

Casson Model of MHD Flow of SA-Based Hybrid Nanofluid Using Caputo Time-Fractional Models

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ABSTRACT

In this paper MHD flow of Casson hybrid nanofluids are investigated with Caputo time-fractional derivative. Alumina (*Al*) and copper (*Cu*) are used as nanoparticles in this study with heat, mass transfer and MHD flow over a vertical channel in a porous medium. The problem is modeled using Caputo fractional derivatives and thermophysical properties of hybrid nanoparticles. The influence of concerned parameters is investigated physically and graphically on the heat, concentration and flow. The effect of volume fraction on thermal conductivity of hybrid nanofluids is observed.

Keywords: Hybrid nanoparticles, Casson nanofluid, Sodium Alginate, Caputo time fractional model