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Computational Fluid Dynamics (CFD) Simulation on Mixing in T-Shaped Micromixer

Abstract

Computational Fluid Dynamics (CFD) simulation used to analyse the fluid mixing in micromixer. There are two cases of miscible liquids that involved within T-shaped micromixer which are ethanol-water and glycerol-water. The T-shaped micromixer consist of micro channel with two inlets channels and one outlet channel was constructed by using AutoCAD software. The effect of inlet velocity and width size toward mixing intensity were investigated. The mixing intensity values determine either good or bad mixing quality could be achieved. In this simulation, at low inlet velocity indicates good mixing quality as the mixing intensity value approaching to one. Whereas the effect of width size on mixing intensity are almost similar throughout simulated width sizes. Mixing intensity for the two cases of diffusion coefficient showed similar trend for different inlet velocity and width size of mixing channel.