数学与系统科学研究院

计算数学所学术报告

报告人： Prof. Wing Kam Liu

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报告题目： Electro−kinetic Assembly and Manipulation of Bio / Nano Materials

邀请人： 崔俊芝院士

报告时间： 2007 年 8 月 30 日(周四)

下午 16:50—17:50

报告地点： 科技综合楼三层 311

计算数学所报告厅

Abstract：

The immersed electro-kinetic finite element method (IEFEM), which couples fluid-structure interaction problem with electro-kinetics, is proposed for modeling the electrokinetic-induced mechanical motion of nano/biomaterials in a fluid domain under an applied electric field. As a specific application, 3D dielectro-phoretic assembly of nanowires across micro-electrodes has been studied. The various dynamic processes and assembled patterns are explored by comparing our simulation results with experimental observations. The simulations are being used to determine operating parameters for optimal deposition yield of nano-electronic sensors. Simulation of the dynamic process of electro-manipulation of individual and multiple cells agrees well with experimental data. Preliminary results for selective deposition of viruses and assembly of nanostructures, such as hybrid fibril of nanowires and DNAs are also presented.

欢迎大家参加！