

## **C-GC-MS AND ITS APPLICATION TO CRUDE OIL ANALYSIS**

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The gas chromatograph linked to a mass spectrometer with computerised data acquisition capability (C-GC-MS) makes for a very versatile and powerful analytical tool. The important function of the GC-MS in petroleum exploration and production studies is its ability to detect biomarkers.

What are biomarkers? They are organic compounds whose carbon skeletons give an unambiguous link with a known natural or biological product. Examples are isoprenoids, triterpanes, steranes, sterols, etc. In other words, they may be described as 'chemical fossils'. Their thermal stability in oils and sediments (source rocks) make them very useful in oil to source rock correlation studies or determination of the number of oil pools present in an area. A study using GC-MS data on nine 'oil stained' rock samples from S.E. Asia and the Bahamas will be highlighted as an example to illustrate the usefulness of C-GC-MS in the recognition of petroleum and determination of its source and maturity.