**Mini-symposium Title**

Computational Materials and Statistical Mechanics

**Description**

Statistical mechanics provides a mathematical framework which allows us to explain, understand and predict macroscopic physical properties from microscopic observations and parameters. In the past decade, there have been exciting developments in understanding the mechanics of nano- and bio- structures and materials from in silico investigation of materials. These developments have shown great potential for a wide range of engineering applications. Design of nanostructured and self-assembled materials to achieve materials with higher strength and performance for mechanical and energetic applications is currently receiving significant attention. Understanding the mechanics of these materials and their fundamental mechanisms are crucial for the design of innovative materials. This symposium will focus on the computational mechanics of nano- and bio- structures and materials, with an aim to represent the cutting edge research in mechanics and materials across multiple length scales for a wide range of engineering applications.

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