

## Multiscale Modeling of Nanostructures

Organizers:

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Mathematical modeling, suitably supported and validated by measurements, is a very important tool for understanding the behavior of nanostructures. Stability and performance of nanostructures is largely determined by the physical processes at nano or sub-nanoscales. Realizing the full potential of nanoscale materials and systems requires a robust set of validated tools to study the materials' behavior at different scales. Modeling of nanostructures, therefore, poses unique challenges to modeling scientists because of the necessity to model the physical process at multiple length and time scales. Experimental research is very important for mathematical modeling since it validates the model, provides parametric input to the model, and helps in identifying the problems that need to be addressed.

The object of this symposium is to bring together computational and experimental scientists from all over the world to discuss their latest research work on different aspects of nanostructures. The symposium will consist of key note talks, invited talks, and contributed papers by leading researchers. This symposium is eighth in the series of successful symposia on multiscale modeling of nanostructures at the ICCES and it would be interesting to see how the ideas have evolved over this period. Because of the special importance of the Green's function method in multiscale modeling, this symposium will be held in collaboration with the symposium on Green's function method at the ICCES.

We solicit research papers on multiscale modeling and experimental studies of nanostructures. We strongly encourage researchers working in diverse fields of nanostructures to interact with each other since it stimulates cross-fertilization of new ideas. The topics at the symposium will cover a broad spectrum of research and will include (but not limited to) electronic, thermodynamic, photonic, magnetic, ferroelectric, and elastic characteristics of quantum nanostructures, nanoinclusions, nanophotonic devices, thin films, glasses, biomaterials, nanotubes, and the new wonder material graphene. Different mathematical techniques for multiscale modeling such as multiscale Green's functions, ab initio and classical molecular dynamics, continuum mechanics, meshless methods etc. will be included.