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عنوان مقاله:

Evaluation of the heat transfer rate increases in retention pools nuclear waste

محل انتشار:

کنفرانس ملی بهینه سازی مصرف انرژی در علوم و مهندسی (سال: 1393)

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خلاصه مقاله:

In this paper tried to find solution for quick transfer of atomic dump (nuclear wastes)from pools of cool water to dry stores in order to reduce the environmental and financial expenses of burying atomic waste considerably. So the velocity of heat transfer should be increased from atomic waste materials to area out of container . Therefore in Bottom of the pool, we can Embedded space which conical fins (vertically) applied within it and inside ofthe space such fins are in porous medium and natural convection flow of liquid Newtonian nanofluid passing upon it . In this research we study about velocity of heat transfer by using such special space . In this research, free convection boundary layer flow on a vertical cone in a porous medium for Newtonian nanofluid with Analytical solutions have been studied.Similarity solution for cone subjected to Consideration boundary conditions a nonlinear ordinary differential equation which the obtained nonlinear ODE has been solved through homotopy analysis method (HAM). The obtained analytical solution in comparison with the numerical ones represents a remarkable accuracy. The results also indicate that HAM canprovide us with a convenient way to control and adjust the convergence region. By the way we also calculate Nusselt number that is an important parameter in heat transfer by obtained analytical solution by HAM

کلمات کلیدی:

Nuclear wastes, Newtonian nanofluid, Similarity solution

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