

Workshop on Nano-Bio Mathematics and Mechanics

Time: August 5, 2010

Venus: A517 Wells Hall
Department of Mathematics
Michigan State University
East Lansing, MI 48824

Invited Speakers:

Duan Chen, Department of Mathematics, Michigan State University
Zhan Chen, Department of Mathematics, Michigan State University
Langhua Hu, Department of Mathematics, Michigan State University
Prof. P. Nithiarasu, School of Engineering, Swansea University, UK
Prof Nikolai Priezjev, Department of Mechanical Engineering, Michigan State University
Prof Decheng Wan, School of Naval Architecture, Ocean and Civil Engineering, Shanghai Jiao Tong University, PRC
Qiong Zheng, Department of Mathematics, Michigan State University

Scope:

This one-day workshop will provide a platform for researchers to introduce recent advances in mathematical modeling and simulation of nano-bio and fluid systems. The scope of this workshop includes mathematical molecular biology, cardiovascular flow, flow structure-interaction and nano electronic devices.

Schedule:

9:00-9:50am

Translational Cardiovascular Flow Modelling Challenges

Prof P. Nithiarasu
School of Engineering
Swansea University
UK

10:00-10:50am

FEM-Fictitious Boundary Method for Solid-Liquid Two Phase Flows

Prof Decheng Wan

School of Naval Architecture, Ocean and Civil Engineering

Shanghai Jiao Tong University

PRC

11:00-11:30am

Quantum Dynamics in Continuum Approach for Proton Channel Transport

Duan Chen

Department of Mathematics

Michigan State University

11:30-12:30 Lunch break

12:30-1:20pm

The Relationship Between Induced Fluid Structure and Boundary Slip in Nanoscale Polymer Films

Prof Nikolai Priezjev

Department of Mechanical Engineering

Michigan State University

1:30-2:00pm

Differential Geometry Based Solvation Models for Biomolecules

Zhan Chen

Department of Mathematics

Michigan State University

2:00-2:30pm

Poisson-Nernst-Planck Equations for Ion Channel Transport

Qiong Zheng
Department of Mathematics
Michigan State University

2:30-3:00pm
Geometry and Phonon Effects on Nano-Transistors and Sensors

Langhua Hu
Department of Mathematics
Michigan State University

3:00-4:00pm
Free discussions

Organizer:

Guowei Wei,
Department of Mathematics
Department of Electrical and Computer Engineering,
Michigan State University

Sponsor:

National Science Foundation
National Institute of Health