

**World Congress on Computational Mechanics (WCCM XII) &
6th Asia-Pacific Congress on Computational Mechanics (APCOM VI)**

Mini-symposium on “Computational Mechanics of Biological Materials at Small Scales”

Call For Abstracts

Biological materials at small scales have recently received attention from the community due to their important role in not only biology but also material sciences and engineering. In particular, the last decade has witnessed the development of novel biological materials such as protein fibrils, which are formed by the self-assembly of biological building blocks such as biomolecules (e.g. protein molecule, DNA, etc.). They are an interesting material as they exhibit the unique material properties such as mechanical properties. This observation suggests the necessity of studying the structures and properties of biological materials at small scales.

For the last two decades, with advances in computational simulation techniques, the structures and properties of biological materials at small scale have been extensively studied. Since the late 1990s, when the mechanical behavior of muscle protein domain was characterized using molecular dynamics simulations, the computational simulation technique has become an important toolkit for not only understanding the structures and properties of biological materials ranging from a single-molecule to self-assembled biological structures but also designing a bio-inspired or biomimetic materials that can perform unique mechanical functions.

With recent explosive expansion of the area of computational biological material science as described above, this mini-symposium is aimed towards presenting the current state-of-arts in computational research works on biological materials at small scales. This mini-symposium invites the contributions from the computational simulations of small-scale biological materials.

Potential topics include but are not limited to:

- Computational design of protein materials
- Computational design of DNA-based materials
- Computational design of interface between biological materials and nano-materials
- Single-molecule manipulation *in silico*
- Protein unfolding mechanics
- Mechanical characterization of biological materials
- Protein self-assembly (e.g. protein fibril, etc.)
- DNA self-assembly (e.g. origami, etc.)
- Atomistic simulations / Multi-scale simulations / Coarse-grained simulations

Organizing Committee

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Important Date

November 30, 2015
January 30, 2015
March 31, 2016
July 24-29, 2015

Deadline for abstract submission
Notification of acceptance
Deadline for pre-registration
Congress

Additional information can be found at <http://www.wccm2016.org>.