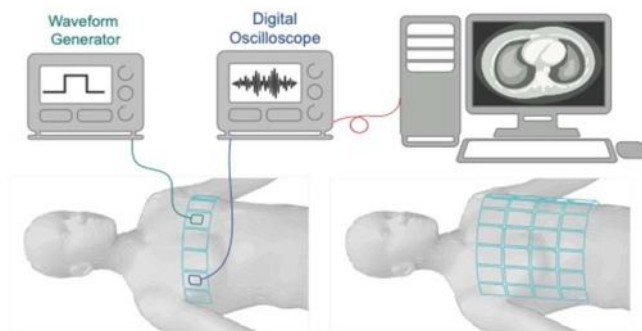


Contactless non-invasive imaging using a metamaterial array

Metamaterial array for contactless imaging.

Applications: Medical diagnostics, 3D printing, Sensing equipment



Features	Benefits
Improved defect localisation method in which spatial localisation is determined by using the time-domain reflectometry of magneto inductive waves	Opens the possibility of real-time contactless monitoring of inhomogeneous conductive environments
A metamaterial array detects conductivity distribution within the human body, enabling continuous dynamic monitoring of biological tissue	Useful for monitoring ventilator-associated lung injuries in intensive care patients e.g. extravascular lung water, atelectasis and hyperinflation
Could be arranged on a flexible substrate wrapped around a patient's chest or placed in a mattress, allowing contactless lung monitoring at the patient's bedside	Beneficial for patients too sick for frequent transport and where affixing electrodes to the skin is impossible due to skin trauma or sweat

Features	Benefits
Use of a post-processing method to filter and enhance the reflection pulse; Capable of locating multiple defects	Enables isolation of a reflection pulse and subsequent localisation of the defect, its characterisation and location
Provides a method to map any electromagnetic property across a surface	Can provide 3D tomographic images of 3D printed objects and materials as they are printed, providing material assessment and defect localisation

Available for

- Co-development
- Consulting
- Licensing

To find out more, contact enquiries@innovation.ox.ac.uk and quote the project number.

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