

The Vienna Doctoral Programme on Complex Quantum Systems  
invites you to a

## Seminar Talk

by

**Martin B. Plenio**

*Institute of Theoretical Physics, Ulm University*

***“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 ten's 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 to develop quantum simulators, nanoscale quantum sensors and sources of nuclear hyperpolarisation. Applications of such devices range from sensing in biology to medical imaging.

**Monday, 21 January, 2019**

**16:30h get-together with coffee and snacks!**

Lise Meitner Hörsaal, Strudlhofgasse 4, 1<sup>st</sup> floor, Vienna

The seminar talk will be preceded by a CoQuS Student talk at 17:00h

by

**Yuri Minoguchi**

*TU Wien*

***“Dissipative Photon-Blockade and Environment Induced Rabi Oscillations in the  
Optomechanical Boson-Boson Model”***

Hosted by: Peter Rabl