

Entropy Generation of Unsteady Reactive Hydromagnetic Generalized Couette Fluid Flow of a Two-Step Exothermic Chemical Reaction Through a Channel

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Abstract : In this study, analysis of the entropy generation of an unsteady reactive hydromagnetic generalized couette fluid flow of a two-step exothermic chemical reaction through a channel with isothermal wall temperature under the influence of different chemical kinetics namely: Sensitized, Arrhenius and Bimolecular kinetics was investigated. The modelled nonlinear dimensionless equations governing the fluid flow were simplified and solved using the combined Laplace Differential Transform Method (LDTM). The effects of fluid parameters associated with the problem on the fluid temperature, entropy generation rate and Bejan number were discussed and presented through graphs.

Keywords : couette, entropy, exothermic, unsteady

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