

## عنوان مقاله:

On mixing performance of an electroosmotic micromixer: voltage and frequency effect

## محل انتشار:

چهارمین کنفرانس ملی مهندسی مکانیک کاربردی (سال: 1400)

تعداد صفحات اصل مقاله: 6

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## خلاصه مقاله:

This paper investigates the impact of voltage and frequency on mixing index of a spiral electroosmotic micromixer numerically. To evaluate the effect of voltage on the mixing rate, voltage of  $0.1-0.4$  V is applied using direct electric field. The results show that the mixing rate increases with the voltage. For  $0.05$  and  $0.4$  V, the mixing index is  $89.3\%$  and  $99\%$ , respectively. Four frequencies are applied in the range of  $2$  to  $16$  Hz. The simulation results demonstrate that the higher the frequency, the more the fluids are exposed to turbulence. In case the applied frequency is  $2$  Hz, the mixing rate is  $95.05\%$ . As the frequency increases, the mixing rate at the microchannel output increases, and when the frequency is  $16$  Hz, the efficiency reaches  $99.15\%$ .

## کلمات کلیدی:

Electroosmotic micromixer, Voltage, Frequency, Mixing efficiency

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1329151>

