

**SOCIETY FOR THE ADVANCEMENT
OF MATERIAL AND PROCESS
ENGINEERING**

NEW JERSEY CHAPTER

FEBRUARY NEWSLETTER & MONTHLY NOTICE

February 3, 2011 (1ST THURSDAY)

A COMPOSITE BLADE FOR A LARGE SCALE CENTRIPAL FAN

ANTHONY TURCHI

RUSSELL SHAFFER

CURTISS-WRIGHT EPD

222 Cameron Drive, Suite 200

Phillipsburg, NJ 08865

Phone: 908-387-6152 (Tony)/ 908-235-8767 (Russell)

Email: aturchi@curtisswright.com/rshaffer@curtisswright.com

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:

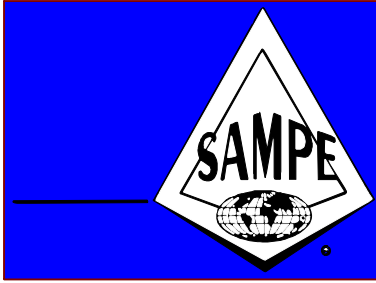
2002, 2003, 2004, 2005, 2006 (award retired after 2006)

SAMPE Chapter Sponsored Conferences:

ISSE – 1990(Anaheim), 1994(Anaheim), 1996(Anaheim), 1998(Anaheim), 2002(Long Beach)

ISTC – 1981(Mt. Pocono), 1989(Atlantic City), 2006(Dallas), 2009(Wichita)

ISEC – 1994(Parsippany)



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2010 – 2011 MEETING SCHEDULE

September 9, 2010 – Henkel’s Approach to Reduction to Hexavalent Chrome in Conversion Coatings, Matthew Clark, Henkel Corporation, Madison Heights, MI	March 3, 2011 – TBD
October 7, 2010 – Improved Performance of Polyaryl Ether Amide Matrix Resins, Borys Schafran, Evonik Degussa Corporation, Parsippany, NJ	April 1, 2011 – Composite and Infrastructure, John Busel, ACMA, Arlington, VA
October 11 – 14, 2010 42 st International SAMPE Technical Conference, Salt Lake City, UT Sponsored by the Utah Chapter	May 5, 2011 – Metal Composite Hybrid Materials: Air, Land and Sea Products, James F. Stevenson, Honeywell Aerospace, Morristown, NJ
November 4, 2010 – Non Destructive Inspection of Composite Structures Using Line Scanning Thermography, Obdulia Ley, Mistras Group, Princeton Junction, NJ	May 17 – 20, 2011 – 55 th International SAMPE Symposium & Exhibition, Long Beach Convention Center, Long Beach, WA Sponsored by Orange County Chapter
December 2, 2010 – Composites in Wind Energy, Peter Toohey, Evonik Degussa, Parsippany, NJ	June 2, 2011 – TBD
February 3, 2011 – A Composite Blade for a Large Scale Centripal Fan, Anthony Turchi and Russell Shaffer, Curtiss Wright EPD, Phillipsburg, NJ	July 7, 2011 – 28 th Annual NJ SAMPE Golf Tournament, Picatinny Arsenal, NJ

Notes The NJ Chapter sponsors a student chapter at Drexel University.

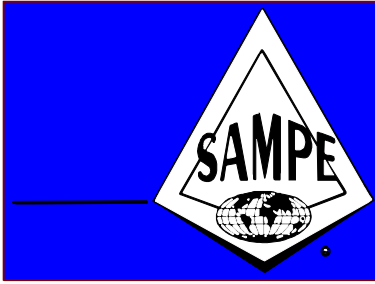
NOVEMBER MEETING

At the December meeting, Mr. Peter Toohey gave an excellent presentation entitled Composites in Wind Energy. The New Jersey Chapter wishes to thank Mr. Peter Toohey for the excellent presentation.

