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Abstract for an Invited Paper  
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**Entanglement and entanglement storage in dipolar coupled diamond defects**

JOERG WRACHTRUP, University of Stuttgart

The generation of robust entangled states is one of the key steps in quantum science. Although diamond defects are highly versatile quantum bits mutual entanglement has not been demonstrated so far. The talk will describe the engineering of strongly coupled defect centers as well as their characteristic features. Entanglement generation as well as different means of tomography will be outlined. Correlated photon emission from coupled defect center pairs is analyzed. Robust storage of electron spin entanglement into nuclear spins resulting in entanglement storage lifetime of ms is demonstrated and roads towards efficient generation of strongly coupled defect arrays will be discussed.