

ABSTRACT

A light detection device includes a flow channel array that is arranged with axes of a plurality of tubes are parallel to each other and constitutes a flow channel plane, an irradiation optical system that includes a light source and emits light from the light source so that an oscillation direction of an electric field component of the light is parallel to the flow channel plane, an optical axis of the light is included in the flow channel plane, and the optical axis forms a predetermined angle θ_0 with respect to a direction orthogonal to the axes of the plurality of tubes on the flow channel plane, and a light detection system that detects light emission from the plurality of tubes. Assuming that a refractive index of a surrounding environment is represented by n_0 , a refractive index of a material of the tubes is represented by n_1 , and a refractive index of a material inside the tubes is represented by n_2 , with respect to an angle θ_1 of a light beam in the material of the tubes and an angle θ_2 of the light beam inside the tubes determined from the refractive indexes and the predetermined angle based on a predetermined formula, the predetermined angle θ_0 satisfies predetermined Formulas 1 and 2.