

11th USNCCM

US National Congress on Computational Mechanics

July 25 – 29, 2011

Minneapolis, MN

<http://www.usnccm.org/>

<p style="text-align: center;">Mini-Symposium:</p> <p style="text-align: center;">Recent Advances in Multiscale and Multiphysics Computational Materials Modeling</p>

Scope of the mini-symposium:

The proposed mini-symposium focuses on the link between the traditional materials modeling and computational description of existing and new classes of materials, advanced and composite materials and their applications. In particular, the mini-symposium is devoted to computational characterization of material response and processing of material microstructures in the presence of multiple temporal and spatial scales as well as multiple physical processes, and computational methodologies for characterization of the microstructural topology of heterogeneous materials. We invite contributions from mechanicians, physicists, chemists, materials researchers and engineers involved in the following research areas or related topics:

- In the current digital age, it is befitting that complex heterogeneous materials are characterized by digital computational and/or experimental techniques. Therefore, we invite contributions of materials characterization using microcomputer tomography, packing algorithms, crystal growth algorithms, etc.
- Statistics based morphological reconstruction techniques.
- Coupling of image-based modeling with homogenization techniques.
- Many complex heterogeneous material systems undergo several physical processes at once, and their competition is as important as the individual processes themselves. Therefore, we invite contributions focused on coupling of multiple physical processes such as propellant combustion, corrosion driven fracture, transport driven embrittlement, etc.
- Application of advanced numerical methods to model dynamical, transport, mechanical, growth, thermo-mechanical properties of materials.

- Advanced multiscale methods and approaches for analysis of heterogeneous materials under extreme loading and environmental conditions.

Abstract submission:

Contributions can be submitted online through the website of the Congress (<http://www.usnccm.org/>). Please note the important dates below regarding the submission deadlines. Please contact Karel Matouš or Çağlar Oskay for further information.

Important dates:

Abstract submission: **January 31, 2011**

Author notification of abstract acceptance: **February 28, 2011**

Early registration deadline: **May 15, 2011**

Regular registration deadline: **June 30, 2011**

Mini-symposium organizers:

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