

June 5-6  
National Wind Technology Center  
Boulder, CO

# ADVANCES IN WIND ENERGY

Exploring Advanced Materials and  
New Repair Techniques for the Wind Industry

Composites One and the Closed Mold Alliance, along with  
Magnum Venus Products and IACMI - The Composites  
Institute invite you to attend Advances in Wind Energy!

Advances in Wind Energy is focused on exploring advanced materials,  
new repair techniques and inspection processes, and informing the growing  
wind energy workforce on the basic manufacturing processes you need to know.  
During this two-day workshop, leading wind energy professionals will provide engaging  
presentations and hands-on demonstrations about the wind industry outlook, new  
technologies, and life cycle issues.

Register Online at [www.advancesinwindenergy.eventbrite.com](http://www.advancesinwindenergy.eventbrite.com)



## **Finding Opportunity in Future Blade Designs**

GE will present market drivers affecting the industry in the near future, and the opportunity of current market to drive down cost. Also reviewed will be the challenges of introducing new materials, and the typical design process and development time for new material. Additionally GE will address how technology can enable opportunity for OEM and supply chain, and the importance of having durable long term solutions for the end customer.

## **Principles of Damage Repair of Composite Structures**

Any fiber-reinforced composite, regardless of whether it is fiberglass, carbon fiber, Kevlar, or whatever, carries the structural loads primarily through the fibers. In a load-carrying repair, it is important to align the repair ply orientations with the original structural ply orientations. It is also mandatory to ensure a good strong bond between the repair plies and the underlying structure. Presented by Abaris, examples of various damage repair scenarios and techniques will be highlighted.

## **Utilizing Core Type Properly in Blade Laminates**

The use of sandwich construction is well known in the production of wind blades and nacelles. A dynamic presentation and demonstration will showcase the factors that influence the total cost of AIREX® and BALTEK® core materials as well as the impact on laminate weight. New SealX™ products to limit the resin uptake will be highlighted.

## **Leading Edge Protection**

3M will review Leading Edge Protection solutions, comparing coatings and tapes with particular focus on the performance improvements of 2nd Generation Tapes now available. Additionally, 3M will highlight the keys to successful applications, addressing the impact of temperature, humidity, cleanliness, top coats and fillers on the long term performance of Leading Edge Protection solutions.

## **Vacuum Infusion**

Chomarat G-flow 500L is a structural flow media made with 100% glass fibers for the vacuum infusion process. This demonstration showcases the innovative design which allows it to distribute the resin during infusion without adding an external or internal flow media offering labor savings and the best compromise between mechanical properties and flow performance.

## **Thermoplastics**

A fact-filled review of the manufacture of parts using fiber reinforced thermoplastics. Glass and carbon reinforced polypropylene, PTEG, and nylon will be reviewed. Discussion will include tooling and processing of thermoplastics as well as automation of the manufacturing process. Various thermoplastic sample parts will be on hand.

## **Nacelle (LRTM Process)**

Light Resin Transfer Molding (LRTM), a versatile closed mold process is perfect for a variety of parts. This session will showcase the advantages LRTM has to offer those considering converting to closed molding. A scaled down glass / epoxy nacelle will be molded during this demonstration highlighting the capabilities of the LRTM process.

## **Additional Demonstrations and Presentations to Include:**

- Blade Inspection Presented by Olympus
- Repairing Blades Using Wet Lay-Up and Vacuum Bag Techniques
- Recycling Blades and Materials
- Wind Standards
- Adhesives for Wind Blades
- NEW - Blade Putty by Mankiewicz
- NEW - Products by Sika Demonstrated
- Automation
- High Temperature Tooling
- Tour of the National Wind Technology Center
- And So Much More!

# TRAVEL

Advances in Wind Energy will be held at the National Wind Technology Center, June 5-6, 2018. Travel arrangements should be made to fly into Denver International Airport in Denver, CO.



## National Wind Technology Center

18200 CO-128  
Boulder, CO 80303

### Hotel Accommodations

The National Wind Technology Center is located in close proximity to Broomfield, CO.

#### Hyatt House Boulder/Broomfield

813351 W Midway Blvd  
Broomfield, CO 80020  
(720) 890-4811

#### Omni Interlocken Golf Resort

800 Eldorado Blvd  
Broomfield, CO 80021  
(303) 464-9000

#### Residence Inn by Marriott

455 Zang St  
Broomfield, CO 80021  
(303) 466-7007

# REGISTER

To register for the workshop visit [www.advancesinwindenergy.eventbrite.com](http://www.advancesinwindenergy.eventbrite.com) or complete the form below and email to [samantha.rooney@nrel.gov](mailto:samantha.rooney@nrel.gov). For additional information on registration, contact Samantha Rooney at 303.384.6924.

Please be advised registration for this event does not guarantee event access and/or participation. Foreign nationals may not be allowed or may be limited per partner and facility regulations.

Valid documentation required for all attendees. All attendees that are U.S. Citizens will need to bring a valid proof of identification. Foreign National attendees must register by May 11, 2018 in order to allow sufficient time to complete the approval process needed to visit the facility. For more information on required documentation for foreign nationals please contact Samantha Rooney at [samantha.rooney@nrel.gov](mailto:samantha.rooney@nrel.gov) or at 303.384.6924.

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Country: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Are you a U.S. Citizen? Yes \_\_\_\_\_ No \_\_\_\_\_ Do you have food related allergies? Yes \_\_\_\_\_ No \_\_\_\_\_

Will you be traveling to this event? Yes \_\_\_\_\_ No \_\_\_\_\_