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MASS TRANSFER WITH CHEMICAL REACTION EFFECTS ON MHD FREE CONVECTIVE FLOW PAST AN ACCELERATED VERTICAL PLATE EMBEDDED IN A POROUS MEDIUM

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ABSTRACT

This paper presents an analytical study of MHD heat and mass transfer flow by natural convection through an accelerated infinite vertical plate embedded in a porous medium in the presence of chemical reaction. The plate accelerates in its own plane. The governing equations of motion are solved in closed form by the Laplace-transform technique. The flow phenomenon has been characterized with the help of flow parameters such as porosity parameter, Schmidt number (Sc) and Prandtl number (Pr). The effects of various flow parameters have been studied and results are presented graphically and discussed qualitatively. The problem assumes greater importance in several geo-physicals and astrophysical studies hence the analysis.

KEYWORDS: Chemical Reaction, Heat and Mass Transfer, MHD, Natural Convection, Porous Medium