JOM Call for papers

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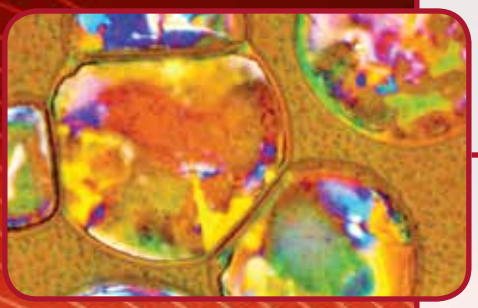

Publication Date: *May 2019*

Manuscript Deadline: *December 1, 2018*

The Thin Films and Interfaces Committee is seeking papers on the topic of

The Mechanics of Stresses and Strains Engineered by Interfacing Materials

Topics:

- Surface chemistry, nucleation and growth phenomena
- In situ and ex situ electron microscopic characterization (SEM and TEM)
- Stresses and strains depth fields and correlation to behavior of interfaced materials
- Correlating mechanical properties at interfaces to optical properties of materials
- Correlating mechanical properties at interfaces to electrical properties of materials
- Methodologies of engineering interfaces and combination of interfaced materials
- Low concentrations of dislocations and non-equilibrium point defect concentrations
- Theoretical calculations of evolution of stresses at microstructure level
- Computations of bandgap modulations and carriers mobility due to interfaces

Interfacing materials with dielectrics, metals, semiconductors or alloys have been demonstrated to cause major effects in their electronic, optical and electrical properties. These modifications have been mainly caused by introduced lattice mismatches that are manifested in the form of stresses and strains. It is these stresses that alter materials properties via modifying carrier mobility and modulating bandgap. It is crucial, therefore, to understand the underlying mechanics of stresses and strains, particularly those related to enhanced optical, electronic and electrical properties of interfaced materials. This special topic will focus on microscopy characterization techniques revealing the mechanics of stress formation at grain boundaries as well as other techniques necessary to understand evolution of stressed microstructures. Relevant parameters of studies will be depth of stress fields and their effect on bandgap and their elastic and plastic limits before forming dislocations. This topic is also interested in correlating these interfacial stress and strains mechanics with observed enhanced electrical and optical properties and to understand theoretically their effect on carrier mobility, carrier confinement and bandgap modulations. It will include the topics to the left.

Original research papers should be 3,000-6,000 words with up to 8 figures maximum; review papers should be 6,000-10,000 words with up to 15 figures maximum.

Detailed author instructions are available at: **http://www.tms.org/AuthorTools/**

Keywords for this topic:
Characterization, computational materials science and engineering, fundamentals, ICME, mechanical properties, modeling and simulation, physical properties

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If you are interested in submitting a paper, upload your manuscript at **https://www.editorialmanager.com/jomj/**

Please note that all submissions will be subject to peer review. Submission does not guarantee acceptance.

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