the most common candidates to be formed on a hot filament by thermal dissociation.

Acknowledgments

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Automation of a Residual Gas Analyzer on a Time Shared Computer

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(Received 28 July 1971)

The automation of a quadrupole mass spectrometer-residual gas analyzer (RGA) on a time-shared IBM 1800 Data Acquisition and Control Computer is described. The RGA, which is used to determine the partial pressures of various gases in a vacuum system, may be operated up to a maximum data rate of $\sim$20 000 points/sec (pps) in an interleaved manner with multiple slow scanning ($\leq$20 pps) instruments. We will review in detail the hardware and software considerations regarding the design and subsequent interfacing of the instrument to the computer. Methods for initiating data collection, entering experimental parameters, and analyzing the experimental data, such as spectrum plotting, smoothing, peak location, mass identification, and calculation of the partial pressures by using a least squares approximation to fit mass peaks, will be discussed with examples.