

NUMERICAL SIMULATION AND ANALYSIS OF GAS-LIQUID FLOW IN A T-JUNCTION MICROCHANNEL

Pham hong Truong, Wen Lu, Zhang Hong Bo

TÓM TẮT:

Gas-liquid flow in microchannels is widely used in biomedicine, nanotech, sewage treatment, and so forth. Particularly, owing to the high qualities of the microbubbles and spheres produced in microchannels, it has a great potential to be used in ultrasound imaging and controlled drug release areas; therefore, gas-liquid flow in microchannels has been the focus in recent years. In this paper, numerical simulation of gas-liquid flows in a T-junction microchannel was carried out with computational fluid dynamics (CFD) software FLUENT and the Volume-of-Fluid (VOF) model. The distribution of velocity, pressure, and phase of fluid in the microchannel was obtained, the pressure distribution along the channel walls was analyzed in order to give a better understanding on the formation of microbubbles in the T-junction microchannel.