehicles. These control strategies would empower vehicles with instantaneous collision avoidance as well as task allocation and optimization scenarios. These algorithms have been demonstrated on air vehicles demonstrating instantaneous reflexive obstacle avoidance response and advanced sensor integration.

Speaker's Bio

Dr. Frederick J. Lisy is the President of Orbital Research Inc. Under his leadership, Orbital Research was presented with the "Inc. 500" award in 2001 and has made Case Western Reserve University's Weatherhead School of Management Top 100 list for the past five years (1999-2003). Both awards recognize companies for fast and consistent growth.

Dr. Lisy oversees the development and commercialization of Orbital Research's core technologies that focus on microdevices and advanced controls. He is integral in several cutting edge technology development programs that target the automotive, aircraft and medical products industries, and has successfully transitioned high technology concepts into viable products.

Prior to joining Orbital Research, Dr. Lisy was the Program Manager and Senior Researcher for the Center on Materials for Space Structures (CMSS), a NASA Center for Commercial Development of Space (CCDS) at Case Western Reserve University. While working at CMSS, he was instrumental in developing eight passive and one active space shuttle experiments.

He received his B.S. (1989), M.S. (1989) and Ph.D. (1993) in materials science from Case Western Reserve University. He was selected as the "Young Engineer of the Year" in Northeast Ohio by the Cleveland Engineering Society in 1997, recognized for "Outstanding Technical Achievement" by the Cleveland Technical Societies Council in 2000 and honored as one of Cleveland's Top 40 Engineers (1998) and Top 40 "Leaders Under 40" (2002) by Crain's Cleveland Business magazine. He was elected a Fellow of ASM in 2001.

Dr. Lisy has been a member of ASM for nearly 20 years and has been active in numerous society and educational activities at the national and local levels. He has served as Student Chapter Chairman for Case Western Reserve University (1986-87), as a member of the ASM Chapter Council (1999-2002) and as a

member of the Cleveland Chapter Executive Committee (1992-present).

March 8, 2005 - Student Night**Topic: UConn Research Presentations****Competition Poster Session****Speaker:** UConn Students

Members of ACerS/ASM/TMS UConn Student Chapter

Directions: Zenny's Restaurant625 Middle Turnpike (Route 44),
Storrs/Mansfield, CT**Zenny's** is located on Route 44 at the intersection of Routes 195 and 44 just a mile north of UCONN.**Agenda:**

Cocktails: 5:45-6:45 PM

Dinner: 6:45 7:30 PM

Program: 7:45- 8:45 PM

Program Charges:

Regular Members - \$29.00

Retirees - \$15.00

Full Time Students - \$15.00

Entrée Choices

- Chicken Francaise
- Eggplant Florentine
- Veal Parmesan
- Baked Scrod

Dinners served with salad, hot rolls, potato, vegetable, coffee or tea and dessert. **Meal choice must be confirmed** by noon March 3rd.

Technical Chairperson: Ramamurthy Ramprasad**Social Hour Sponsor:** TBA

Reservations: Call Laura or Patti at Dynamic Metals (860) 583-3336 by noon March 3rd. **Thanks!**

Abstract:

The over seventy research projects of the Graduate and Undergraduate students of UConn's Department of Materials Science and Engineering pass through extensive peer and faculty review with the best competing to be the three selected for presentation to the Hartford Chapter.

April 12, 2005
Materials Week Career Day
New England Air Museum
Windsor Locks, CT



September 14, 2005
Annual Golf Outing Classic
180 West Street-Hebron, CT



"Leadership is far more complicated than simply being an effective manager. Among other things, it's about leaving behind indelible footprints."

Randall Tobias

Executive Committee

Communications	Arnie Grot	(860) 633-5849
Vice Chairperson	Joe Zucco	(203) 250-6922
Secretary	Jack Woodilla	(203) 374-7650
Treasurer	John Rugh	(860) 346-2433
Public Relations	Harley Graime	(860) 550-7246
Member at Large	Joe Kubinski	(860) 745-5977
University Affairs	Leon Shaw	(860) 486-2592
Student Affairs	Ramamurthy Ramprasad	(860) 486-4102
Student Chapter	Chandrasekhar Kothapalli	(860) 486-3543
UConn Scholarships	Jack Woodilla	(203) 374-7650
Membership	Jack Piela	(860) 872-9359
Golf Outing	Rebecca Gatzen	(860) 667-4403
Outgoing Chair	Stu Weiss	(860) 285-4232

Sustaining Member Companies

Consider becoming a sustaining member. For information, please contact Rebecca Gatzen, Secretary.

Bodycote Thermal Processing	Lutz Associates
Consolidated Ceramic Products	M&S Incorporated
Conval Corp	Metallurgical Services Intrn'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.



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Hartford Chapter

The Materials Information Society

www.asm-hartford.org

ASM HARTFORD CHAPTER
 Jack Piela, Membership
 68 Brimwood Drive
 Vernon, CT 06066