

# Rivlin-Ericksen Fluid in Tube of Varying Cross-section with Mass and Heat Transfer

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In this paper, the problem of heat and mass transfer due to the steady motion of a Rivlin-Ericksen fluid in tubes of varying cross-section is considered. Suction at tube walls is taken into account. Under the assumption that the deformations of the boundaries are small, the equations of motion have been solved by using a perturbation technique. The temperature and concentration distributions are obtained. The effects of various physical parameters are discussed. The Nusselt and Sherwood numbers are obtained. A set of figures for a quantitative illustration is presented.

*Key words:* Non-Newtonian Fluids; Heat Transfer; Mass Transfer.