

We investigate the MHD flow and heat transfer of an electrically conducting fluid over a stretching sheet with variable thickness. The wall temperature and the wall velocity are assumed to vary. The effects of external magnetic field along the sheet and the Hall currents are considered. The governing equations are solved numerically using an implicit finite difference scheme. The obtained numerical results are compared with the available results in the literature for some special cases and the results are found to be in very good agreement. The effects of the physical parameters on the velocity and temperature fields are presented graphically and analyzed. The effect of the Hall current gives rise to a cross flow. Moreover, the Hall current and the magnetic field have strong effect on the flow and heat transfer characteristics, i.e., shear stress and the Nusselt number.