

The NV technology for Non Destructive Testing



Ultra-sensitive and robust quantum sensors

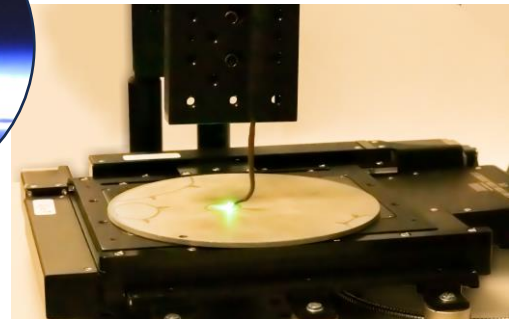
KWAN-TEK develops a range of magnetometers to detect corrosion and cracks in metal parts by analysing their magnetic signatures. They are based on **NV (Nitrogen - Vacancy) centres diamonds**, that give magnetometers **high sensitivity** and **robustness** which, combined with their **small size**, make them very good candidates for **Non Destructive Testing**.



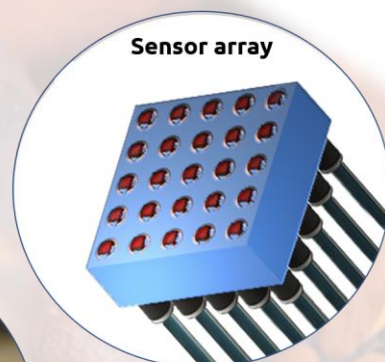
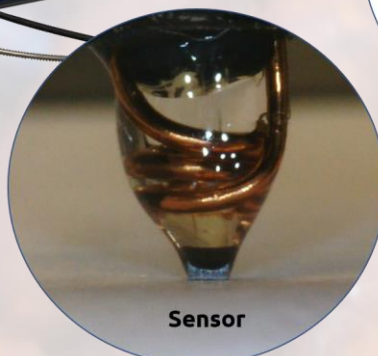
The NV centre is a defect deliberately incorporated into the diamond's crystalline structure, which makes it very sensitive to magnetic fields.



NV centres diamond, head of the endoscope that scans a sample on our test bench.



Examples of sensor heads



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kwan-tek

Advantages of NV magnetometry

- ✓ **Surface and subsurface** inspections (down to 10 mm-deep in steel)
- ✓ Inspections of structures with **complex geometries, narrow or difficult access**, with a remote system.
- ✓ A system that can operate in **extreme conditions** of temperature, pressure and radiation.

Sensitive

Drift-free

Non polluting

Precise

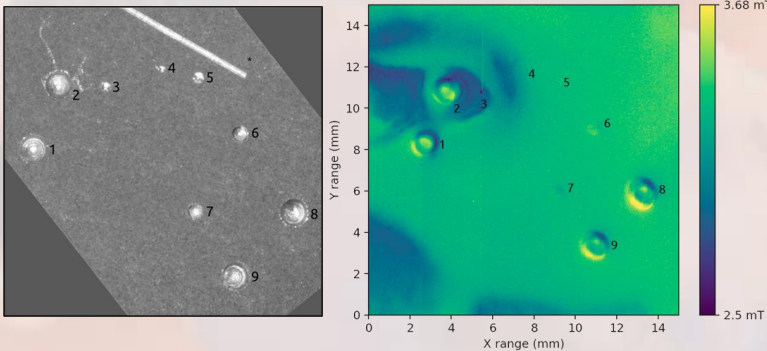
Digital measurement

Remote system

Our first results

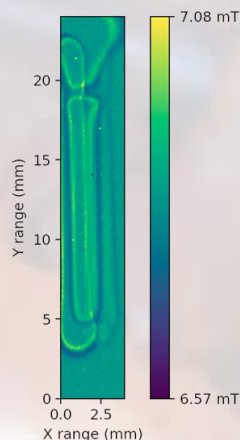
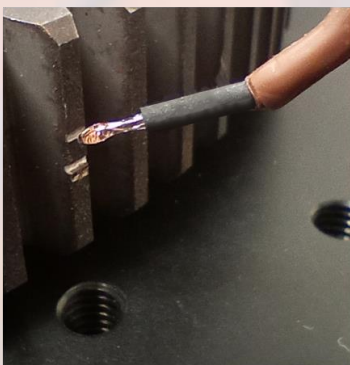
Detection and quantification of small defects in stray field imaging

Corrosion pitting



Detection of defect in complex geometries

Damage on gear



We have also good first results on **detection of crevices corrosion under paint and holes in steel tube** with inspection from inside the tube.