

***IN-SITU, REAL-TIME, SELF CLEANING, MEMBRANE INLET
MASS SPECTROMETRY FOR WATER ANALYSIS***

Khalid Thabeth*

Stephen Taylor

Advanced Sensors Ltd

8 Meadowvale Road

Carrickfergus BT38 8YF Northern Ireland

Voice: +44 (0) 28 9332 8922

Fax: +44 (0) 28 9332 8669

gerard.cooke@advancedsensors.co.uk

Jeyan Sreekumar

University of Liverpool

Liverpool, UK

The use of a Membrane Inlet Mass Spectrometer (MIMS) for detection and analysis of produced water. The system consists of a quadrupole mass spectrometer (QMS) connected to a capillary probe with a silicone based membrane. The produced mass spectra and calibration plots from the MIMS instrument show the capability to measure levels of individual components hydrocarbons within produced water and sea water etc. The generated mass spectra from the field and laboratory tests also show the ability to distinguish and measure the concentrations of toxic components in oil (e.g. benzene, toluene and xylene; BTEX).

The QMS based MIMS system is capable of measuring total oil content in cocktails or mixtures of different oils and grease in water unlike most current oil in water analyzers that rely on secondary effects of the hydrocarbons, i.e. Fluorescence, Absorption etc.

###