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**MARCH 14-18, 2021 • ORLANDO WORLD CENTER MARRIOTT
ORLANDO, FLORIDA, USA**
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SUBMIT AN ABSTRACT TO:

NANOSTRUCTURED MATERIALS

100 YEARS AND STILL CRACKING: A GRIFFITH FRACTURE SYMPOSIUM

While today's materials scientists know the Griffith criteria and its eventual impact on basic research, many may not be aware on how little impact it initially had on basic and applied research. Particularly, there was little academic instruction, and industry relied on the Charpy V-notch test as a standard. One could tell the impact by examining Timoshenko's 1941 book. Here it was mentioned that Griffith admitting that "very fine scratches on glass do not produce a weakening effect was because there were internal defects in the glass with just as high a stress concentration factor." Following Timoshenko was Nadai's 1951 book which demonstrated some advances in experimental insight, as electron microscopy and sophisticated test systems for fracture analysis were in their infancy.

It was not until the rapid advances in aerospace and aeronautics in the late 50's that basic research was able to widely take advantage of the Griffith methodology at large research enterprises and establish the ASTM E-24 fracture toughness standard. While this was largely a response to needing improved aircraft and "deeper" space probes, it provided all engineering and basic science an order of magnitude increase in sophistication. In recognition of the importance of Griffith's work on the materials community, this symposium will provide researchers the opportunity to provide of fundamental and practical advances in fracture, with a focus on small scales, dynamics, expanded temperature and time, and imaging advances, and to provide historical context to their current work.

The subject areas of the symposium include, but are not limited to:

- Local analysis of stress and strain around crack tips
- Fracture of nanostructured materials (thin films, printed structures, nanocrystalline materials, ...)
- Size effects on fracture behavior
- New developments in fracture testing techniques using coupled in-situ measurements (electrical, optical, mechanical, etc.) or in enhanced environments (high temperatures, humidity controlled, etc.)
- Atomistic and finite element modelling of fracture
- Brittle fracture in heterogeneous materials
- Strategies to avoid brittle fracture
- Interface and grain boundary fracture

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SYMPOSIUM SPONSORS

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Abstract Deadline is July 1, 2020. Submit online at
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Questions?
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