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## Advances in N-doped Diamond Thin Films Grown by Microwave Plasma CVD

The diamond NV-centre is emerging as a candidate for high precision magnetic field measurement. NV centres in diamond can be introduced in various ways. One method is to dope the diamond film during the Microwave Plasma CVD growth process. Production of thin diamond films doped with NV- centres has the potential to be a key enabling technology for this advanced magnetic field sensing method. In this talk, recent results on the growth of N-doped thin diamond films using Microwave Plasma CVD will be presented [1,2].

References:

- [1] H.A. Ejalónibu, M.P. Bradley, G. Sarty "The effect of step-wise surface nitrogen doping in MPECVD grown polycrystalline diamonds", Materials Science and Engineering: B 258, 114559 (2020)
- [2] H.A. Ejalónibu, G.E. Sarty, and M.P. Bradley, "Optimal parameter(s) for the synthesis of nitrogen-vacancy (NV) centres in polycrystalline diamonds at low pressure", J. Mater. Sci.: Mater. Electron. 30, 10369-10382 (2019).

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