

## Diamond quantum devices in biology

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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 nanoscale quantum sensors and sources of nuclear hyperpolarisation. Applications of such devices range from sensing in biology to medical imaging.

**Presenter:** Prof. PLENIO, Martin (University of Ulm)