

عنوان مقاله:

Mixed convection heat transfer of nanofluids about a sphere in porous media

محل انتشار:

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خلاصه مقاله:

The mixed convection heat transfer of nanofluids about a sphere embedded in a porous medium saturated with a nanofluid is analyzed theoretically. Using a similarity approach, partial differential equations are reduced to a set of coupled ordinary differential equations and solved numerically. As a case study, the water base nanofluids with two types of nanoparticles, Ag and CuO nanoparticles, are analyzed. The effect of different volume fraction of nanoparticles on the heat transfer from a sphere is studied. Results indicate that utilizing nanoparticles in the base fluid can enhance the convective heat transfer in some case, and also it can deteriorate in some cases. Therefore, the volume fraction and type of nanoparticles is critical in enhancement of convective heat transfer of nanofluids.

کلمات کلیدی:

mixed convection, sphere, porous media, nanofluid, darcy model

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