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TMS2019
 148th Annual Meeting & Exhibition

CALL FOR ABSTRACTS

March 10–14, 2019
 San Antonio, Texas, USA

SUBMIT AN ABSTRACT TO:

NANOSTRUCTURED MATERIALS

Micro- and Nanomechanical Testing in Harsh Environments

Most materials are exposed to an environment different than that found in laboratory conditions, and it has been recognized that a material's properties change based on the environment to which it is exposed. Therefore, understanding the mechanisms by which a material's properties change in harsh environments (e.g. high and low temperatures, high strain rate deformation, and corrosive agents) and under non-ambient conditions is key to understanding materials behavior in service conditions.

Micro- and nanoscale materials testing has been often utilized for a deeper understanding of the basic phenomena of materials degradation and behavior. An obvious next step is to expand these valuable measurements to the environments that materials are exposed to during service conditions in order to study the synergistic effects between harsh environments and materials property degradation on the nanoscale. The harsh environments materials experience can have a direct impact on the performance of nano-devices and nano-enabled energy systems in many different applications.

Topics include:

- Nanoindentation and micromechanical testing at non-ambient conditions
- Small scale mechanical behavior under harsh environments and/or dynamic loading conditions
- New approaches for reliable testing at elevated and low temperatures
- Accelerated testing techniques
- In-situ electrochemical loading during micromechanical testing

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Abstract Deadline is July 1, 2018.
 Submit online at www.programmaster.org/TMS2019

Questions?
 Contact programming@tms.org