UPCOMING CONFERENCES

**SAMPE 2011 – ISS&E – Long Beach CA. May 23 - 26, 2011
Sponsored by SAMPE Orange County Chapter**

**SAMPE 2011 – ISTC – Foth Worth, TX – Oct. 17 -20, 2011
Sponsored by SAMPE Dallas/Fort Worth Chapter**



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A COMPOSITE BLADE FOR A LARGE SCALE CENTRIPAL FAN

**ANTHONY TURCHI
RUSSELL SHAFFER
CURTISS-WRIGHT EPD**

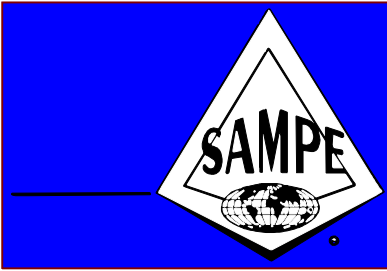
ABSTRACT:

A unique process that combines resin transfer molding (RTM) and a collapsible mandrel was used to create a 3 dimensional hollow airfoil with a monolithic skin / spar structure made completely of carbon fiber and epoxy. The use of a collapsible mandrel, allowed internal features to be created with nearly prepreg fiber and resin consolidation, dimensional conformity and strength without the use of an autoclave or high temperature processing. To close the open airfoil end, RTM carbon fiber and epoxy end caps were manufactured. These end caps were structurally bonded and riveted in place. Bespoke titanium inserts were bonded into the blade ends. The resultant carbon fiber components were approximately 50% lighter than its metallic counterparts they are slated to replace. The components were tested in shear, bending and as a blade extraction from the parent structure. The components exceeded the design parameters with little failure. The early testing program showed the blades were very robust and likely damage tolerant enough for continuous service.

BIOGRAPHY:

Russ Shaffer is the Director of Engineering for Curtiss Wright Flow Control Engineered Pump Division (formerly known as Flowserve Government Marine Business Unit (GMBU), Ingersoll Dresser Pump and Ingersoll-Rand), with responsibility for new product development. He has been with the company for over 24 years with experience in rotating equipment design and development, foundry operations and for the last 16 plus years a primary focus on Composite Material Application and Development. He received a Bachelor's Degree in Mechanical Engineering from the University of Pittsburgh and a Masters Degree in Engineering from Lehigh University.

Anthony Turchi is currently the senior composites engineer for Curtiss Wright Flow Control Engineered Pump Division (formerly known as Flowserve Government Marine Business Unit (GMBU), Ingersoll Dresser Pump and Ingersoll-Rand). His focus is the development and production of composite parts for critical naval rotating equipment. His previous work has been in the areas of composite manufacturing, composites for aerospace, industrial composite applications, and race car engineering. Mr. Turchi holds a Bachelor's degree in Mechanical Engineering and a minor in Business Administration.



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**2012 International SAMPE Technical Conference
Charleston, SC**

At the SAMPE Board of Directors Meeting held in Salt Lake City on October 11, 2010, the New Jersey Chapter of SAMPE was awarded Major Sponsorship of the 2012 International SAMPE Technical Conference (ISTC) which will be held in Charleston, SC on October 22 to 25, 2012. A newly chartered Carolinas Chapter will be invited to join the New Jersey Chapter as the Minor Sponsor.

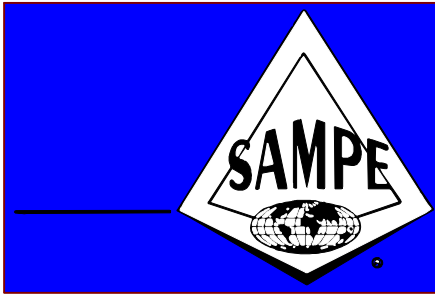
The Theme of the Conference is:

“The New Composites: Innovative, Sustainable, Renewable”

Tracks for the Conference are:

- 1) Rapid Processing**
- 2) Sustainable Energy**
- 3) Composites in Transportation**
- 4) Nanocomposites**
- 5) Maturing Composite Areas**
- 6) Renewable Composites**

If you are interested in assisting the Chapter with the Conference or have potential speakers, or Session Chairman please contact either Ben Rasmussen, Louis Pilato, Howard Kliger or Borys Schafran. Their contact information is listed on page 6 of the Newsletter.



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SPONSORS

The Chapter recently noticed that three of our Sponsors, Automated Dynamics, Coast-Line International and Fiber-Line Incorporated had accidentally been left off the list of Chapter Sponsors. The Chapter wishes to express its apologies for this mistake. The Chapter appreciates the support that all our sponsors give to the Chapter.

NEW JERSEY SAMPE 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 hold monthly technical meetings. 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.

