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**FEBRUARY 27-MARCH 3, 2022**  
**ANAHEIM CONVENTION CENTER & ANAHEIM MARRIOTT**  
**ANAHEIM, CALIFORNIA, USA**  
**#TMSAnnualMeeting**

**SUBMIT AN ABSTRACT FOR THE FOLLOWING TMS2022 SYMPOSIUM:**

## **SPECIAL TOPICS**

### **Frontiers of Materials Award Symposium Session: Data-Driven, Machine-learning Augmented Design and Novel Characterization for Nano-architected Materials**

There have been increasing efforts in exploring data-driven decision making and machine-learning augmented approaches for efficient materials design. An exciting recent progress is integrating these data-driven and machine-learning approaches with advanced characterization tools, such as advanced electron microscopy and synchrotron analysis, to access and to predict critical processing-structure-property relationships. The design of nano-architected materials exhibits a complex parameter space, and thus the community could profit from applying and further developing these novel methodologies to avoid the 'trial-and-error' approach and to complement computational simulations and theoretical analyses.

This special symposium session thus aims to gather experts on the critical emerging topic of data-driven, machine-learning-based nano-architected materials design. It will also place a key emphasis on novel characterization, such as autonomous synchrotron X-ray characterization and data-driven next generation transmission electron microscopy. This event will be a special session in conjunction with the regular symposium, Self-organizing Nano-architected Materials. The session is intended to be interdisciplinary, covering a range of materials, such as metallic nanomaterials, self-assembling block copolymers, combinatorial thin films and electronic, magnetic and smart materials. This session will provide a forum for seemingly disparate fields to interact and drive materials discovery with novel characterization methods that are augmented by data science and machine learning.

#### **ORGANIZER**

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[www.tms.org/TMS2022](http://www.tms.org/TMS2022)

**QUESTIONS?**  
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