



Q-Eye Sensors – high-speed, ultra-sensitive Terahertz sensing platform for security screening and medical imaging

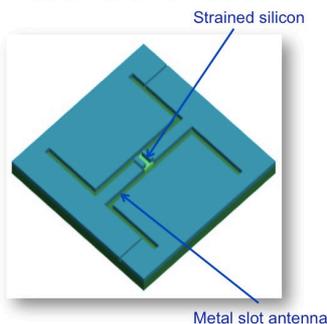
Terahertz (THz) frequency radiation is a solution for the growing \$500bn market for faster, more sensitive and more accurate medical imaging, security screening and product safety inspection. It is intrinsically safe, non-ionising and non-destructive. It can be used for high speed imaging and to probe spectroscopic signatures of explosives and other materials, even when hidden or in degraded visual environments. It can be used for stand-off, covert detection in personnel and crowd screening. Q-Eye Sensors is developing a THz sensing and imaging platform that enables inspection and screening devices that are orders of magnitude faster than those currently available, with a sensitivity that can detect a single photon and even see round corners.



Technology overview

Currently, raster scanning of focal plane arrays of THz detectors struggle to produce good image quality and contain no spectral information. Q-Eye is developing ultra-fast spatial light modulators with a wide spectral range in THz and millimeter wave radiation, enabling computational imaging using a single detector. Besides its speed and accuracy for inspection and screening, the sensitivity of Q-Eye technology to the level of a single photon opens up the potential upside of applications in quantum communications and cryptography.

Strained Silicon Sensor



The Company

Q-Eye Sensors was spun out from the University of Warwick by Professors Evan Parker and Terence Whall following a government funded £2M Basic Technology research programme. It is working in collaboration with the internationally recognized imaging team at the University of Exeter led by Professor Euan Hendry to design and test its first ultra-sensitive THz chips. The Q-Eye team is led by CEO Claes Bergstedt, who previously led the security imaging company Thru-Vision.

FUNDING TO DATE

2018 – Innovate UK grant - £100k
2018 – Quantic grant – £60k

Next Steps

Q-Eye is raising a seed round of £0.9m to deliver a prototype ultra-fast, high resolution, high dynamic range THz imaging system. A further £2m will deliver an operational system with the capability for spectroscopic interrogation of hidden explosives and other materials. It is seeking investors and is ready to open discussions with potential industrial application developers.

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Patents: EP14793281.8, US9964446 and granted in China 201480065927.1