

DEVICE FOR CONTROLLING AN ION, METHOD FOR FORMING THE SAME, AND  
METHOD FOR CONTROLLING AN ION

5 ABSTRACT

A device for controlling ion, being operable in first mode, second mode, and combination thereof, having point trap and linear trap electrode arrangements, wherein, in first mode, the point trap electrode arrangement is configured to generate an RF field having point RF null to  
10 trap the ion at the point RF null above a surface of the device, wherein a distance of the point RF null to the surface is variable in response to change in a potential of an RF signal applied to the point trap electrode arrangement, and wherein, in second mode, the linear trap electrode arrangement is configured to generate another RF field having linear RF null to trap the ion at the linear RF null above the surface, wherein the ion is movable along the linear RF null in  
15 response to change in a potential of a DC signal applied to the linear trap electrode arrangement.

Figure 1A