

# Magnetic imaging arrays using quantum and classical sensors

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After key demonstrations of the superior sensitivity available with optically-pumped magnetometers (OPMs), an essential driver for a variety of practical applications is now the miniaturisation and integration of this type of sensor. Devising a scalable manufacturing process remains an important challenge. In our work, we focus on OPMs based on rubidium vapour cells produced in a scalable silicon wafer microfabrication process [1]. The goal here is to combine multiple cells to a magnetic imaging array [2]. We illustrate the imaging capacity of such an array with a fluxgate-based similar magnetic camera. In addition to medical imaging, a key application example of this technology is electric vehicle battery diagnostics.

[1] Kitching, J. Chip-scale atomic devices. *Appl. Phys. Rev.* **5**, (2018)..

[2] Alem, O. et al. *Opt. Express* **25**, 7849 (2017).