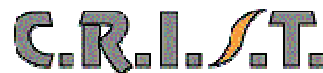




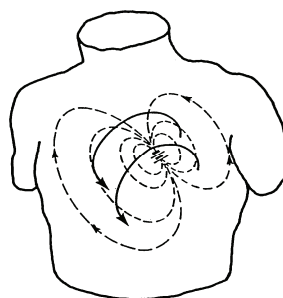
Remote Magnetic Sensing of People

University of Plymouth (UK)

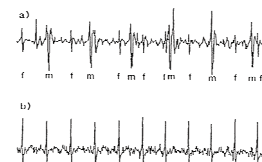
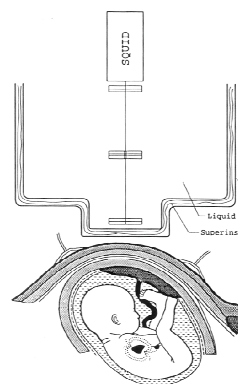


BACKGROUND and BASICS

- The electrical activity of the human body produces magnetic fields which can be detected and measured to help diagnosis of illness. The methods used so far employ SQUID magnetometers which are very expensive (MEuros).



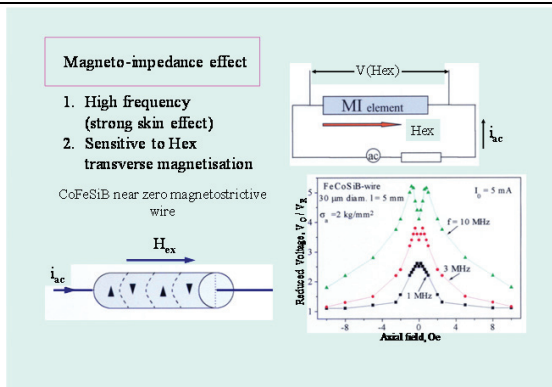
Field from the human heart



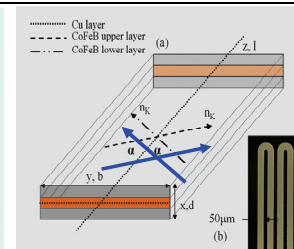
a) electrical (ECG) signal
b) magnetic (MCG) signal (baby)

CONCEPT and SOLUTION

- New inexpensive sensors are being researched costing as little as tens of Euros. These can open the way for wider use of detection of biomagnetic fields.
- One possibility is to use the Giant Magneto Impedance Effect for this purpose.



Giant Magneto Impedance (GMI)



GMI Response of crossed anisotropy thin film sandwich structure to axial magnetic field

STATUS and OUTLOOK

Research Status

- One PhD project completed with 1 nanoTesla sensitivity achieved. We need a commercial partner and sponsorship of another PhD to achieve a differential system with a sensitivity of better than 0.1 nano-Tesla for medical and other sensor applications



Part of the Microfabrication and Nanomagnetism Lab in the University of Plymouth

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