

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

Methods and apparatuses for ion peak compression and increasing resolution of ions are disclosed. Packets of ions are introduced into a device. A first electric field is applied for dispersing the ion packets temporally or spatially according to their mobilities. A second intermittent traveling wave is applied for regrouping or merging the dispersed ion packets into a lesser number of trapping regions with narrower peaks. The ion packets are compressed into the narrower peak regions by varying a duty cycle of the intermittent traveling wave.

Figure 1