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(54) Title: MICROFLUIDIC DEVICES WITH GAS CHANNELS FOR SAMPLE NEBULIZATION

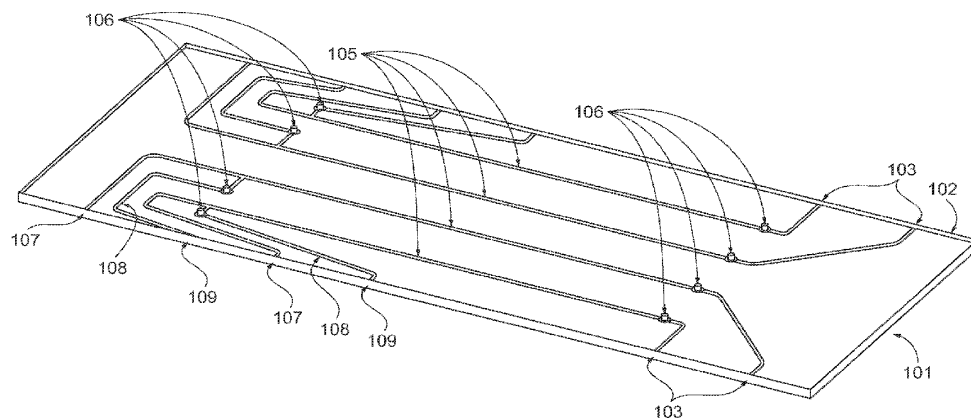


FIG. 1A

(57) Abstract: Methods, devices, and systems for performing nebulization of a sample from a fluid channel of a microfluidic device are described. The systems or devices disclosed herein may comprise microfluidic devices that comprise a gas channel used for nebulization of the sample at a fluid outlet of the microfluidic device. In some instances, the disclosed devices may be designed to perform isoelectric focusing followed by further characterization of the separated analytes using electrospray ionization coupled with nebulization to introduce the samples into a mass spectrometer. The disclosed methods, devices, and systems provide for fast, accurate separation and characterization of protein analyte mixtures or other biological molecules by isoelectric point.

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