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(54) **Title:** FLOW CYTOMETRY DEVICE

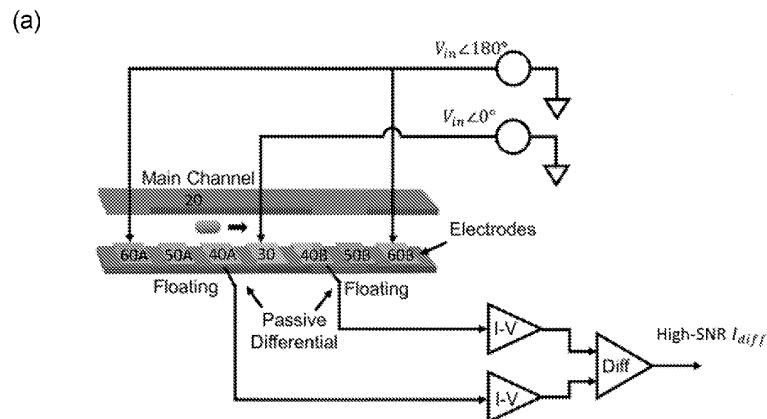


Figure 1

(57) **Abstract:** The invention relates to an impedance-based microfluidic flow cytometry device and a method of use thereof for determining a characteristic of a particle in a fluid suspension. Said device comprising: a channel comprising a sensing region to sense a particle flowing through the channel; an electrode arrangement disposed adjacent the sensing region, wherein the electrode arrangement is configured to generate at least one first region of differential current and at least one second region of differential current, and wherein the at least one first region and at least one second region have opposite phases of electric current. The electrode arrangement may be a double differential configuration having 5 electrodes in a coplanar arrangement, comprising a central electrode, two ground electrodes disposed adjacent the central electrode on opposite sides of the central electrode, and two end electrodes disposed adjacent the ground electrodes on the sides opposite to the central electrode.

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