عنوان مقاله:

Investigation on hybrid MoS۲ - SiO۲/H۲O nanofluidic flow and heat transfer characteristics in an asymmetric porous channel using AGM

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خلاصه مقاله:

In this investigation, the effects of active parameters such as Reynolds number (R),expansion ratio (α), shape factor (S) and temperature power index (m) on the MoS۲ -SiO۲/water based hybrid nanofluidic flow and heat transfer characteristics of anasymmetric porous channel are assessed. The main objective is solving the non-lineardifferential equations with the appropriate boundary conditions by utilizing Akbari-Gnji's method (AGM). The governing equations are made non-dimensional and solvedanalytically. The effect of different parameters on velocity and temperature profiles aredemonstrated in graphs for four different shape factor of nanoparticles such as, bricks,cylinders blades and platelets. Results have been compared with numerical method(Runge–Kutta ۴th) and comparison between AGM and NUM showed an excellentagreement. The results indicate that velocity profile increases with the increase of thetemperature power term and there is no change with increasing R. Also, Heat transferfunction has an inverse relation to both Reynolds number and temperature power index.

کلمات کلیدی:

Akbari-Ganji's Method; Heat transfer; MoS۲ - SiO۲ hybrid nanofluid; Porous channel.

لینک ثابت مقاله در پایگاه سیویلیکا: