QUANTIC

The UK Quantum Technology Hub
in Quantum Enhanced Imaging

Non-linear Optics

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UNIVERSITY OF Southampton

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Imagine if a mobile phone camera could image the Sun's UV or be used for a hospital's X-ray. There are numerous advantages if modern imaging technologies could be converted to see beyond visible wavelengths. QuantIC and Covesion Ltd, has developed a method for Infrared wavelength conversion.

Infrared wavelengths are vital for modern devices, being employed for testing carbon fibre components to satellite imaging for climate change. However infrared wavelengths suffer major shortfalls in the cost and quality of select detectors and laser sources.

QuantIC, in partnership with Covesion Ltd, have developed non-linear optical materials that enable wavelength conversions for infrared free-space and fibre optic devices at record-breaking efficiencies. These commercially available optics offer cost-effective access to novel applications such as telecoms data transfer on silicon photodiodes. Quantic is expanding these capabilities and strengthening UK sovereign in this developing field.

Specifications

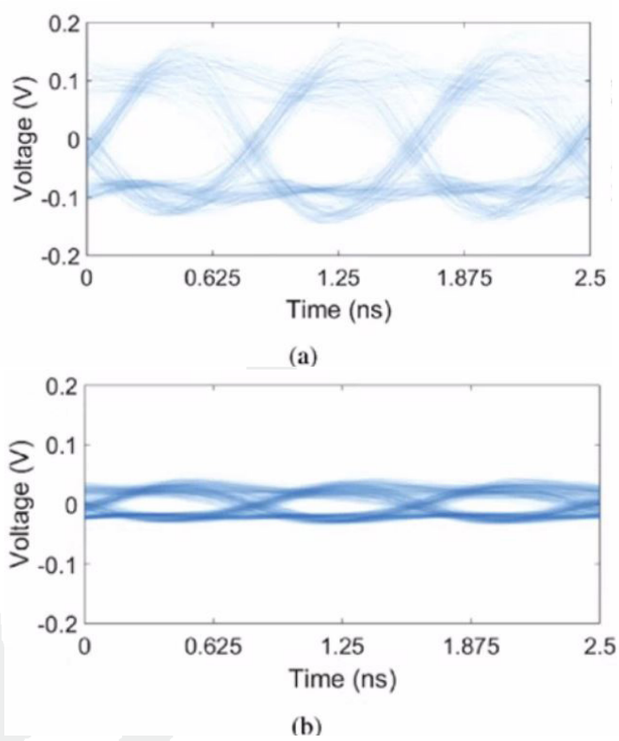
Photon detection of 1.5um - 4.5um

Detector speeds above 1GHz

Dark count rates below 1kHz

Latest Publication:

Upconversion detection of 1.25 Gb/s mid-infrared telecommunications using a silicon avalanche photodiode; Alan C Gray, Sam A Berry, Lewis G Carpenter, James C Gates, Corin BE Gawith, Peter GR Smith; Optics Express Vol 28, Issue 23, 2020



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