

## Planar Flow-By Electrode Capacitive Electrospray Ion Source

### **Disclosure Number**

200201069

### **Technology Summary**

The device of the subject invention is a planar flow-by electrode electrospray ion source. The device of the subject invention uses a capacitor effect to separate ions in a liquid solution passing through it into two separate streams of liquid, one enriched in positively charged ions and the other enriched in negatively charged ions. As the solutions exit the channels, they each generate a charged droplet spray plume of the same polarity as that of the excess ions in the respective solutions. The charged droplets produced give rise to gas-phase ions and these ions are transported to the inlet region of another device, such as a mass spectrometer, for analysis. Compared to normal electrospray ion sources, the source of the subject invention provides for higher ionization efficiencies, because of the high degree of charge separation obtained, resulting in enhanced detection levels in ES mass spectrometry. In addition, the device of the present invention generates charged spray plumes without the need for a high voltage electrode. Also, this device provides a means to generate and analyze gas-phase ions of opposite polarity from the same sample simultaneously.

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