

SECOND LAW ANALYSIS OF A REACTIVE MHD COUPLE STRESS FLUID THROUGH POROUS MEDIUM

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ABSTRACT

In this work, effect of magnetic field on the entropy generation rate of a reactive couple stress fluid through porous medium is investigated. The equations governing the fluid flow are formulated, non-dimensionalised and solved using the rapidly convergent semi-analytical Adomian decomposition method (ADM). The obtained velocity and temperature profiles are utilised to compute the entropy generation rate, irreversibility ratio and Bejan number. The effects of pertinent flow parameters on velocity, temperature, entropy generation rate and Bejan number are analyzed graphically.

Keywords: Magnetohydrodynamic, ADM, Entropy generation, Porous medium, Couple stress fluid

Mathematics Subject Classification: 76D05, 34L30, 65L10

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