

# Modeling and Testing of 9m Research Blades<sup>\*</sup>

Joshua Paquette<sup>†</sup>, Daniel Laird<sup>‡</sup>, and D. Todd Griffith<sup>§</sup>  
*Sandia National Laboratories<sup>\*\*</sup>, Albuquerque, NM, 87185, USA*

Laura Rip  
*National Renewable Energy Laboratory, Golden, CO, 80401, USA*

Wind turbines and their blades continue to grow in size. The resulting increase in blade mass and cost requires the implementation of new design concepts. Among these is the selective use of carbon fiber. In 2002, Sandia National Laboratories (SNL) initiated a research program to investigate the use of carbon fiber in 9m subscale blades. Two sets of blades were designed, one with a carbon spar-cap and the other with off-axis carbon in the skin which produces bend twist coupling. Blades of each design have recently undergone modal and structural testing. In addition, finite element analysis (FEA) of both blades has been performed. This paper describes the design, testing, and analysis work that have been completed.

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† Member of the Technical Staff, Wind Energy Technology Department, MS-0708

‡ Principal Member of the Technical Staff, Wind Energy Technology Department, MS-0708

§ Structural Dynamics Research Department, MS-0196

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