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## Spin defects in hBN for quantum sensing applications

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### **Abstract**

Hexagonal boron nitride (hBN) has emerged as a promising material for quantum sensing, being host to a variety of optically addressable spin defects. In this talk, I will first present our work on the boron vacancy defect in hBN and show how it can be used for magnetic imaging and relaxometry-based sensing. I will then present results on a class of spin-half defects which emit at various wavelengths from the blue to near-infrared. I will discuss our current understanding of these spin-half defects, and present applications to omnidirectional magnetometry and radiofrequency sensing. Owing its van der Waals nature, hBN opens new opportunities for nanoscale sensing and integration into multi-functional devices.