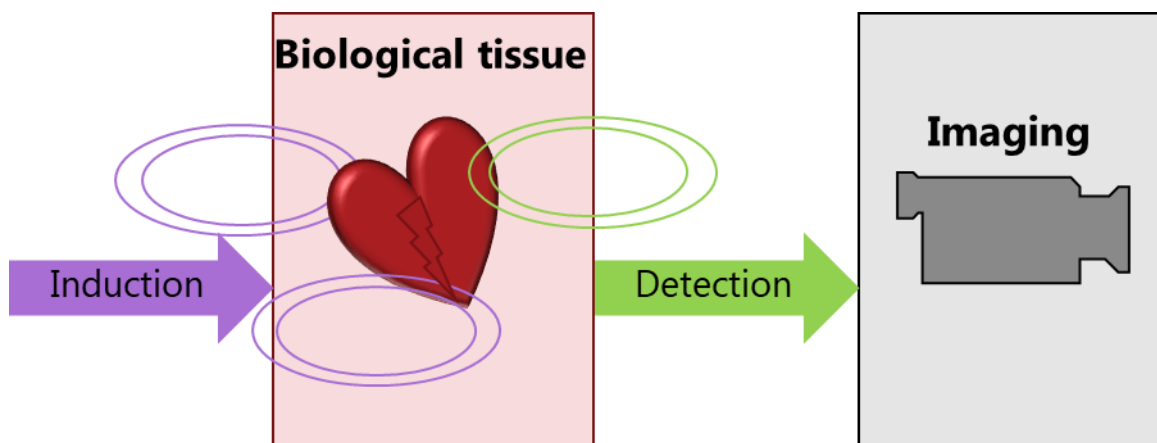




Imaging Conductivity

High sensitivity medical diagnostics with quantum technology

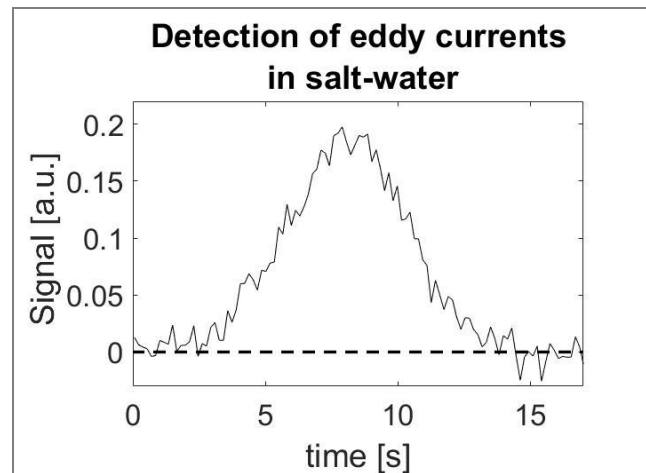


Background

Eddy currents are known from induction heating and from eddy-current brakes used in some high speed trains. When induced with a magnetic field, eddy currents can be detected in many conductive materials. This is for instance the basis of detecting conductive materials hidden in the ground or in walls.

The invention

The device works by inducing and detecting eddy currents in the conductive object to be imaged. It exposes the object to an oscillating magnetic field (kHz or MHz) which induces eddy currents in the object. The eddy currents are then detected with the internal magnetometer to yield information about the conductivity. Our invention gives high sensitivity, which makes it possible to detect low conductivity objects (such as biological tissue).



Proof-of-principle detection of eddy currents in salt-water (as a proxy for biological material).

Key selling points

Detection, imaging and characterization of conductive objects is of interest

- Bio-medical devices/medical diagnostics
- Imaging biological tissue
- Non-destructive method - The device is placed at a distance from the object to be imaged
- High sensitivity

Development status

Laboratory proof-of-principle demonstration of the ability of the device and method to detect low-conductivity objects (salt-water as a model for biological tissue).

Intellectual property rights

Patent application filed, priority date April 9th 2018, and updated October 2018