

Unsteady Reactive Hydromagnetic Fluid Flow of a Two-Step Exothermic Chemical Reaction through a Channel

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Abstract : In this paper, we investigated the effects of unsteady internal heat generation of a two-step exothermic reactive hydromagnetic fluid flow under different chemical kinetics namely: Sensitized, Arrhenius and Bimolecular kinetics through an isothermal wall temperature channel. The resultant modeled nonlinear partial differential equations were simplified and solved using a combined Laplace-Differential Transform Method (LDTM). The solutions obtained were discussed and presented graphically to show the salient features of the fluid flow and heat transfer characteristics.

Keywords : unsteady, reactive, hydromagnetic, couette ow, exothermi creactio

Conference Title : ICTCME 2015 : International Conference on Textile Composites, Materials and Engineering

Conference Location : New York, United States

Conference Dates : June 04-05, 2015