

流动与传递

Computational Fluid Dynamic Simulation of Liquid-Liquid Mixing in a Static Double-T-shaped Micromixer

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摘要 The laminar flow structure and mixing performance of T-shaped and double-T-shaped micromixers with rectangular cross-section have been investigated using computational fluid dynamic (CFD) simulation. FLUENT software is used to evaluate the mixing efficiency. The numerical simulation results show that the presented double-T-micromixer is highly efficient over T-shaped micromixer. The performance of double-T-micromixer with and without static mixing elements (SME) is also investigated. The enhancement in mixing performance is thought to be caused by the generation of eddies and lateral velocity component when the mixture flows through these elements. Mixing efficiency as higher as 97% is reached within a mixing length of 320 mm downstream from the first T-junction with the enhancement of three SMEs.

关键词 [micromixing](#) [microfluidics](#) [T-shaped micromixer](#) [microfabrication](#) [microreaction](#) [microelectromechanica systems](#)

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