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(54) **Title:** SELF-CALIBRATION OF HIGH RESOLUTION MASS SPECTRUM

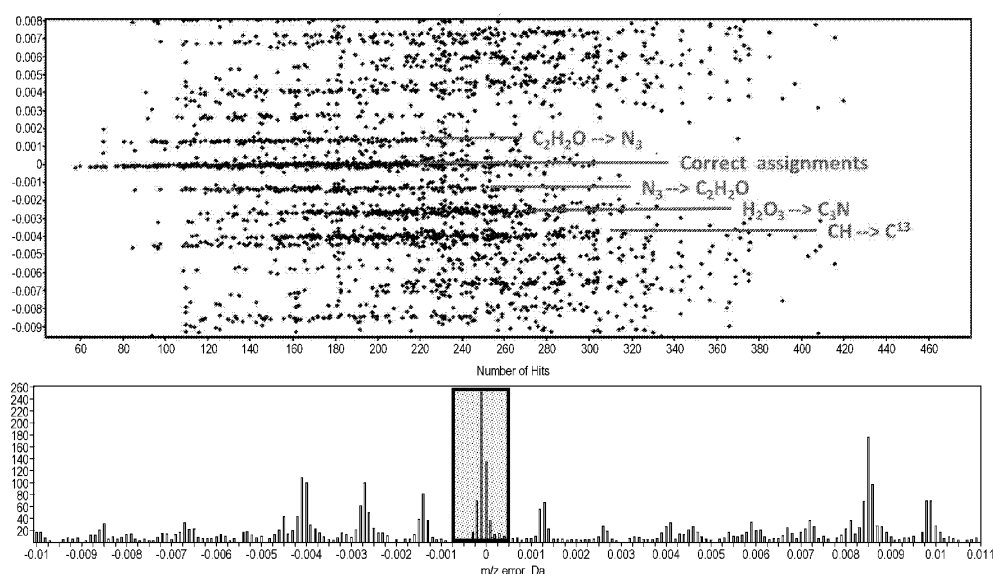


Fig. 5

(57) **Abstract:** A method of self-calibrating a mass spectrometer or mass spectral data is disclosed. At least some first observed mass to charge ratios are matched with or against a comprehensive reference set of possible or predicted elemental compositions having known precise mass to charge ratios. One or more calibration parameters of a calibration routine are then adjusted so as to optimise the match between one or more of the first observed mass to charge ratios and the corresponding known precise mass to charge ratios of one or more possible or predicted elemental compositions contained within the reference set.

[Continued on next page]

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