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Preface

This is the second of the special issues on *Innovative Numerical Methods for Micro and Nano Mechanics and Structures*. The first part appeared in the *Engineering Analysis with Boundary Elements* in May 2007 as Vol. 31, No. 5. As stated in the preface of the first issue, "The emergence of MEMS and nanotechnology during the last decade has necessitated the engineering modeling community to broaden its horizon to model at a length scale and a time scale that have not been encountered before… Often special numerical techniques are needed to deal with these issues…. The journal of *Engineering Analysis with Boundary Elements* has the tradition of being at the forefront of developing innovative numerical methods for engineering analysis."

To encourage further development of numerical modeling in these micro and nano mechanics fields, this issue has assembled seven articles authored by leading researchers in their fields. The physical problems studied in these articles cover a broad range of technologies, including the simulation of thermophysical properties of nano fluid, the simulation of mechanical properties of carbon nanotube and polymer composite, the equivalent elastic continuum of quantum dot arrays, as well as quantum wires, and interaction of microparticles in Oseen flow. The numerical methods used include the multiscale finite element method and boundary element method, the method of fundamental solutions, lattice method, and molecular dynamic simulation. These articles represent a good cross-section of the present-day innovative efforts.

We hope that by presenting these special issues, we will stimulate further research in numerical modeling in the micro and nano research fields.

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