

ABSTRACT**METHOD AND APPARATUS FOR SPATIAL COMPRESSION AND INCREASED
MOBILITY RESOLUTION OF IONS**

We describe an apparatus for ion peak compression comprising: a first region
5 configured to receive an ion packet comprising a plurality of ions and to separate the plurality
of ions into one or more first region ion sub-packets having respective peak widths; a second
region separate from the first region, the second region configured to: receive a first ion sub-
packet of the one or more first region ion sub-packets, and generate an electric field waveform
traveling along a first direction of propagation that is configured to drive the received first ion
10 sub-packet along the first direction of propagation and generate a first compressed ion sub-
packet from the first ion sub-packet; in which the first compressed ion sub-packet has a
narrower peak width than the first ion sub-packet.

Figure 1