NVISION
Albert-Einstein-Allee 11,
89081 Ulm Germany

Paid industry-academic M.Sc. position at Ulm University

Title

M.Sc. researcher in the Institute of Quantum Optics in collaboration with the industry partner NVision Imaging Technologies GmbH

Summary

- This advert is for a research position that culminates in a Master of Science.
- The paid position will be at the Institute of Quantum Optics under Prof. Fedor Jelezko in collaboration with the startup NVision Imaging Technologies GmbH.
- The topic is the research and development of thin films with quantum defects in molecular crystals for improving medical diagnostic sensitivity.
- Preparatory HiWi employment possible.

Position

We are looking for a distinctive master's student with the passion to apply deep material engineering and quantum technological ideas in real-world applications. The project offers the opportunity to combine world-class research (M.Sc. supervision by Prof. Fedor Jelezko, one of approx. 200 physicists world-wide to receive the Highly Cited Researcher distinction) with the potential of positively impacting the lives of people world-wide. The position will be paid on a competitive industry level by NVision.

The project will focus on the development of a novel platform based on thin films of molecular crystals for quantum technology to enhance sensing, medical imaging and analysis, even at ambient conditions. The researcher will develop and apply protocols to successfully manufacture the material and studies to optimize the quantum sensing capabilities.

Molecular crystals are a key material for several state-of-the-art industrial applications, including optical devices and screens (e.g. OLEDs). Moreover, these materials have been recently used as hosts for electrons with unique quantum properties, including optical polarization and high coherence times, which can be utilized for several important applications such as improving the sensitivity of magnetic resonance imaging (MRI) in the medical field.

In the project, the researcher will get to additionally collaborate closely with Experimental Physics VI at the University of Würzburg, experts in the growth and applications of molecular crystals.

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Institution

Institute of Quantum Optics in collaboration with
NVision Imaging Technologies GmbH, Ulm, Germany.

NVision is a well-funded innovative startup which span off from the University of Ulm and focuses on the commercialization of quantum technologies for life science applications.

Responsibilities

- Experimental research at the interface between chemistry, material science and physics
- Set up and develop protocols to grow organic thin films doped with photoexcitable paramagnetic centers
- Study the growth parameters to optimize thin film (<10 micrometer) quality and doping concentration
- Assess the material quality using established characterization techniques
- Conduct electron and nuclear magnetic resonance experiments on the grown samples

Being part of a larger team working on the devices, the candidate will have a strong support system for overcoming technical challenges and be able to focus on achieving results. The researcher will be encouraged to develop and test their own ideas.
If no immediate start of the master's project is possible, we can offer a preparatory HiWi employment at NVision.

Requirements

The candidate must hold a Bachelor's degree in chemistry, material science or physics, and have graduated with distinction. Good level of English is required.

Application procedure

To apply for the position please send your transcript of records or CV to mor@nvision-imaging.com. Interviews will be scheduled promptly for suitable candidates.
The consideration of applications will start immediately.

Contact

Mor Schwartz (mor@nvision-imaging.com)