

عنوان مقاله:

Design and Manufacturing of Prepreg Layer Used in Wind Turbine Blades' Composite

محل انتشار:

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خلاصه مقاله:

Wind turbine blades are manufactured using advanced composite materials as prepregs due to their specific properties and their flexibility for component construction. Their specifications depend on type, percentage and orientation of the fibers, type of matrix or resin, bond strength between fibers and matrix and selection of proper manufacturing parameters including cure temperature/time. Following the study on different types of prepregs used in wind turbine blades' composite, in this research, the main aim is manufacturing of prepreg based on epoxy resin system by use of unidirectional E-glass fibers. The effect of processing conditions on prepreg properties including flow ability, adhesion, flexibility and shelf life were investigated upon changing curing time and temperature. Prepreg specimens were made at 011, 001 and 021 °C for 5, 01 and 21 minutes. Physical and rheological tests have been performed on specimens to evaluate their properties. The B-Stage measure tests showed at least 55 days storage ability at room temperature for produced prepregs. Mechanical tests for the four ply unidirectional E-glass epoxy composite showed 0193Mpa and the modulus equals with 99 Gpa for tensile strength and 0101 Mpa and the modulus equals with 25Gpa for bending strength

کلمات کلیدی:

Prepreg, Wind Turbine Blade, Epoxy – Unidirectional E-Glass

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