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UK

# Emerging & Enabling Technologies Innovate UK KTN

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# Technologies Overview

Quantum Technologies

Photonics

Sensors

Neurotechnology & Human Augmentation

Bacteriophage

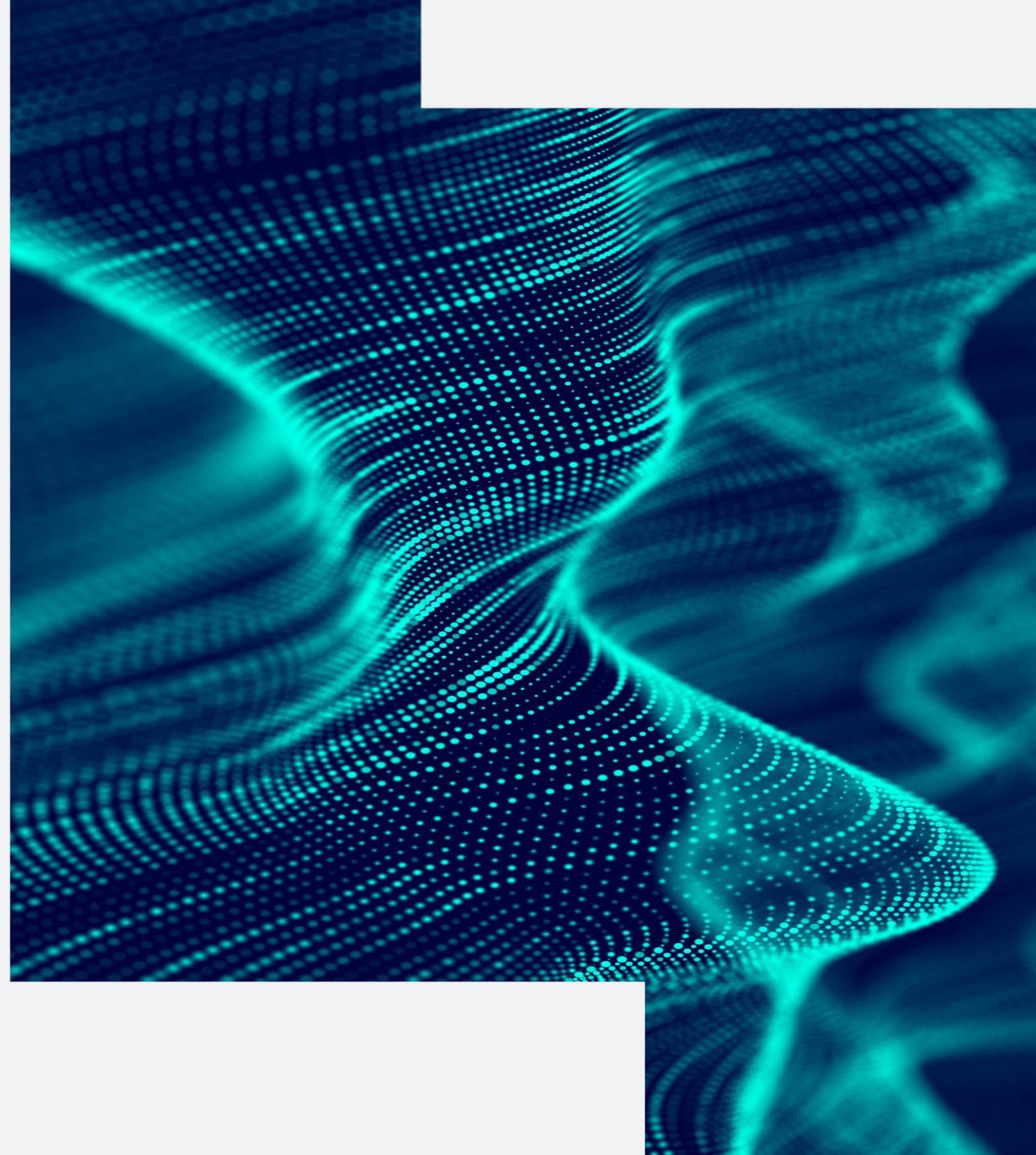
Digital tools for local authorities

Other

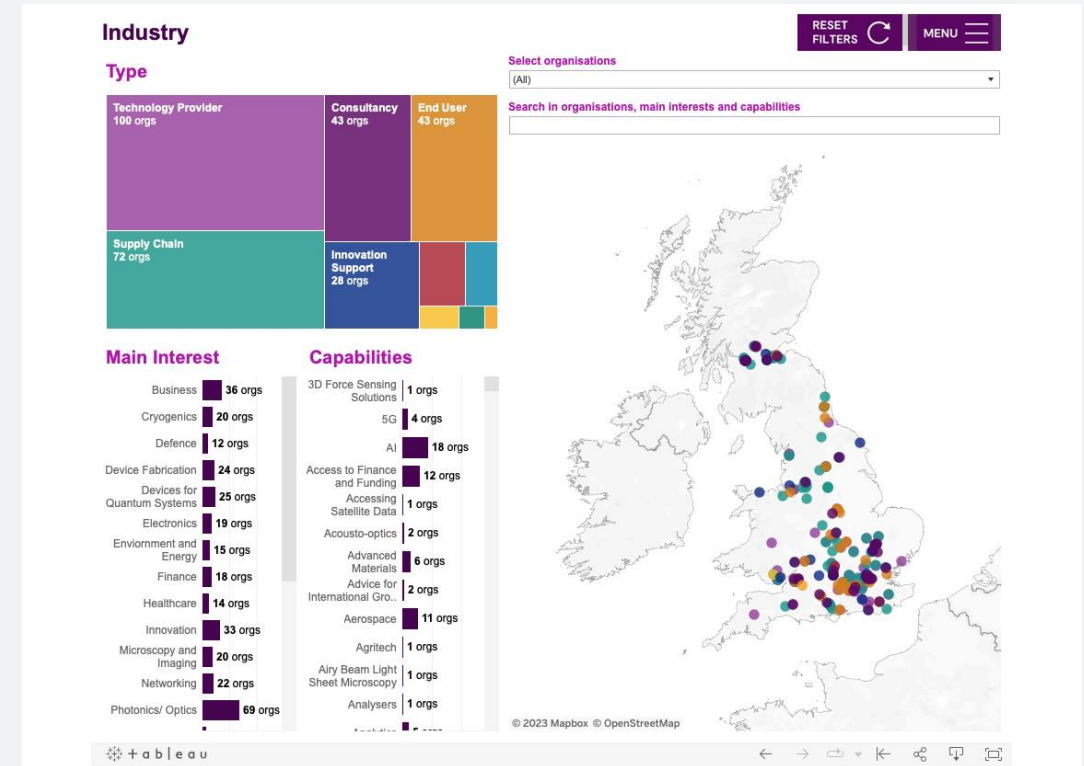


# Quantum Technologies

- <https://iuk.ktn-uk.org/quantum/>
- Supports across multiple sectors & topics including but not limited to telecommunications, electronics sensing & photonics, imaging, AI, energy, healthcare, finance, environment, navigation.
- Quantum Technologies Showcase  
London 2nd Nov 2023



# Quantum Landscape Map



# Example Applications of Quantum Technologies in Agrifood Industry

**Plant maintenance and scheduling** using quantum computing and quantum annealing.

**Materials discovery** for the Agrifood industry e.g. storage materials to expand shelf lives, fertilisers and many more.

**Weather monitoring** using Lidars.

**Counterfeit detection** for food and drinks: notably oils, alcohols and other produce using enhanced quantum spectroscopy.

Quantum Sensing for **livestock health monitoring**.

# Photonics

<https://iuk.ktn-uk.org/photonics/>

Supports the UK network of photonics and photonics enabled companies across sectors including healthcare and agrifood.

