

Sandia National Laboratories

2012



Wind Turbine

Blade Workshop



Sandia
National
Laboratories



U.S. DEPARTMENT OF
ENERGY

Tuesday, May 29

6:00-8:00pm: Early check-in with a Reception Hosted by Momentive

Wednesday, May 30

(Check-in and Continental Breakfast 7:00-8:30am)

Welcome/Industry Status 8:30am

Welcome, D. Todd Griffith, Sandia National Laboratories

DOE Wind and Water Program, Mark Higgins, U.S. Department of Energy

Washington Perspective on Wind Energy, Jeff Bingaman, U.S. Senator, N.M.

Sandia Energy Program, Rick Stulen, Sandia National Laboratories

Wind Industry Status, Daniel Laird, Sandia National Laboratories

Trends in Turbine and Blade Technology – 2012, D. Todd Griffith,
Sandia National Laboratories

Break (10:05am-10:35am)

Turbine Manufacturers 10:35am

Wind Blade Technologies to Enable New Paradigms, Wendy Lin, General Electric

Alstom Perspective on Offshore Rotors, Loads and Controls, Albert Fisas, Alstom

Blade Manufacturers 11:40am

DOE Advanced Manufacturing Initiative – Blades, TPI Update, Steve Nolet,
TPI Composites

Wind Turbine Blade Effects on Turbine Design and Lifecycle Cost, Carl LaFrance,
Molded Fiber Glass Companies (MFG)

Lunch/Speaker Panel (12:30pm-2:00pm)

Blade Testing 2:00pm

Blade Testing at the National Wind Technology Center, Dave Snowberg and
Mike Desmond, National Renewable Energy Laboratory

Rotor Blade Testing and International Standards, Derek Berry,
National Renewable Energy Laboratory

Blade Testing at WMC, Maaik Borst, Knowledge Centre Wind Turbine Materials
and Constructions (WMC)

Break (3:15-3:35pm)

Rotor Testing 3:35pm

DOE/Sandia Scaled Wind Farm Technology (SWiFT) Facility Update, Jon White,
Sandia National Laboratories

The Role of Turbulence on Wind Energy: From Single Blade to Wind Arrays,
Luciano Castillo, Texas Tech University

Adjourn (4:30pm)

6:00-8:00pm: Reception Hosted by BASF

Thursday, May 31

Track I

(Check-in and Continental Breakfast 7:00-8:30am)

Material Suppliers and Testing **8:30am**

The SNL/MSU/DOE Fatigue Program: Recent Results, John Mandell,
Montana State University

Blade Materials Fatigue Testing and Modelling, Rogier Nijssen, Knowledge Centre
Wind Turbine Materials and Constructions (WMC)

Recent Developments in Materials and Processes for Blades at Hexcel,
Chris Shennan, Hexcel

Break (9:45-10:10am)

Material Suppliers and Testing (continued) **10:10am**

Advanced Material Solutions for Blade Construction, Jay Bhatia, BASF

RodPack: A New Form of Aligned Fiber Reinforcement for Wind Blade Spar Caps
Joel Gruhn, NEPTCO

Recent Core Materials Developments/Applications for Blades at Milliken,
Fred Stoll, Milliken & Company

Polyurethane Structural Composites for Wind Turbine Blades, Usama Younes,
Bayer Material Science

Lunch (11:50-1:20pm)

Material Suppliers and Testing (continued) **1:20pm**

Ultrablade® Fabrics – Longer Fiberglass Wind Blades are Possible, Mala Nagarajan,
Owens Corning

Technical and Economic Feasibility Study of Automated Blade Manufacturing,
Juan Serrano, PPG

Manufacturing and Inspection **2:10pm**

Research Advances for Wind Blade Manufacturing, Frank Peters, Iowa State University

*Rapid Flaw Detection in Wind Turbine Blade Assemblies Using Phased Array
Ultrasonics*, Dennis Roach, Sandia National Laboratories

Break (3:00-3:35pm)

Manufacturing and Inspection (continued) **3:35pm**

BRC: Effects of Defects, Trey Riddle, Montana State University

Fiberoptic Sensing for Blades, Sandie Klute, LUNA Technologies

Recent Developments/Applications in Blade Inspection, John Newman,
Laser Technology Inc.

Adjourn (4:50pm)

Thursday, May 31

Track II

(Check-in and Continental Breakfast 7:00-8:30am)

Blade Research and Innovative Design 8:30am

Change in Failure Type When Wind Turbine Blades Scale-up, Find Jensen,
Bladena

Potential and Limits for Sweep- and Laminate-Induced Torsion Coupling in Blades
Kyle Wetzel, Wetzel Engineering

Design Optimization of Bend-Twist Coupled Wind Turbine Blades, Carlo Bottasso,
Politecnico di Milano

Break (9:45-10:10am)

Blade Research and Innovative Design (continued) 10:10am

Advanced Wind Turbine Blade Structural Modeling, Mark Capellaro,
University of Stuttgart

*Enhanced Test-Based Design Approach to Improving Reliability of Wind
Turbine Blades*, Ken Lee, Wetzel Engineering

Development of Trailing Edge Flap Technology at DTU Wind (Risoe), Helge Madsen,
Risoe

Update on Sandia Active-Aero Rotor Field Test, Jon Berg, Sandia National Laboratories

Lunch (11:50-1:20pm)

Blade Research and Innovative Design (continued) 1:20pm

Sandia 100-m Blade Research Update, D. Todd Griffith, Sandia National Laboratories
Design of Thick Airfoils for Wind Turbines, Francesco Grasso, Energy Centre of
the Netherlands (ECN)

Insights Gained into Rotor Performance and Loads Through Three-dimensional CFD,
Case van Dam, UC-Davis

*System Identification for Linear Time Varying Systems with Application to Rotating
Turbines and Continuous Scan Laser Vibrometry*, Matt Allen,
University of Wisconsin

Break (3:00-3:35pm)

Wind Turbine Design and Analysis Codes 3:35pm

Overview of Sandia Wind Turbine Blade Analysis, Brian Resor,
Sandia National Laboratories

VABS: Going Beyond Linear Elastic Cross-Sectional Analysis, Wenbin Yu, Utah State

Overview of NREL Design Codes, Khanh Nguyen,
National Renewable Energy Laboratory

Adjourn (4:50pm)

Friday, June 1

(Check-in and Continental Breakfast 7:00-8:30am)

Radar **8:30am**

Sandia Wind Turbine RADAR Research, Dave Minster, Sandia National Laboratories

Water Power **9:00am**

Rotor Design for Water Power, Rich Jepsen, Sandia National Laboratories

Distributed Wind **9:30am**

Current and Future R&D within Distributed Wind Technology, Rick Damiani,
National Renewable Energy Laboratory

Break (10:00-10:30am)

Rotor Design: Offshore **10:30am**

Vertical-Axis Wind Turbines Revisited: A Sandia Perspective, Matt Barone,
Sandia National Laboratories

Reliability and Standards **11:00am**

CREW Project Update, Alistair Ogilvie, Sandia National Laboratories
Blade Reliability Collaborative (BRC) Overview, Josh Paquette,
Sandia National Laboratories

Closing Remarks **12:00pm**

D. Todd Griffith, Sandia National Laboratories

Adjourn (12:05pm)



<http://windpower.sandia.gov>

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