



**INHERENT IRREVERSIBILITY IN A REACTIVE
HYDROMAGNETIC INTERNAL HEAT
GENERATING FLUID FLOW
THROUGH A CHANNEL**

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Abstract

This paper investigates effects of internal heat generation on the reactive flow of an electrically conducting fluid through a channel with isothermal wall temperature. Analytical solutions of the nonlinear dimensionless equations governing the fluid flow are obtained using perturbation method and the non existence of global solution for some value of the Frank-Kamenetskii parameter is achieved using Adomian Decomposition Methods (ADM). Physical aspect of the important flow parameter are presented and discussed.

Keywords and phrases: inherent irreversibility, channel flow, hydromagnetic, Arrhenius kinetics, internal heat generating.

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