عنوان مقاله:

The obstacle shape effect on the mixing quality and performance index of T-type micromixer: Numerical Simulation

محل انتشار:

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

In this paper, a T-shape microchannel containing a mixing unit inserted in the straight main channel is de-signed to enhance the mixing quality by geometrical changings in the mixing unit. Governing equations on flow field and concentration field have been discre-tized and solved using finite element method. Ob-tained numerical results were validated by comparing the numerical data reported in literature which show acceptable agreement. A MQ parameter based on the concentration variation of the mixture is employed to evaluate the mixing quality in the micromixer. The PI factor is also represented to check the increment in mixing quality with reference to hydraulic parame-ters. The effect of the kind of obstacles located in mixing unit on the MQ and PI factors have been in-vestigated. The numerical results indicate that the type II gives better PI, so it has been chosen as the main case for the rest of study. The results indicated that the type III gives the best PI and mixing quality than the other models.

کلمات کلیدی:

Micromixer, Mixing quality, PI factor, Computational Fluid Dynamics (CFD), Numerical simulation

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