

Sequential Test Planning for Polymer Composites

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Abstract

There has been a lot of development in optimum test planning for an accelerated life test (ALT), most of the methods assume that the true parameter values are known. However, in reality, the true model parameters may depart from the planning values. Therefore, we use Bayesian framework and propose a sequential test planning strategy for ALTs. Furthermore, we apply the proposed strategy to the accelerated cyclic fatigue tests of polymer composite materials which are lightweight and comparable levels of strength and endurance. We also use extensive simulation to study the properties of the proposed sequential test planning strategy.