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MHD Flow of Casson Fluid with SA- Based Hybrid Nanofluid using Fractional Derivatives

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An emerging concept of hybrid nanofluids (novel nanofluids) with improved thermophysical properties is investigated in this work. Hybrid nanofluid is an improved concept; implemented for the enhancement of heat transfer rate, an improved level of the nanofluids. Alumina-SA and Cu-SA are used to study the heat, mass transfer and MHD flow over a vertical channel in a porous medium. A comparison in this work revealed that heat transfer rate of hybrid nanofluids is higher than that of nanofluids (Alumina-SA) under the same conditions. 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. Heat transfer has been evaluated numerically for the present work.