

Development of a New Device for Bending Fatigue Testing

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Abstract : This work presented an original bending fatigue-testing setup for fatigue characterization of composite materials. A three-point quasi-static setup was introduced that was capable of applying stress control load in different loading waveforms, frequencies, and stress ratios. This setup was equipped with computerized measuring instruments to evaluate fatigue damage mechanisms. A detailed description of its different parts and working features was given, and dynamic analysis was done to verify the functional accuracy of the device. Feasibility was validated successfully by conducting experimental fatigue tests.

Keywords : bending fatigue, quasi-static testing setup, experimental fatigue testing, composites

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