

This article presents a numerical study on forced convection of nanofluid flow in a two-dimensional channel with trapezoidal baffles. One baffle mounted on the top wall of channel and another mounted on the bottom wall of channel. The governing continuity, momentum and energy equations in body-fitted coordinates are iteratively solved using finite volume method and SIMPLE technique. In the current study, SiO<sub>2</sub>-water nanofluid with nanoparticles volume fraction range of 0- 0.04 and nanoparticles diameters of 30 nm is considered for Reynolds number ranging from 100 to 1000. The effect of baffles height and location, nanopar-ticles volume fraction and Reynolds number on the flow and thermal fields are investigated. It is found that the average Nusselt number as well as thermal hydraulic performance increases with increasing nanopartiles volume fraction and baffle height but accompanied by increases the pressure drop. The results also show that the best thermal- hydraulic performance is obtained at baffle height of 0.3 mm, locations of baffles at upper and lower walls of 10 and 15 mm, respectively, and nanoparticles volume fraction of 0.04 over the ranges of Reynolds number.