

**16<sup>th</sup> International Symposium on Functionally Graded Materials, Hartford, Connecticut, USA  
August 7-10, 2022**

**Mini-Symposium Title:** Modeling of Multiscale and Functionally Graded Materials (FGMs)

**Organizers:**

Glaucio H. Paulino , [glaucio.paulino@ce.gatech.edu](mailto:glaucio.paulino@ce.gatech.edu), Professor, School of Civil and Environmental Engineering, Georgia Institute of Technology

Emílio Carlos Nelli Silva , [ecsilva@usp.br](mailto:ecsilva@usp.br), Professor Titular, Department of Mechatronics and mechanical systems Engineering, University of Sao Paulo, Sao Paulo, 05508-030, Brazil

**Description:**

Multiscale and Functionally Graded Materials are characterized by spatially varied microstructures created by non-uniform distributions of the reinforcement phase with different properties, sizes and shapes, as well as, by interchanging the role of reinforcement and matrix materials in a continuous manner. Such multi-phase materials cover a range of space and time scales, and are best understood by means of a comprehensive multiscale multiphysics approach. Such materials have a broad range of applications including, for example, biomechanical, automotive, aerospace, mechanical, civil, nuclear, and naval engineering. New applications are continuously being discovered and developed. This MS intends to provide opportunities for exchanging, discussing and enhancing the state-of-art techniques and recent developments in modeling of FGMs. Some topics of interest are included below:

- Multiscale Multiphysics Modeling
- Optimization of FGMs
- Nano, Micro and Meso-Scale Modeling
- Stress in FGM Coatings and Joints
- Mathematical Modeling
- Properties Modeling
- Computational Techniques
- Fracture Mechanics
- Other