QUANTIC

The UK Quantum Technology Hub in Quantum Enhanced Imaging

Imaging the unviewable

How do you see objects around corners into a building or through obscurant media? QuantIC is developing imaging systems that can do this.

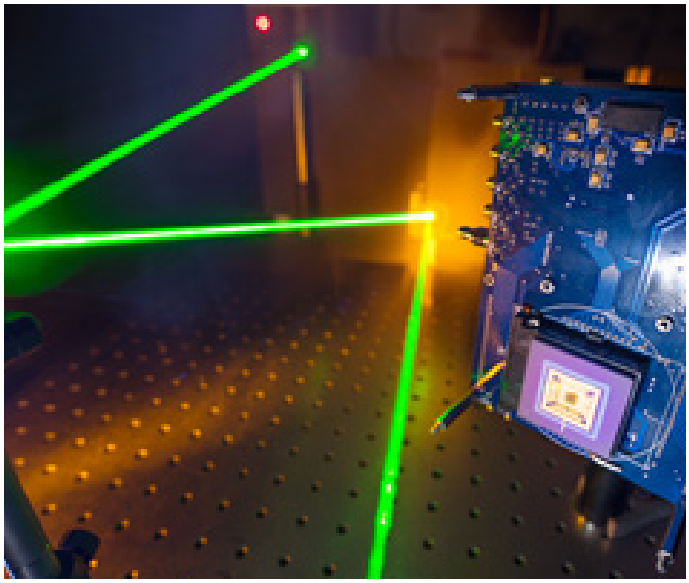
The ability to see the unviewable could provide a crucial advantage in many situations, from collision avoidance to search and rescue for emergency services. But how is this achievable?

Light can bounce off surfaces and we take advantage of this property to probe an object that is located around an obstacle (around a corner or behind a wall). After multiple scattering events, a very small amount of light that has interacted with the object around the corner will be bounced back within the line of sight of the camera.

The extreme single-photon sensitivity of SPAD detectors means that this small amount of light can still be detected. We have used both QuantiCAM SPAD arrays and single-pixel SPAD detectors in our systems and the photon-timing information from either detector is used to enable reconstruction. QuantIC is working with companies including Thales and ST Microlectronics to develop the technology.

We are looking for new industry partners interested in developing systems and possible modifications based on this technology to address market needs in the following areas:

- Seeing around corners – collision avoidance, fire and rescue services, defence and security
- Monitoring the ripeness and health of fruit and vegetables
- Remote 3D imaging (>1 km in air, > 8 absorption lengths in water)
- Non-invasive medical imaging
- Scientific instrumentation for research and development



QuantIC has a £4M Partnership Resource Fund to support industry led projects to develop our new technology and facilitate its translation to market commercialisation.

For more information, please contact:

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