



EINLADUNG  
zum  
VERA - SEMINAR  
von

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and  
IMS Nanofabrication GmbH (Austria)

**Creation and Charge State Dynamics of NV Centres  
in Diamond for Quantum Applications**

In the past decades the negative nitrogen-vacancy (NV<sup>-</sup>) centre in diamond has demonstrated its versatility both as a sensor for temperature, electrical and magnetic fields, and as a promising solid-state system for quantum information processing.

In this talk I will start with a description of the creation of NV centres via low energy nitrogen implantation (8 keV) in ultrapure diamond, just 12 nm below the surface. The unique properties of the created colour centres, such as long spin coherence, will be highlighted together with its strong dependency on the immediate local environment. For applications based on large-scale arrays of NV<sup>-</sup> centres, I will also present NV creation strategies, where we explored a combination of electron-beam lithography with subsequent nitrogen implantations.

After this report about part of my PhD work I will finish my talk with a short insight into my current work at IMS Nanofabrication, a company who specialised in multi-beam mask writer technology used in photomask shops around the world.

**Donnerstag, 15. März 2018, 16:30 Uhr**

**1090 Wien, Währinger Str. 17, "Kavalierstrakt",  
1. Stock, Victor-Franz-Hess Hörsaal**