



**SOCIETY FOR THE ADVANCEMENT
OF MATERIAL AND PROCESS
ENGINEERING
NEW JERSEY CHAPTER**

APRIL NEWSLETTER & MONTHLY NOTICE

APRIL 2, 2009 (1ST THURSDAY)

**STEEL/COMPOSITE HYBRID
SHIPS SOON HITTING THE WATER**

**JOACHIM L. GRENESTEDT
PROFESSOR, DEPT MECHANICAL
ENGINEERING & MECHANICS
LEHIGH UNIVERSITY
19 MEMORIAL DRIVE WEST
BETHLEHEM, PA 18015
PHONE: 610-758-4129
FAX: 610-758-6224
Email: jog5@lehigh.edu**

MEETING DETAILS

Place: Bridgewater Manor, Bridgewater, NJ; (908) 658-3000
Time: 5:30 Cocktails (Cash Bar); 6:15 Dinner; 8:30 Adjourn
Cost: \$10.00 Advanced Registration; \$15.00 at Door; Students - Free

This meeting is open to all SAMPE members, spouses, guests, and other interested parties

Reservations please contact John Osterndorf at 973-248-5885 or by email at sampejohn@yahoo.com
by noon the Wednesday before the meeting.

Directions to Bridgewater Manor: From I-287 north, take exit 22A (206 south). Go thru two lights, Bridgewater Manor is on right. From I-287 south, take exit 22. Make right at end of ramp. Make next left, a jughandle to cross 202/206 to go south on 202/206. Go thru three lights, Bridgewater Manor is on the right.

SAMPE BEST CHAPTER AWARD WINNER

1990, 1991, 1992, 1993, 1995, 1996, 1997, 1998, 1999, 2000, 2001

SAMPE CHAPTER SERVICE EXCELLENCE AWARD WINNER

2002, 2003, 2004, 2005, 2006



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MARCH MEETING

The March meeting of the NJ Chapter, Mr. Paul Allibone gave a presentation, Methacrylate Adhesives. Mr. Allibone described the history of MMA's, definition of structural adhesives, why methacrylates, applications for methacrylates, comparison between MMA's and other structural adhesives, advantages and disadvantages of MMA's and why Adhesive Systems.

The New Jersey Chapter wishes to thank Mr. Paul Allibone for the excellent presentation.

UPCOMING SAMPE EVENTS

2009 SAMPE International Symposium and Exhibition, Baltimore Convention Center, May 18 – 21, 2009, Baltimore, MD

**“LEVERAGING M&P
TECHNOLOGIES FOR A GREENER
FUTURE”**

The Baltimore/Washington, Midwest and Ohio SAMPE Chapters are sponsoring the 2009 ISS&E 2009 International SAMPE Technical Conference, Wichita, KS, October 19 – 22, 2009

**“GLOBAL MATERIAL
TECHNOLOGY
SOARING TO NEW HORIZON”**

The New Jersey and Wichita Chapters are sponsoring the 2009 ISTC

2008 – 2009 MEETING SCHEDULE

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| September 8 – 11, 2008 – 40 th International SAMPE Technical Conference, Memphis, TN Sponsored by Great Lakes Chapter |
| October 2, 2008 – FRP Strengthening of the Concrete Pier at the Naval Station Earle at Sandy Hook NJ, Dr. Howard S. Kliger, H. S. Kliger & Associates |
| November 6, 2008 – Tour of Alcan/Baltek Facility, Northvale, NJ |
| December 4, 2008 – The Role of Fragrance in Consumer Products, Lauren Castelli, Givaudan Corporation |
| February 5, 2009 – Advances in Acoustic Emission, Terry Tamutus, Physical Acoustics Corporation, Princeton Junction, NJ |
| March 5, 2009 – Methacrylate Adhesives, Paul Allibone, Adhesive Systems, Inc, Frankfort, IL |
| April 2, 2009 – Steel/Composite Hybrid Ships Soon Hitting the Water, Prof. Joachim L. Grenestedt, Lehigh University, Bethlehem, PA |
| May 7, 2009 – Election of Officers – TBD |
| May 18 - 21, 2009 – 53 rd International SAMPE Symposium & Exhibition, Baltimore Convention Center, Baltimore, MD Sponsored by Baltimore/Washington, Midwest and Ohio Chapters |
| June 4, 2009 – TBD |
| July 9, 2009 – 26 th Annual NJ SAMPE Golf Tournament, Picatinny Arsenal, NJ |

**THE NEW JERSEY CHAPTER HAS A
STUDENT CHAPTER AT DREXEL
UNIVERSITY**



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STEEL/COMPOSITE HYBRID SHIPS SOON HITTING THE WATER

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ABSTRACT:

