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Title: Fatigue, Wear and Corrosion of Materials and Structures

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Summary

The scope of the symposium includes characterization, testing, and modeling of degradation processes such as Wear, Corrosion and Fatigue. This includes compromise of functionality and lifetime with damage phenomena due to wear, corrosion and/or cycling loading. Phenomena of interest range from all classes of engineering materials (metals, polymers, elastomers, ceramics, and composites) to engineering components and structures. We encourage submission of papers that combine understanding and characterization of corrosion and/or fatigue mechanisms, application of corresponding material parameters to problems in enginering components, structures, and design, as well as physically-based models to address the mechanics and the needs for calculative and/or testing methods for accurate wear, corrosion and/or fatigue design. Emphasis is given on engineering material behavior when influenced by structure, process and environment, especially in reference to the design process to prevent and avoid premature failure in operation.

Subjects treated in the symposium address:

- Wear and Fatigue properties of engineering materials
- Novel testing and characterization methods
- Multiaxial fatigue and complex loading effects on material behavior, components and structures
- Effects of manufacturing processes on wear and/or fatigue properties
- Effects of surface treatment on Wear and/or Fatigue
- Wear and Fatigue modeling and calculation
- Fracture Mechanics and crack growth
- Damage Mechanics
- Life prediction and durability
- Thermo-chemical-mechanical degradation
- Characterization and Modelling of Corrosion
- Corrosion Engineering
- Design Engineering