



We are Pleased to Present the Featured Guest Speaker for our June 6th Meeting:

## Lignin to Carbon Fiber Louis A. Pilato

### ABSTRACT

Carbon fiber is a unique high strength, high stiffness fiber that provides unsurpassed strength-to-weight ratio when compared to most other materials. Its specific high strength is essential to its use in some modes of transportation mainly aircraft and to a lesser extent in rail and autos. Carbon fibers are firmly embraced in aerospace, selective industrial engineering, military, sports, and super cars. However carbon fibers are relatively expensive when compared to glass fibers or organic fibers as one attempts to expand its use in other market areas. A majority of carbon fiber is based on an expensive precursor, PAN, solution processing as well as high temperature oxidation/carbonization in preparing the costly carbon fiber. Further approximately 2 pounds of PAN are required to obtain one pound of carbon fiber.

There are industrial applications where carbon fiber can be used with a modest reduction in strength and stiffness as well as cost. For over a decade Oak Ridge National Laboratories (ORNL) has proposed less expensive carbon fiber with slightly lower properties such as 25 msi/250 ksi (172 GPa/1.72 GPa) for modulus and strength from less costly precursors such as lignin and other materials.

The presentation will provide a brief overview of the PAN carbon fiber process, recent carbon fiber developments that are contributing to increased carbon fiber capacities, lignin precursor background information, and 2013 ORNL carbon fiber strategy based on several carbon fiber precursors besides lignin.

### BIOGRAPHY

Dr. Louis Pilato is a member of the Society of Advancement of Material and Process Engineering (SAMPE) and is one of the Directors of the NJ SAMPE Chapter He was installed as a Fellow of the Society in 2001. He is also a member of the American Chemical Society. Dr. Pilato consults in a variety of Chemical and Materials Science disciplines such as Resin Matrix Systems, Phenolic Resin Technology, and Nanotechnology. He has presented many SAMPE tutorials related to Nanotechnology and Resin Matrix Systems. He is the author of 4 books. The most recent book is titled, "Phenolic Resins: A Century of Progress," and was published in May, 2010.

### MEETING DETAILS

Place: Bridgewater Manor, Bridgewater, NJ; (908) 658-3000

Time: 6:15 – 8:30

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 [jfo0956@gmail.com](mailto:jfo0956@gmail.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:





### 2012 – 2013 Meeting Schedule

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**September 8, 2012** – Multi-Scale Modeling and Penetration Mechanics of Composites, Bazle Z. Haque, University of Delaware Center for Composite Materials

**October 22 – 25, 2012** – 44<sup>th</sup> ISTC, Charleston, SC. NJ Chapter Sponsor.

**December 6, 2012** – Stress Rupture Failure of a Continuous Fiber Composite Water Holding Tank, John DeFranks, IMR Test Labs

**February 7, 2013** – Anand Rau, Toray Carbon Fibers

**March 21, 2013** – Joe Pantalone, Composites One

**April 4, 2013** – JP Masson, Evonik Degussa

**May 2, 2013** – Brian Conybeare, Tappen Zee Bridge Project

**May 6-9, 2013** – 57<sup>th</sup> ISEE, Long Beach Convention Center, Long Beach CA

**June 6, 2013** – Louis Pilato, Pilato Consulting

**July , 2013** – 30th NJ SAMPE Golf Tournament, Picatinny Arsenal



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Louis A. Pilato  
Pilato - Consulting  
732-469-4057/fax: 732-764-9747  
[lapilato@optonline.net](mailto:lapilato@optonline.net)

Benjamin M. Rasmussen  
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## Spotlighting Local Chapter News

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We announce our slate of officers and chairs for the next year.

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Ben Rassmusen, our president for as long as most of us can remember, has recently undergone major surgery at Sloan Kettering Hospital in NYC.

We are happy to report that he is now home and resting comfortably and recuperating. Though he won't be at our June meeting, we hope he will be able to join us by September.

At the International Board of Directors meeting in Long beach this past May 6<sup>th</sup>, a vote approved the global reorganization of SAMPE. Though tis will have no impact on our local activities, it should be noted that we will now have a North American Board of Directors, a European Board of Directors, a Japan Board of Directors, and plenty of room for growth. And an International Board of Directors.

**Whoopee!**