



## LACTATE DETECTION USING MICROWAVE SPECTROSCOPY FOR IN-SITU MEDICAL APPLICATIONS

J. H. Goh<sup>1</sup>, A. Mason<sup>1</sup>, A. I. Al-Shamma'a<sup>1</sup>, M. Field<sup>2</sup>, P. Browning<sup>2</sup>

<sup>1</sup>Built Environment and Sustainable Technologies (BEST) Research Institute,  
Liverpool John Moores University,

Henry Cotton Building, 15-21 Webster Street, Liverpool, L3 2ET, UK.

<sup>2</sup>Liverpool Heart and Chest Hospital – NHS Foundation Trust

Thomas Drive, Liverpool, L14 3PE, UK.

Email: [j.h.goh@2006.ljmu.ac.uk](mailto:j.h.goh@2006.ljmu.ac.uk)

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*Submitted: June 30, 2011    Accepted: July 30, 2011    Published: September 1, 2011*

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*Abstract –Lactate is an indicator of neurological impairment during aortic aneurysm surgery, and thus its detection could provide the basis for improved treatment regimes, better quality of care, and enhanced resource efficiency within the UK National Health Service (NHS). This article considers the use of low power microwave sensors to detect varying lactate concentrations in distilled water; sample sizes of 10ml and 0.5ml are considered via two sensor designs. Microwave sensors provide a rapid non-invasive method of material analysis, which is robust and cost-effective, in addition to harbouring huge potential for a wide range of biomedical applications.*

**Index terms:** microwave, cavity, sensor, lactate, cerebrospinal fluid.