In addition, the Chapter has revised its newsletter to provide greater recognition of its sponsors. A sponsor's corner has been included for sponsors to highlight new product announcements, new business activities, processes and informative information concerning your company. Please submit any items for inclusion in the newsletter to me by email at sampejohn@yahoo.com.

28Th ANNUAL NJ SAMPE GOLF TOURNAMENT

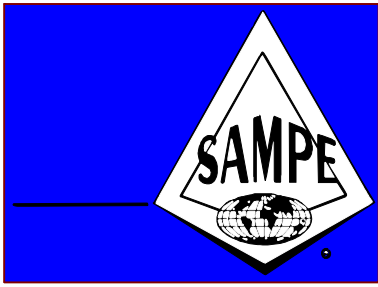
**DATE: JULY 8, 2010; PLACE: PICATINNY GOLF COURSE
PICATINNY ARSENAL, NJ**

TEE TIME: 11:00 A. M.

COST: GOLF AND DINNER: \$60.00

DINNER: \$10.00 (Dinner at approximately 5:00 PM)

CONTACT JOHN OSTERNDORF BY E-MAIL AT sampejohn@yahoo.com



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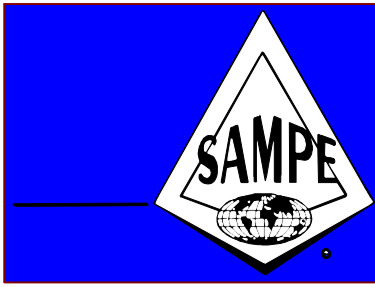
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1983 – 1984 Richard W. Reiter
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1985 – 1986 John Burlage
1986 – 1987 John F. Osterndorf
1987 – 1988 Thomas J. Green
1988 – 1989 Harry S. Katz
1989 – 1990 Benjamin M. Rasmussen
1990 – 1991 Harry Tenney
1991 – 1993 Louis A. Pilato
1993 – 1994 John Burlage
1994 – 1995 Richard A. Walther
1995 – 1996 Frans van Anterpen
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2001 Harry S. Katz

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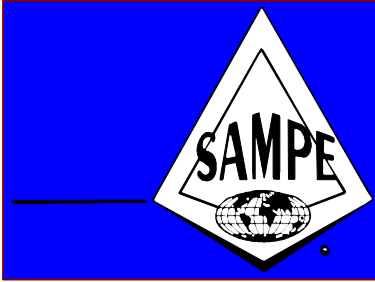
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<p>Airtech International, Inc. Peter Grantham 5700 Skylab Road Huntington Beach, CA 95647 714-899-8100 Fax: 714-899-8179 pgrantham@airtechintl.com www.airtechintl.com</p>	<p>Alcan Baltek Corporation Marc A. Anderson 108 Fairway Court Northvale, NJ 07647 201-767-1400 Fax: 201-387-6631 marc.anderson@alcan.com www.alcanbaltek.com</p>	<p>Evonik Degussa Corporation Borys Schafran 379 Interpace Parkway Parsippany, NJ 07054 973-541-8172 Fax: 973-541-8161 borys.schafran@evonik.com www.evonik.com</p>
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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.co</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>Fiber-Line Inc Tony Constantino 3050 Campus Drive Hatfield, PA 19440 267-885-7144 tconstantino@fiber-lineinc.com www.fiber-lineinc.com</p>



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<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>	<p>Loctite Corporation George Newton 1001 Trout Brook Crossing Rock Hill, CT06067 315-492-7571 george.newton@us.henkel.com www.loctite.com</p>	<p>Prince Sports Incorporated Steve Davis One Advantage Court Bordentown, NJ 08505-7620 609-291-5800 stevedavis@princesports.com www.princesports.com</p>
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<p>Henkel Aerospace Michael Portwood 2850 Willow Pass Road Bay Piont, CA 94565 925-458-8000 Cell 717-817-1532 Michael.portwood@us.henkel.com www.aerospace.henkel.com</p>	<p>Mektech Composites Inc. Aram Mekjian 40 Strawberry Hill Road Hillsdale, NJ 07642 201-666-4880 Fax: 201-666-4303 mekmail@prodigy.net</p>	<p>3M Aerospace Renee Rainboth 3M Center St. Paul, MN 55144-1000 (856) 769-8565 Fax: (856) 769-8566 rarainboth@mmm.com www.3m.com</p>

