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

## **ADVANCED MATERIALS**

# **MATERIALS FOR HIGH TEMPERATURE APPLICATIONS: NEXT GENERATION SUPERALLOYS AND BEYOND**

Nickel-based superalloys possess an excellent combination of high temperature mechanical properties and environmental resistance, resulting in their wide-spread use in challenging environments found in aircraft engines, land-based power generation gas turbines, nuclear power generation systems, and chemical/petrochemical plants. However, there is a strong need of materials that can enable a revolutionary increase in temperature capability beyond these Ni-base superalloys. Refractory metal-based alloys and refractory metal-based intermetallics are examples of such candidate materials. The goals of this symposium are to discuss recent progress in the development of high temperature material systems that can offer capabilities beyond current Ni-base superalloys and to understand their status, entitlement and limitations, as well as to understand challenges in the use and development of advanced Ni-base superalloys.

Topics for discussion include thermodynamics, microstructural design and long term stability, processing, physical properties, mechanical behavior, and environmental resistance of:

1. current and next generation Ni-base superalloys,
2. refractory metal based materials,
3. intermetallic based materials,
4. High Entropy/Compositionally complex/Multi-principal element alloys,
5. coatings.

## **ORGANIZERS**

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## **SYMPOSIUM SPONSORS**

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**Abstract Deadline is July 1, 2020. Submit online at**  
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**Questions?**  
Contact [programming@tms.org](mailto:programming@tms.org)