Photonics for...Agrifood Webinar

<https://iuk.ktn-uk.org/events/photonics-for-agri-food/>



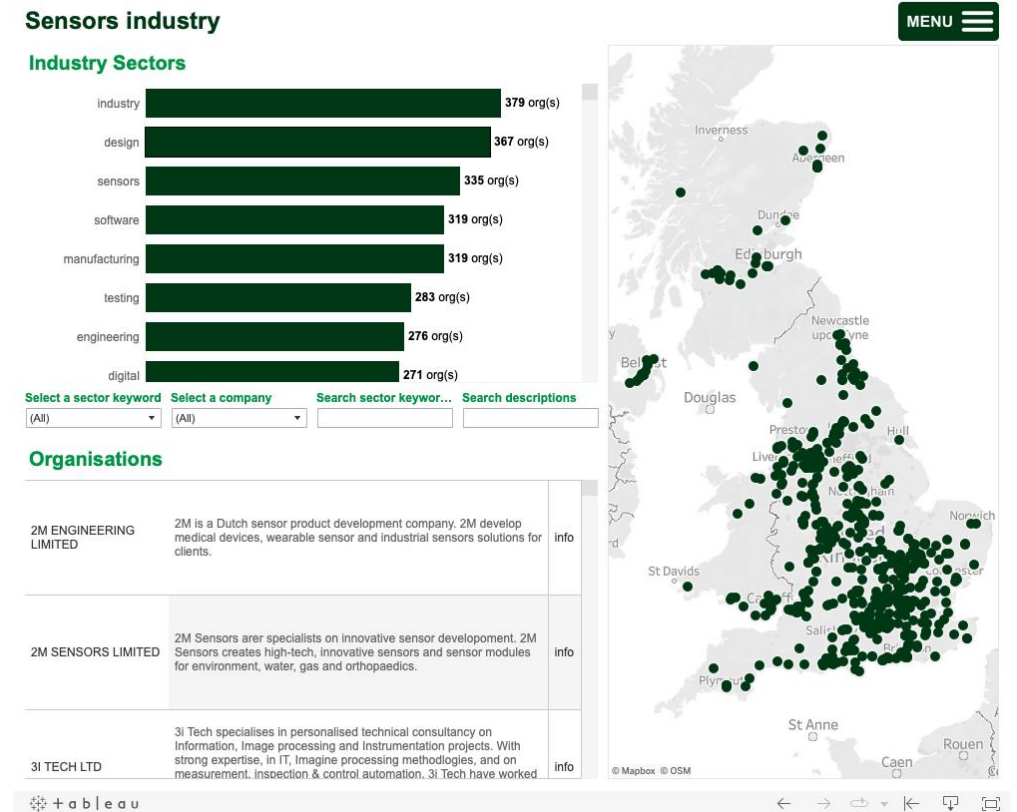
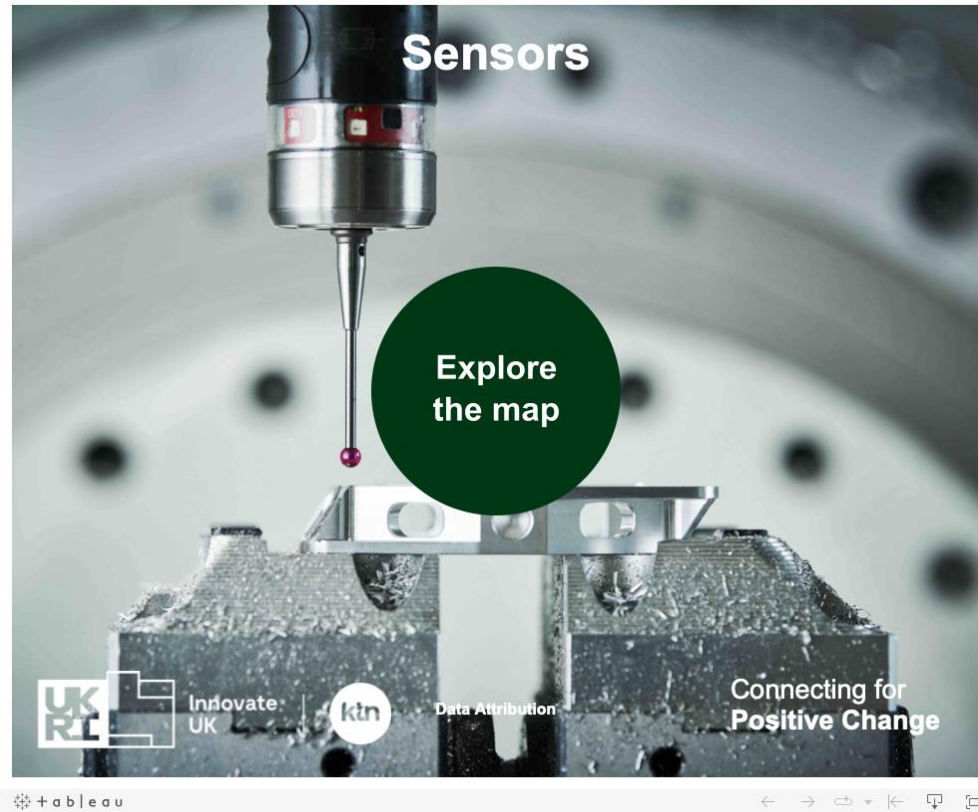
# Sensors

<https://iuk.ktn-uk.org/sensors>

Works with a broad range of stakeholders across topics including detection, measurement, assays, smart technologies, metrology and calibration.



# Sensors Landscape Map





# Example Applications of Photonics/Sensors in Agrifood Industry

**Sustainability improvement** via portable sensors for soil health.

**Plant health** – numerous sensing or imaging technologies, such as using fluorescence imaging or via hyperspectral imaging technologies.

Photonics devices to **detect pollution discharges** from agriculture activities.

