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Single and multiple quantum dots made from semiconductor nanostructures for quantum information processing

时间: 11月23日 (星期四) 15:00—16:30

地点: 北京大学物理大楼西楼202报告厅

摘要: Semiconductor quantum dots are among the key technology platforms for solid-state based quantum information processing. In this talk, he will report their recent works on the realizations of single, double and triple quantum dots in semiconductor heterostructures and nanowires, and on the transport studies of spin and charge states, as well as spin correlations, in the devices particularly the results of quantum dot devices made from InGaAs/InP heterostructures, InAs nanowires, and InSb nanowires. The observations of novel physics phenomena, such as spin-correlation induced conductance suppression, g-factor and spin-orbit interaction fluctuations, coherent charge transfer between remote quantum dots, in these devices will be presented and discussed.

Hongqi Xu is currently Chair Professor at Peking University of China and Visiting Full Professor at Lund University of Sweden where he received the Ph.D. degree in condensed matter physics in 1991 and became Full Professor in 2003. His research interest has been experimental and theoretical studies of electrical and optical properties of semiconductor nanostructures, quantum phenomena of electron transport in solid state systems, Majorana fermions in the solid state, topological states of matter, strong correlated systems, spin correlation, spin dynamics, and spintronic devices, nanoelectronic devices, photonic and photovoltaic devices, light-matter interaction phenomena, etc. He has published more than 200 papers and made about 400 presentations including 100 invited talks in conferences and workshops.

邀请人: bshen@pku.edu.cn

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Photoed by Xiaodong Hu