عنوان مقاله:

Effects of pulsatile parameters on the heat transfer rate in a V-corrugated tubular channel using nanofluid

نویسندگان:

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خلاصه مقاله:

In this paper, effects of various pulsatile parameters on the heat transfer rate using nanofluid in a V-corrugated tubular channel with constant wall temperature by computational fluid dynamics have been studied for a range of Reynolds number 011 011), frequency of pulsating (1 5 5 and wave amplitude 1 5 0 5). Operating fluid is a nanofluid with a watery base including the nano-copper particles. This numerical study is done by solving the continuity, momentum and energy equations by using the finite element method. The effective dynamic viscosity and thermal conductivity of the nanofluid have been specified by Brinkman and Patel et al. equations respectively. In order to assess validation of the model, a comparison was made between the results of this model and available numerical results in the literature that was showed the results of this model are in a good agreement with previous numerical studies. The results show that the heat transfer can enhance with an increase in the Reynolds number. In addition, decreasing in the frequency of pulsatile flow and amplitude can increase the rate of heat transfer

کلمات کلیدی:

Pulsatile flow; Nanofluid; Corrugated tubular channel; Heat transfer; Numerical modeling