During the last decade the Office of Naval Research (ONR) has funded intensive research on combining steel and composites to create lightweight, high strength, and highly efficient Naval structures. Much work has been devoted to joint design and now we can manufacture joints with only a small penalty in weight and strength. A 1:35 scale model of a destroyer ship hull was manufactured in 2004 and tested under simulated sea loads. The hull performed very well and survived loads extending to 40% beyond design loads with no failure in the composites of the adhesive bonds. A considerably larger (1:8 scale) steel / composite hybrid hull specimen was subsequently manufactured and tested under cyclic loads. After 300,000 cycles, a third of which were the design load, there were extensive cracks in the steel but only minor damage in the

composite panels. In early 2008 we started building a 28 ft high speed boat with a stainless steel frame closed out with composite sandwich panels. This boat will be used to evaluate the steel / composite hybrid hull concept under realistic loads. It will also serve as an instrumented slamming load test facility.

BIOGRAPHY:

Joachim L. Grenestedt received his M.Sc (1987) and Ph.D. (1992) from the Royal Institute of Technology, Sweden. He has worked as a Fellow Researcher at ABB Corporate Research Center in Switzerland, a Visiting Researcher at the Japan National Aerospace Laboratory, and as CEO for Ancos Aerospace and Naval Composite Structures. He specializes in design, manufacturing and testing of composite structures. In the 1990's he was deeply involved in the structural design of the all-carbon fiber Visby stealth ship. He led the testing of a carbon fiber spoiler for the Airbus 320. Since 2000 he has worked at Lehigh where his focus has been on steel/composite hybrid ships. His lab has excellent facilities for design, manufacturing and testing. Special equipment includes a large 5-axis CNC router, a CNC waterjet cutter, a drop weight tower for ship panel impact, a high speed raceboat, and a fully aerobatic single seat aircraft. His main efforts are at present devoted to manufacturing a steel/composite high speed boat for slamming research.



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41ST INTERNATIONAL SAMPE TECHNICAL CONFERENCE SAMPE 2009 – WICHITA

Planning for the Wichita ISTC by NJ and Wichita chapters is progressing well. A total of 145 abstracts for 37 identified technical sessions (that's 75% of what is needed) have been submitted. In addition 5 panel sessions and 3 featured lecturers and 2 keynote speakers complete the technical program. The deadline for abstracts has been extended to March 30. The chapters are optimistic in expecting over 200 abstracts to be submitted by the final deadline. Abstracts are still being submitted. The next deadline is for both chapters to send a preliminary package to SAMPE IBO by March 20 so that the program and other activities can be identified and assist in developing the Preliminary Program for printing.

Other items in the planning stages include tours of Spirit Aerospace, Hawker Beechcraft and NIAR (National Institute for Aviation Research) at Wichita State Univ., speaker gifts, and identification of a speaker for the Thursday luncheon to discuss aviation history in Wichita . One good indication that this will be a successful conference is that reservations for exhibit space for the event are almost filled, and a filled exhibit almost guarantees a financially successful conference.

Overall, good progress and planning continues, and both chapters appear to be on schedule for all the nearing deadlines

CORPORATE SPONSORSHIP

The New Jersey Chapter is inviting you and your company to be a Corporate Sponsor of the Chapter. By being a corporate sponsor, you and your company enables the chapter to continue its educational endeavors such as the Bridge Building Contest at the SAMPE Symposium and Exhibition and to hold monthly technical meetings. The New Jersey Chapter will be sponsoring the 2009 Fall Technical Conference with the Wichita Chapter in October 2009 in Wichita, KS. In addition, your contribution enables the chapter to publish the monthly newsletter, conduct one day seminars and sponsor international conferences and exhibitions. These activities have helped the chapter become one of the best chapters in SAMPE.

During the current fiscal year, the chapter has planned a variety of topics to be presented at our monthly meetings. These topics include: FRP Strengthening of the Concrete Pier at the Naval station Earle at Sandy Hook, A Plant Tour of Alcan Balteck and Prefumery and Consumer Products. Also, the Chapter will hold its 26TH Annual Golf Tournament on July 9, 2009 at the Picatinny Arsenal Golf Course in New Jersey.

If you have any questions, regarding you corporate sponsorship, please email me at sampejohn@yahoo.com.



