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TMS 2026

155th Annual Meeting & Exhibition

March 15–19, 2026
San Diego Convention Center
and Hilton San Diego Bayfront
San Diego, California, USA
#TMSAnnualMeeting

SUBMIT AN ABSTRACT FOR THE FOLLOWING SYMPOSIUM

MATERIALS SYNTHESIS AND PROCESSING

Thin Films and Coatings: Properties, Processing and Applications

Thin films and coatings are specialized layers with thicknesses ranging from a few nanometers to several micrometers. Thin films and coatings are extensively used in various applications where they improve wear resistance, corrosion protection, optical performance and functional durability. Understanding and optimizing the deposition processes and mechanical behavior of thin films and coatings is essential for advancing their performance and expanding their applicability.

This symposium will focus on the latest developments mechanical testing, structural and compositional characterization methods, advancements in deposition techniques, applications in nanotechnology and electronics, performance in extreme environments, and computational modeling and simulation in predicting thin film behavior and optimizing deposition.

This symposium will include, but will not be limited to the following topics:

- Advanced thin film and coating deposition and synthesis techniques including PVD, CVD, ALD, solution-based method, electrochemical and others.
- Thin films & nanostructures for electronic, optical and optoelectronic applications.
- Nano- and micro-scale mechanical testing and in situ mechanical characterization techniques.
- Advanced morphological and compositional characterization techniques.
- Coating technologies and surface structuring for tools improving wear resistance, lubrication and cutting performance.
- Thin films and coatings for extreme environments addressing corrosion resistance, high temperatures performance and stability.
- Modeling and simulation for predicting mechanical & electronic properties, integrating computational methods to guide thin film design and optimization
- Thin films and coatings for emerging applications in energy, biology and biomedicine.

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TMS Functional Materials Division; TMS Thin Films and Interfaces Committee

ORGANIZED BY:

- **Tomas Grejtak,** Oak Ridge National Laboratory
- **Gerald Ferblantier,** University of Strasbourg - IUT LP / ICube Laboratory - CNRS
- **Karine Mougin,** CNRS, Is2m
- **Tomas Babuska,** Sandia National Laboratories
- **Ramana Chintalapalle,** University of Texas at El Paso
- **Isha Gupta,** University of Southampton
- **Brandon Krick,** Florida A&M University-Florida State University

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Contact programming@tms.org