



# HPCNano workshop 2006

**The Second IEEE/ACM International Workshop on High Performance Computing for Nano-science and Technology (HPCNano06)  
Nov. 13, 2006, Tampa, Florida, USA**

(<http://www.uiowa.edu/~nano/HPCNano06>)

in conjunction with [IEEE/ACM SC06](#)

Nanotechnology is an exciting field with many potential applications. Its impact is already being felt in materials, engineering, electronics, medicine, and other disciplines. Current research in nanotechnology requires multi-disciplinary knowledge, not only in sciences and engineering but also in high performance computing (HPC) technology. Many nano-science explorations rely on mature, efficient HPC and computational algorithms, practical and reliable numerical methods, and large-scale computing systems. This workshop offers academic researchers, developers, and practitioners an opportunity to discuss various aspects of HPC-related computational methods and problem solving techniques for nano-science and technology research.

The first workshop named HPCNano05 was a successful event held in conjunction with IEEE/ACM SC05. HPCNano06 is the second one that will be held in conjunction with IEEE/ACM Supercomputing 2006. The workshop will be advised by the SC2006's Technical Committee/Workshop Sub-Committee, and planned and executed by the workshop program committee. We hope to attract people from diverse science and engineering disciplines, nationally and internationally, to attend the workshop, present their research results, share their experiences and ideas, and plan future collaborations.

HPCNano06 invites authors to submit original and unpublished work (also not submitted elsewhere for review) reporting solid and innovative results in any aspect of high performance computing in nano-science and technology. The accepted papers will be published by either the IEEE Computer Society Press. Papers should not exceed 8 single-spaced pages of text using 10-point size type on 8.5 x 11 inch paper (see IEEE author instructions, a LaTeX style sheet and Word format is available, too). All bibliographical references, tables, and figures must be included in these 8 pages. Submissions that exceed the 8-page limit will not be reviewed. Authors should submit a PDF file that will print on a PostScript printer. Electronic submission is required. The site for submissions is <http://www.sc-submissions.org/>. Submission implies the willingness of at least one of the authors to register and present the paper.

Proceedings: All papers selected for this workshop are peer-reviewed and published as a separate post-conference proceeding by IEEE Computer Society Press. The papers will also be published in the IEEE Xplore, IEEE IEL, IEEE CS digital library (CSDL), and indexed by distinguished indexing services such as ISI, DBLP, etc. For author instructions see <http://www.computer.org/cspress/instruct.htm>

Special Issue: The best 6 to 8 papers from the workshop will be selected for journal length extension and their publication in a special issue of International Journal of High Performance Computing and Networking (IJHPCN).

HPCNano06's topics of interest (in no particular order) include, but are not limited to:

Large scale computing in multi-scale modeling and simulation of nanoscale materials  
Parallel algorithms, domain decompositions, and computational methods in nano-materials

processing, characteristics, and statistical analysis  
Nanomaterial fabrication, synthesis, and processing simulations  
Microscopy nano-structured materials databases  
Large-scale molecular methods and simulations in nano-science and technology  
Nano-science -related data and image processing  
HPC-based modeling and simulation for nano-electromechanical systems  
High performance computing in Fourier transform infrared nano-surface  
Modeling and simulation of organic nanostructure materials and biomaterial processing  
HPC-based multi-scale spectroscopy data and image processing  
High performance data processing in microwave spectroscopy on quantum dots  
High performance computing in atomic-scale friction  
Large scale computing systems for nano-science (computational and network systems)  
Grid computing in nano science and technology  
High performance computing in bionanotechnology

### **Deadlines**

Submission deadline: Sept. 15, 2006  
Notification of acceptance: Sept. 30, 2006  
Final camera-ready manuscript due: Oct. 10, 2006  
Conference: Nov. 13, 2006 (Monday, 8:00AM-5:00PM)

### **Submission**

Send your paper(s) in PDF electronically to the program chair Dr. Jun Ni ([jun-ni@uiowa.edu](mailto:jun-ni@uiowa.edu)).

### **Workshop Organization**

#### **General Chair**

Dr. Thom Dunning, National Center Supercomputing and Applications (NCSA), USA

#### **Program Chair**

Dr. Jun Ni, University of Iowa, USA