

“固体所青联会”第十一期学术论坛

报告题目: Excitons and Plasmons - A Match made in Heaven?

报告人: Prof. Dr. Erich Runge

报告时间: 2013年9月9日下午2:30 (周一)

报告地点: 固体所三号楼221会议室

主办单位: 中科院固体物理研究所青年联合会

中科院青年创新促进会合肥物质科学研究院小组

报告人简介: Professor for Theoretical Physics I, Department of Physics, TU Ilmenau, 98693 Ilmenau, Germany. His research interests include Nano optics, Ultrafast optics, Density-functional theory, Plasmonics, Light-matter coupling in photovoltaic systems, Exciton transport, Computational material science, Disordered Systems, Semiconductor structures, Band-structure calculations, Many-particle theory, Quantum coherence and dephasing, Frustrated systems, Highly correlated electronic systems, Green's functions, Computational physics, Numerical methods, Simulation and optimization in engineering.

报告摘要: We all hope for future data processing at optical speed with bits and bytes packed at least as dense as in today's CPUs. This dream implies that electromagnetic fields have to be guided and manipulated at length scales far below the optical wave length. Using plasmons for data transfer is an obvious answer. Unfortunately, plasmons are heavily damped. Hopefully, damping can be overcome by coupling of plasmons and excitons, giving rise to new quasi-particles called after their parents excimons or plexitons. The talk reviews theoretical and experimental studies of progress in excimon physics and several aspects of exciton and plasmon localization.