

عنوان مقاله:

Droplet Transportation Based on EWOD Effect on a Printed-Circuit- Board (PCB) Material

محل انتشار:

سومین کنفرانس بین المللی مهندسی برق (سال: 1397)

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خلاصه مقاله:

Electrowetting on a dielectric (EWOD) mechanism has shown great potential to transport and manipulate encapsulated samples inside a droplet. In this research, we have described the EWOD phenomenon on a printed-circuit board (PCB) substrate by using numerical and simulational studies. The droplet motion has been numerically investigated by employing a finite element method simulation. The electrowetting mechanism has been investigated by solving the multiphysics coupled electrostatic and droplet physics. The threshold voltage is studied for the proposed system. Both the effective EWOD force and droplet velocity are increased linearly by increasing the applied electric field and the velocity of 0.2 mm/s has been achieved for 300 V electric potential.

کلمات کلیدی:

Printed circuit board, electrowetting, droplet transportation, liquid chip

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