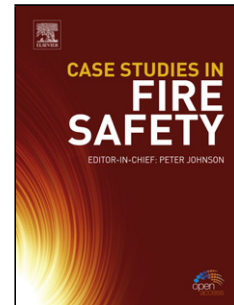


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Prediction of Corrosion Fatigue Crack Growth Rate in Alloys. Part I: General Corrosion Fatigue Model for Aero-Space Aluminum Alloys

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Highlights

- A General Corrosion Fatigue Model (GCFM) was developed.
- GCFM based on consideration of advection between the crack and external environment.
- Crack growth rate is regarded as the sum of the stress corrosion cracking and cyclic loading.
- The GCFM predicts change in the potential drop and current density during crack propagation.

Abstract

In this work, a General Corrosion Fatigue Model (GCFM) was developed for predicting corrosion fatigue crack growth rate (CFCGR) in metals under cyclical loading. The GCFM is based on an equation for the potential drop from the external surface to the crack tip of metals as

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