Kolloquium für Physikalische und Theoretische Chemie
Sommersemester 2018

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Diamond Quantum Devices: From Quantum Simulation to Medical Imaging

Perfect diamond is transparent for visible light but there are famous diamonds, such as the famous Oppenheim Blue or the Pink Panther worth tens of millions of dollar, which have intense colour. An important source of colour in diamond are lattice defects which emit and absorb light at optical frequencies and may indeed possess a non-vanishing ground state electronic spin. I will explore the physics of one of these defects, the nitrogen vacancy center, and show how we can manipulate its electronic spin and make use of this capability to create quantum simulators, quantum sensors and perhaps surprisingly applications in medical imaging that may, we hope, find applications for example in cancer research and treatment.

Martin B Plenio is Director of the Institute of Theoretical Physics at Ulm University and founding Director of the newly established Center of Quantum BioSciences. His work covers a broad range of topics, including quantum information science, quantum effects in biological systems, quantum optics, and quantum technologies. His awards include an Alexander von Humboldt Professorship, the Maxwell Medal and Prize, the Born Medal, and Prize of the Institute of Physics and the German Physical Society, as well as an ERC Synergy grant and his listing as a Highly Cited Researcher.

Ort: CH63214, Department Chemie, Lichtenbergstr. 4, 85478 Garching

Tag: Montag, 07. Mai 2018

Zeit: 16:00 c.t., um 16:00 s.t. Kaffeerunde vor dem Seminarraum CH63214