

Microfluidic systems for dielectrophoretic separation of fluorescent particles

ABSTRACT

This paper presents a suitable and unique system for observing dielectrophoretic particle separation in a microfluidic device. Details presented on the experimental setup used will enable real time examination, monitoring and analysis of carboxylate-modified latex sphere particles in a colloidal mixture. Observations of the particles were made possible through an optical setup that illuminates the particles that went through the microelectrode array in the microchannel that was controlled by two analog signal generators. Through the setup, it was easily observed that the latex sphere particles move at a flow rate of 0.2 l/s without colliding or overlapping on each other and successfully separated in two bands left and right. The new separation of one finest particles size for finest purification with respect to frequency was also observed, obtained and analysed.

Keyword: Carboxylate-modified latex; Dielectrophoresis; Experimental setup; Microfluidic; Purification; Separation