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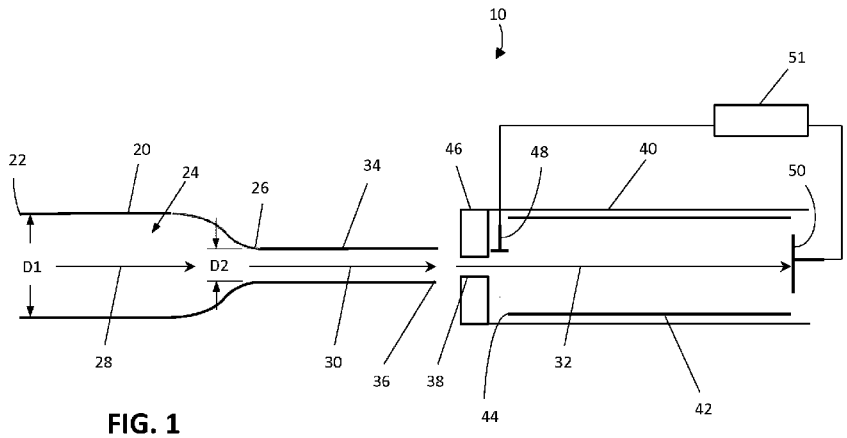


FIG. 1

(57) Abstract: The invention relates to methods and devices for molecular cytometry. The molecular cytometer is for use in the analysis of molecular tag labeled particles. In the molecular cytometer, volatile molecular tags attached to the particles, such as cells, are released as groups of molecular tags and ionized by the method of soft ionization to produce corresponding groups of molecular ions. The molecular cytometer has two detectors, one to detect the presence of the groups of molecular ions and the other to detect mobility separated molecular ions. The mobility separated molecular ions are synchronized to correspond with the groups of molecular ions.

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