

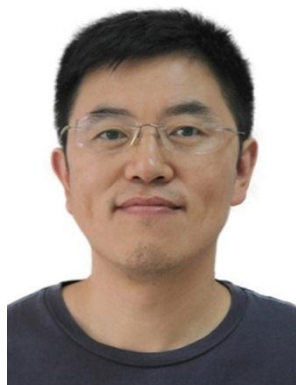


Weekly Seminar

Tunable spin and water transport through nanoscale graphene channels

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Beijing Computational Sciences Research Center



Time: 4:00Pm, Nov. 21, 2018 (Wednesday)

时间: 2018年11月21日 (周三) 下午4:00

Venue: Room W563, Physics building, Peking University

地点: 北京大学物理楼, 西563会议室

Abstract

Graphene is both a model system for testing new ideas in fundamental research and a unique 2D material with numerous potential applications. In this talk, I will present some of our latest results in controlling the spin current and water transport through nanoscale graphene channels, based on the tunable magnetic states of single carbon vacancy, and the rectangular nanochannels with variable dimensions. We analyse the physical origin of the magnetic transitions, that is controllable by nano mechanical distortion, and its effect on the spin current flip. In the case of water transport, the interplay between the hydrogen bonding and confinement and its manifestation in the quantized water current will be discussed.

About the speaker

高世武, 北京计算科学研究中心 (CSRC) 讲席教授 (2014-)。中科院物理研究所博士 (1990), Chalmers 大学应用物理系助理教授 (1992-1997), Docent (1997); 哥德堡大学物理系副教授 (1997-2005), 教授 (2006-2014)。主要从事材料电子结构, 电子激发态及量子动力学过程的基础理论和计算模拟。主要工作包括: 1) 提出单原子操纵理论模型, 解释并部分预测氧分子非线性分解率实验; 2) 固体表面水的微观结构和振动特征; 3) 发展电声振动激发和反应动力学量子主方程; 4) 推广 Lindblad 量子耗散理论处理非均匀耗散体系; 5) 阐明纳米尺度等离激发态的量子行为; 6) 实现 FLAPW 程序 (WIEN97 版) 的 MPI 并行化。