

SUBMIT AN ABSTRACT FOR THE FOLLOWING SYMPOSIUM

MATERIALS DEGRADATION AND DEGRADATION BY DESIGN

Steels in Extreme Conditions

Limits on damage tolerance of metals in extreme environments are grand technical challenges of today's industry. The sophisticated design of steels for applications in extreme environments is often demanding due to complex, dynamic, and multi-scale damage processes amplified by environmental effects. This symposium is dedicated to discussing advancements in structural steels exposed to a range of extreme environments and their failure analysis. These include, but are not limited to, hydrogen embrittlement, CO2 degradation, cryogenic temperatures, thermal cycling, irradiation, stress corrosion cracking, and creep failure at elevated temperatures, as well as the synergistic effects of these environments. The discussion will also address diverse load-bearing scenarios such as forming, fatigue, and high-rate conditions. By accommodating studies of different extreme environments in this symposium, we aim to promote knowledge transfer across these conditions, foster cross-disciplinary insights, and ultimately accelerate the development of new understanding in the field.

SPONSORED BY:

TMS Structural Materials Division; TMS Steels Committee

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