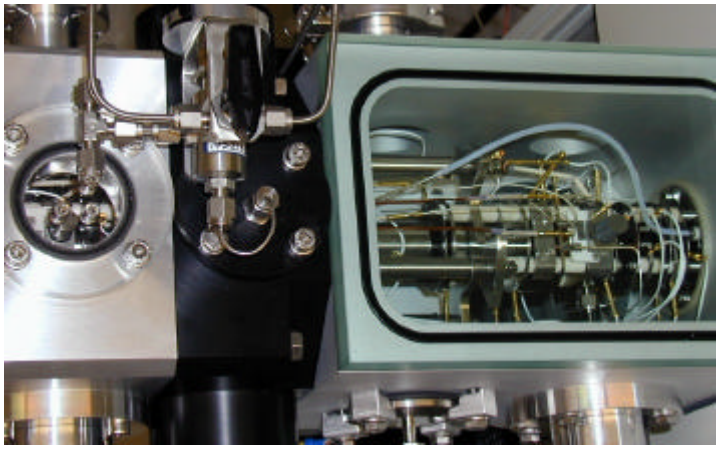
Module Description No. MD030920
High Resolution Mass Spectrometer

AMD QuAS³AR

AMD Intectra GmbH

Outstanding Effectiveness of Substance Identification in GC-MS analyses

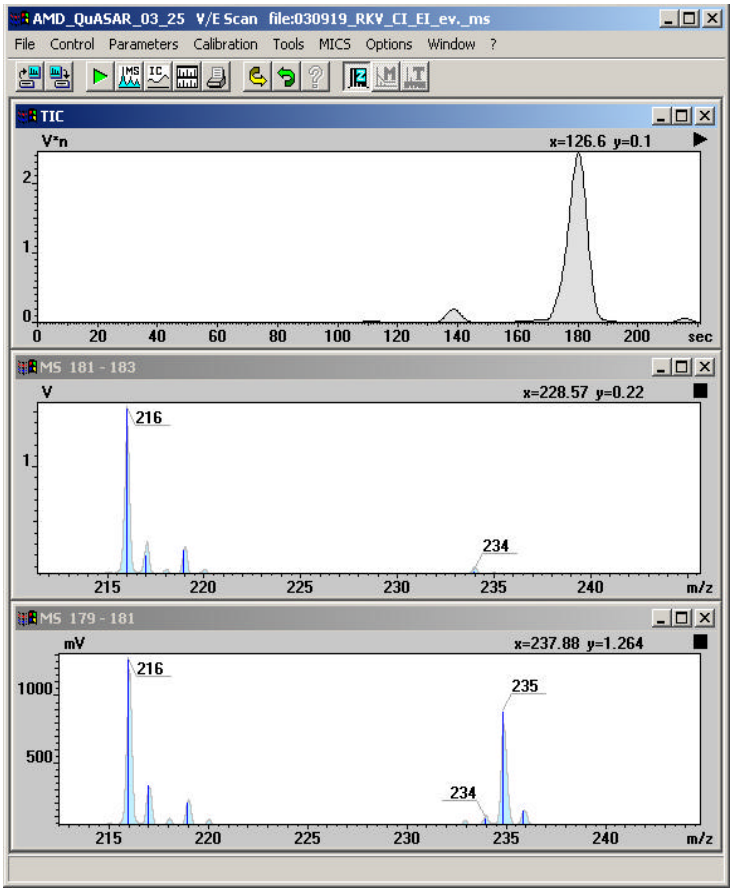
Module	Description
CI-UDIC	**CI/EI** ion sources in **U**nique **D**ual **I**onization **C**onfiguration



The simultaneous operation of independent **CI** and **EI** ion source in **GC/MS** mode allows to combine the information content of EI spectra and CI spectra in one GC/MS run.

Both **"in-axis" ion sources** are coupled to the gas chromatograph via independent GC/MS transfer lines as described in **module description No. MD030824**

EI and **superimposed EI/CI** mass spectra are recorded, alternatingly. This **new and unique** technology allows in rapid scanning mode to record sufficient number of scans for each chromatographic peak. Effectiveness of GC/MS analyses is enhanced significantly.



The **gas chromatogram** represents a part of a GC-MS analysis in food chemistry*. **EI** and **superimposed EI/CI** mass spectra have been obtained with a high scan speed such that several spectra in each mode **could be accumulated within the GC peak width.**
The compound represented by the largest GC peak in this part has been identified. Information about the compound and its structure is subject of a publication, elsewhere.

The partial **EI** mass spectrum of this compound is shown in the middle part of the figure. It shows a strong peak at mass 216 and a weak peak at mass 234 which was assumed to be the molecular ion.

The partial **superimposed EI/CI** mass spectrum shown in the lower part of the figure **confirms the** assumed **existence of the molecular ion** by the presence of a strong quasimolecular ion (M+H) at mass 235.
The **unequivocal confirmation of the presence of molecular ions** can be achieved within **one GC-MS run** and results in corresponding savings of analysis time and costs.

* (By courtesy of the Institute of Food Chemistry, University of Hannover)

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