**Animal health and disease control** – appropriate monitoring and detection of disease and animal health.

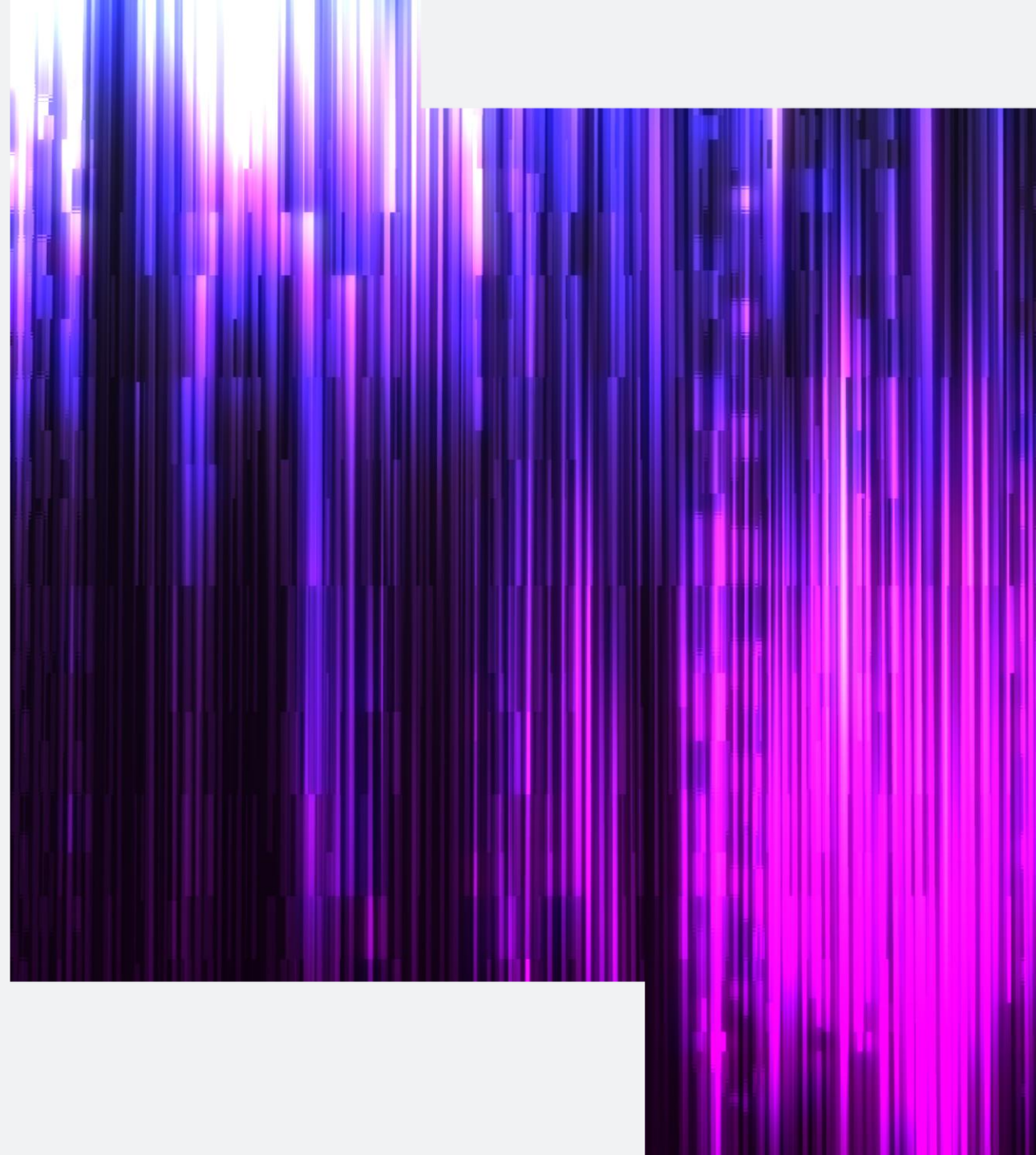
LED lighting technology for **indoor farming**.

Sensing technologies **for food manufacturing and processing**.

# Phage Innovation Network

<https://iuk.ktn-uk.org/programme/phage-innovation-network/>

The Phage Innovation Network provides a forum for the UK's community of phage researchers, innovative companies, end user industries, funders, regulators, those interested in alternatives to antibacterial solutions, and other key stakeholders to network and develop new ideas.



# Example Applications of Phage in Agrifood Industry

## Food production & safety

- Control of foodborne pathogens & spoilage organisms (e.g., *E. coli*, *Listeria monocytogenes*)
- Equipment sanitation

## Livestock production

- Prevention of pathogens entering food chain (e.g., *Salmonella*, *E. coli*, *Campylobacter*)
- Improving yield
- Reducing methane production
- Reducing overuse of antibiotics

## Crop production

- Pre and post harvest plant pathogen control
- Control of spoilage organisms
- Control of foodborne pathogens



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# Thank you

Reach out to be connected with sector leads in the Emerging & Enabling Technologies Team:

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