

Pre-Conference Seminar 2 – Dec. 9, 2009 – 1:30-5:00 pm

The Opportunities for Carbon Fiber in Current and Emerging Markets

Description: The use of carbon fiber composites as measured by the volume of material attributed to finished composite structures is wide and diverse. Demand for raw carbon fiber in 2008 was approximately 32,000 MT – more than 13% higher than 2007 levels. Despite spending cuts in many sectors of the economy, over the next 10 years, annual volume of carbon fiber-reinforced plastic (CFRP) composites produced around the world is expected to grow by nearly 300% over current levels. This seminar will provide a comprehensive global outlook for the demand for carbon fiber materials and services, with a dedicated section on the rapidly evolving Chinese carbon fiber composite industry, including manufacturers and market demands. The impact of these evolving markets will be analyzed in relation to carbon fiber supply chain, which has announced approximately \$2.5 billion in capacity expansion to meet demand through 2014.

Instructor: ANTHONY (TONY) ROBERTS has more than 40 years experience in the carbon fiber and advanced composites industries. From the 1970s to the 1990s, he was with Courtaulds Grafil (Coventry, U.K.), developing applications for carbon fiber in the aerospace, industrial and sporting goods sectors in Europe, Japan and Southeast Asia. He subsequently moved to Mitsubishi Rayon Co. Ltd., working in the U.S. as sales and marketing director for subsidiary companies Grafil Inc. and Newport Adhesives and Composites Inc. From 2005 to present, Roberts has served the industry as an independent consultant, working with a range of advanced materials and applications specializing in carbon fiber. He has prepared individual client studies and in 2006 produced a world carbon fiber marketing report. He has recently completed a strategic carbon fiber market evaluation: “The Carbon Fibre Industry Worldwide 2008 - 2014,” which will focus on current markets and future supply and demand. Roberts is now involved as a marketing consultant for the Chinese carbon fiber industry.

Instructor: CHRIS RED, editor and vice president of market research at Composite Market Reports (CMR), has 12 years experience in producing research and developing market trends and forecasts related to the use of advanced composites. As head of CMR’s market research and consultancy operations, Chris has also written and contributed to dozens of reports and projects on the topic of composites, manufacturers and competitive analysis. As editor for CMR he is responsible for keeping abreast of the advanced composites industry, selecting, researching and writing the company’s two monthly composites newsletters. In addition to CMR’s own publications, he is a frequent contributor to composite industry publications and is currently a contributing writer for *High-Performance Composites* and *Composites Technology* magazines.

Program Outline

Introductions (Scott Stephenson, Director, CompositesWorld Conferences)

Part 1: End-User Market Outlooks

- Aerospace: Commercial transports, military fixed-wing, helicopters, private aircraft, engines, naval, missiles and space, carbon-carbon, etc.
- Consumer and Recreational: sporting goods, automotive, marine, medical
- Energy and Industrial: Wind energy, compressed gas vessels, oil and gas, industrial rollers, civil engineering, tooling, pultrusion.

Part 2: The Emergence of China

- Chinese markets for CFRP
- Expanding manufacturing base
- Development of Chinese supply base

Break

Part 3: Competitive Market for Carbon Fiber - End-user demand: 10-year forecast –

Instructors compare & contrast outlooks

- Aerospace markets
- Consumer and recreational markets
- Energy and industrial markets
- Impact of disruptions to the demand for CF
- Updated supplier base and strategic comparison
 - Nameplate capacities – small/large; pitch capacities; “commercial”/standard/intermediate/high modulus
 - Side-by-side comparison
 - Expansion of CF production capacity
- CF supply vs. demand
 - Realizable capacity
 - Balance of supply and demand
- Strategic adjustments from earlier plans to meet current realities
 - How are CF manufacturers adjusting growth plans to meet realities?
 - Hidden opportunities?

Q & A