

## QUANTUM SENSING

Quantum sensing employs the delicate states of particles (atoms, electrons, photons) to detect physical changes in an environment. There are many quantum sensor approaches and platforms, each with their unique characteristic advantages and utility.

Diamond crystals and their various colour centers and spin defects, present themselves as a highly accessible quantum sensing platform. The quantum spin state of electron and nuclear spins associated with these defects can be easily controlled and read out under ambient conditions, thanks to the inertness, ruggedness and transparency of the diamond crystals.

## DIAMOND-BASED QUANTUM SENSORS



#### Colour Center Genera on

Our technology is based on synthetically grown diamonds, treated in our labs to incorporate crystal defects with unique quantum properties



#### Optoelectronic Integra on These diamonds are electronically

These diamonds are electronically integrated into custom chip carriers for direct control and measurement of the defect's quantum spin states



### Component Innova on

The chips can be directly integrated into various components for sensing, detection or timing, such as our chip-scale atomic clock component

# **OPPORTUNITIES**

**Chip-scale diamond quantum sensors** close the gap between chip-scale formfactors and the need for high precision. These quantum sensors provide a signit cant upgrade in performance, reliability and robustness while maintaining a compelling size, weight and price ratio, for new application areas.



Reliable navigation for the most dik cult conditions



Local primary clocks with longer holdover for stable timekeeping



Rugged material properties for extreme conditions



Versatile and convenient sensors with wide utility

We develop next-genera on Chip-Scale Quantum Sensors for precise measurements, reliable naviga and robust communica on across land, sea and space