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(54) **RF MULTIPOLE ION GUIDES FOR BROAD MASS RANGE**

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(57) **ABSTRACT**

In a multipole rod ion guide system operated with RF voltages to collect or transmit ions, the inhomogeneity of the electric RF fields is increased in front of the ion guide rods by forming the rod surfaces from a plurality of spaced electrodes. The inhomogeneous fields produced by the plurality of electrodes increases the mass range over which the ions are guided effectively while still maintaining a pseudo-potential minimum which is as well defined as possible close to the axis. Particularly favorable ion guides of this type make it possible to apply an axial DC field to the guide system for the active transport of the ions.

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