

Researchers solve 40-year-old Fourier Transform Mass Spectrometry phasing problem

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(Phys.org) -- Scientists at the University of Warwick have developed a computation which simultaneously doubles the resolution, sensitivity and mass accuracy of Fourier Transform Mass Spectrometry (FTMS) at no extra cost.

Researchers in the University's Department of Chemistry have solved the 40-year-old phasing problem which allows plotting of spectra in absorption mode.

This breakthrough can be used in all FTMS including FT-ICR, Orbitrap and FT-TOF instruments and will have applications in proteomics, petroleum analysis, metabolomics and pharmaceutical analysis among other fields.

Professor Peter O'Connor, who co-developed the method, said: "We have vastly improved the quality of data available at no extra cost.

"FTMS is used extensively in the fields of pharmaceuticals, healthcare, industry, natural resources and environmental management so this breakthrough represents a real step towards improving research across the board in these areas."

The method is detailed in the study Absorption-Mode: The Next Generation of Fourier Transform Mass Spectra published in the journal

Analytical Chemistry.

It is co-authored by Professor O'Connor, Yulin Qi, Mark Barrow and Huilin Li from the University of Warwick.

More information: Paper online:
pubs.acs.org/doi/abs/10.1021/ac3000122

Provided by University of Warwick

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