

**ACCELERATED DESTRUCTIVE DEGRADATION TESTS:
DATA, MODELS, AND ANALYSIS**

by

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ABSTRACT

Degradation data analysis is a powerful tool for reliability assessment. Useful reliability information is available from degradation data when there are few or even no failures. For some applications the degradation measurement process destroys or changes the physical/ mechanical characteristics of test units. In such applications, only one meaningful measurement can be taken on each test unit. This is known as "destructive degradation." Degradation tests are often accelerated by testing at higher than usual levels of accelerating variables like temperature.

This chapter describes an important class of models for accelerated destructive degradation data. We use likelihood-based methods for inference on both the degradation and the induced failure-time distributions. The methods are illustrated with the results of an accelerated destructive degradation test for an adhesive bond