ANNUAL MEETING
150th
TMS2021
SINCE 1871
AND EXHIBITION

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

CHARACTERIZATION

DATA SCIENCE AND ANALYTICS FOR MATERIALS IMAGING AND QUANTIFICATION

Materials imaging and the analysis of the data play a central role in materials characterization. The combination provides a way to `see' a material and quantify its complexities leading to an understanding of its behavior under various conditions. Combining experiments with complementary techniques such as analytical spectroscopy allows one to gain a deeper insight into the relevant physical phenomena. Materials imaging has reached a critical mass of data generation partially due to faster and larger detectors, as well as advanced microscopes and state-of-the-art light source facilities. Modern mathematics and computer science tools are enabling the automation of data integration and analysis; as well as opening new possibilities for extraction of quantitative metrics from materials imaging.

This symposium solicits abstract submissions from researchers who are advancing the field of materials imaging using novel techniques and developing new methods that leverage high performance computational methods for analysis. Image simulation, uncertainty quantification, and imaging data curation are equally of interest. Session topics include, but are not limited to:

- Advances in materials imaging techniques, including in-operando conditions
- Fast imaging in support of high-throughput experimentation
- Automating experimentation: machine learning algorithms for image acquisition and instrument control
- Workflows for automated data curation of microscopy data
- Advances in infrastructure for materials imaging and microscopic data
- Advances in simulations for materials imaging
- Approaches for data mining, machine learning, image processing, and extracting useful insights from large imaging data sets of numerical and experimental results and reuse of microscopic data

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