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(54) **MOBILITY SPECTROMETER**

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(57) **ABSTRACT**

The present invention relates to an improved ion mobility spectrometer and method for the analysis of chemical samples. The improvements are realized in the optimization of resolution and sensitivity. Increases in sensitivity are realized by preserving a narrow spatial distribution of migrating ions through the use of periodic/hyperbolic field focusing. Additionally, novel combinations and configurations of components are used to simultaneously maintain a well defined ion packet and preserve sample throughput to the detector.

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