

Seminars For Engineers Presents in association with BTG Composites LLC:  
**Composite Materials Design, Testing & Fabrication**  
A Two Day Technical Seminar

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**About the Seminar:**

This two day seminar was developed to educate engineers and other technical personnel about conventional and cutting-edge aspects of composite/FRP materials design, testing and fabrication techniques. Such topics as primary resin and fiber reinforcement construction materials, general composites design methodology, traditional fabrication techniques, advanced manufacturing technologies, sandwich core and foam design, composites test and inspection methods, and failure criteria are covered. Though theory is included, the course emphasizes practical design considerations for selecting materials in order to optimize design and application performance. Design for manufacturability, economic practicality and weight considerations as important tradeoffs are also addressed.

**Who Should Attend:**

This seminar is beneficial for aerospace, military, materials, infrastructure, energy and transportation industry engineers who are involved in any materials selection and characterization, composites design and manufacturing, product optimization, and testing and inspection certification (NDT, NDI, QA). The instructor has educated over 2,000 engineers in these technology areas.

**Benefits of attending:**

- Gain a better understanding of various resins and fiber reinforcements available
- Understand the cost and performance tradeoffs with various material options
- Become aware of composites advantages and disadvantages in applications
- Learn critical design aspects pertaining to composites (vs. metals) applications
- See what fabrication processes are used (filament winding, fiber placement, pultrusion, resin infusion, vacuum bagging, contact molding, tape laying, etc.)
- Understand the limits of various fabrication methods used today
- Learn about traditional test methods (ASTM, SACMA, ISO, SAE, etc.)
- Gain an understanding of NDT/NDI methods, their applicability and limits
- Learn about what failure criteria works best in different applications

**Course concepts:**

- Advanced composites and FRP composites
- Composite design methodologies
- NDT/NDI methods for locating composite defects
- Certification requirements and design implications
- Advanced composites manufacturing technologies
- Test methods and standards for composites
- Resin and fiber reinforcement materials
- Traditional low cost manufacturing methods
- Sandwich core and joint design aspects
- Failure criteria and product application