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26TH ANNUAL NEW JERSEY SAMPE GOLF TOURNAMENT

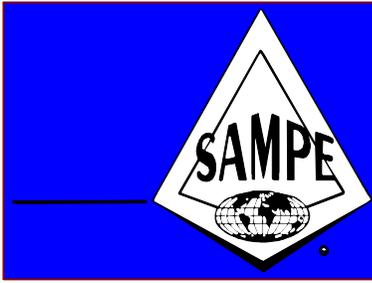
On July 9, 2009 the New Jersey Chapter of SAMPE will conduct its 26th Annual Golf Tournament. Beginning in July 1984, the golf tournament has been held as a chapter event for its members and guests to spend a relaxing day of fun in the sun.

The first few tournaments were held at the Picatinny Arsenal Golf Course, before having to move to another location due to a new requirement of having 100 golfers for the tournament to be conducted at Picatinny. The Chapter then went to the Farmstead Golf Course in Sussex County, NJ for several years before moving to the Warren Brook Golf Course in Warren County, NJ, which was centrally located for the Chapter members. In 2002, the Chapter was able to return to the Picatinny Golf Course and has been there for the past several years and again at Picatinny this coming year. Picatinny Golf Course has a practice facility (chipping, putting, and driving into a net) at the Club House for golfers who arrive early. The course is well maintained and presents a good challenge for the golfer who plans to attend this tournament.

Please reserve July 9, 2008 to attend the Golf Tournament and help the Chapter celebrate the 26th Annual Tournament that turn into new business.

NEW MEMBERS

| | |
|------------------------|--|
| <i>Paul Desjardin</i> | <i>University of Buffalo</i> |
| <i>Dan Leydon</i> | <i>Victrex USA</i> |
| <i>Matthew McGurn</i> | |
| <i>James Ratcliffe</i> | <i>National Institute of Aerospace</i> |



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PAST CHAIRMAN:

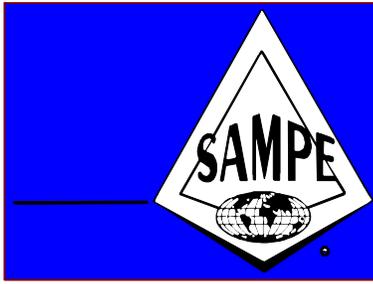
1977 – 1978 Raymond F. Wegman
1978 – 1979 William J. Russell
1979 – 1980 Michael Michno
1980 – 1981 Fred H. Ancker
1981 – 1982 Natalia Chujko
1982 – 1983 Robert J. Narsavage
1983 – 1984 Richard W. Reiter
1984 – 1985 Howard S. Kliger
1985 – 1986 John Burlage
1986 – 1987 John F. Osterndorf
1987 – 1988 Thomas J. Green
1988 – 1989 Harry S. Katz
1989 – 1990 Benjamin M. Rasmussen
1990 – 1991 Harry Tenney
1991 – 1993 Louis A. Pilato
1993 – 1994 John Burlage
1994 – 1995 Richard A. Walther
1995 – 1996 Frans van Anterpen
1996 – 1997 Kathleen A. Froelich
1997 – 1998 Gail D. DiSalvo
1998 – 1999 Ash Chopra
1999 – 2009 Benjamin M. Rasmussen

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1989 Robert Pickney
1990 Dr. Frank K. Ko
1992 Fred H. Ancker
1993 Leonard Poveromo
1999 Dr. Howard S. Kliger
2001 Dr. Louis A. Pilato
2001 Harry S. Katz

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Charles N. Muldrow
William D. Timmons
Raymond F. Wegman



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| <p>Automated Dynamics David Hauber 407 Front Street Schenectady, NY 12305 518-377-6471, X226 Fax: 518-377-5628 dhauber@automateddynamics.com www.automateddynamics.com</p> | <p>Coast-Line Int'l Heather O'Rourke 274 Bangor Street Lindenhurst, NY 11757 631-226-0500 X25 Fax: 631-226-5190 heathero@coast-lineintl.com www.coast-lineintl.com</p> | <p>General Magnaplate Edmund Aversenti 1331 US Route 1 Linden, NJ 07036 908-862-6200 Fax: 908-862-6110 eaversenti@magnaplate.com www.magnaplate.com</p> |
| <p>A & P Technologies Andrew A. Head 4595 East Tech Drive Cincinnati, OH 45245 513-688-3200 Fax: 513-688-3201 ahead@braider.com www.braider.com</p> | <p>Engineered Fibers Technology Robert E. Evans 25 Brook Street Shelton, CT 06484 203-922-1810, X335 Fax: 203-922-1814 efiberstec@aol.com www.EFTfibers.com</p> | <p>Gerber Technology Inc Dudley Fenn 24 W. Industrial Park Road Tolland, CT 06084 860-871-8082 Fax: 860-871-3730 dfenn@gerbertechnology.com</p> |



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