

Oxygen-Deuterium Isotopic Measurements of Water using a variety of EA - Pyrolysis – Isotope Ratio Mass Spectrometry operating in Continuous Flow mode.

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The technique of interfacing an elemental analyser to a stable isotope ratio mass spectrometer has, since its inception in 1983 (Preston and Owens), proved a remarkably versatile analytical tool for the measurement of carbon and nitrogen isotopes across a wide application base. In 1994, the measurement of sulphur isotope ratios was added to the list and more recently oxygen and hydrogen. The analysis of oxygen and hydrogen involved a departure from the normal flash combustion mode of operation to one of pyrolytic thermal decomposition of the sample.

This work describes the application of the technique, in a variety of forms, to the measurement of hydrogen and oxygen isotopes in water. Results using high medium and low temperature pyrolysis conditions, with and without the presence of a catalyst will be presented.