



INTERNATIONAL SOCIETY FOR ADVANCED MANUFACTURING

Brandywine Valley
Chapter

October Hybrid Technical Meeting + CCM Facility Tour

Tuesday – October 11, 2022 @ 6.00 PM

Multi-Scale Carbon Nanotube Hybrid Composites: Novel Applications in Smart Garments and Structural Health Monitoring

By Erik T. Thostenson, PhD

Professor at UD, President and Co-Founder [MCET technologies](#)

Department of Mechanical Engineering; Department of Materials Science and Engineering and Center for Composite Materials. University of Delaware, Newark, DE 19716

Locations: Virtual and In-Person

- **Virtual meeting with Zoom:**
<https://us02web.zoom.us/j/84967693314?pwd=anR3eUx0aVlnREl2SGlPTU1Gcmp0UT09>
- **In-Person at 106 Composites Manufacturing Science Laboratory**
 - **([Center for Composite Materials](#))** - Academy St, Newark, DE 19716
 - **Dinner: Free Students, \$10 ASM Members, \$15 Non-Members**
 - **Parking:** On-street metered parking is available in front of the building on Academy Street and Municipal Lot #1 (west of CCM and accessible from Main Street and Delaware Avenue).

Please sign up for the meeting:

<https://docs.google.com/forms/d/e/1FAIpQLSf-UuNTZrhDkh5HL4HEh6T1fFzXintEvUR4aa94hEWaDOBBRg/viewform>

Light Dinner/Social hour 6:00 PM, Presentation 6:30 PM, Facility Tour 7.30PM

Abstract: This presentation highlights recent research in processing, characterization and modeling of electrically conductive carbon nanotube-based composite materials. Because carbon nanotubes have diameters three orders of magnitude smaller than traditional advanced fibers there is a unique opportunity to create multi-scale hybrid composite systems where reinforcement scales are combined.

Our recent research has developed a highly efficient and industrially scalable electrophoretic deposition technique for nanoscale hybridization. We have demonstrated that conducting carbon nanotube networks can be utilized as highly sensitive sensors. The potential applications of these novel sensors will be discussed and recent research on utilizing these sensors for structural health monitoring of bridges and the development of smart garments for physical rehabilitation will be highlighted. A startup company, [MCET Technologies](#), has been founded to accelerate commercialization of these discoveries.



Bio: Erik Thostenson is currently Professor in the Department of Mechanical Engineering at the University of Delaware and holds a joint appointment in the Department of Materials Science and Engineering.

He is affiliated faculty of the University of Delaware's Center for Composite Materials and also President and Co-Founder of MCET Technologies.

Professor Thostenson's research focuses on processing and characterization of composite materials focusing on carbon nanotube and advanced fiber reinforcements toward the development of novel multifunctional composites.

His research in composite materials is widely cited in the scientific literature (~23,000 citations). He received his MS and PhD from the University of Delaware and his BS in Composite Materials Engineering (summa cum laude) from Winona State University.

Brandywine Valley Chapter is inviting you to a scheduled Zoom meeting.

Join Zoom Meeting

<https://us02web.zoom.us/j/84967693314?pwd=anR3eUx0aVlnREl2SGIPTU1Gcmp0UT09>

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