

Fourier transform ion cyclotron resonance (FT-ICR) mass spectrometer

A high-frequency mass spectrometer in which the cyclotron motion of ions, having different mass/charge ratios, in a constant magnetic field is excited essentially simultaneously and coherently by a pulse or a radio-frequency electric field applied perpendicular to the magnetic field. The excited cyclotron motion of the ions is subsequently detected on so-called receiver plates as a time domain signal that contains all the cyclotron frequencies that have been excited. Fourier transformation of the time domain signal results in the frequency domain FT-ICR signal which, on the basis of the inverse proportionality between frequency and the mass/charge ratio, can be converted into a mass spectrum. The term is sometimes contracted to Fourier transform mass spectrometer (FT-MS).

See also *ion cyclotron resonance (ICR) mass spectrometer*.

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