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Entropy analysis in MHD nanofluid flow near a convectively heated stretching surface
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Abstract
A comprehensive study of entropy generation in hydromagnetic boundary layer flow of nanofluid over a convectively heated stretching surface is conducted in the presence of viscous and joule dissipation. The Buongiorno model is employed to represent the nanofluid where the thermophoresis and Brownian motion effects are of prime focus. The partial differential equations governing the transport phenomena are converted to non-linear ordinary differential equations using suitable similarity transformations. These transformed equations are then solved analytically with the help of optimal homotopy analysis method (OHAM). Comparison of the obtained results is made with the previous studies under certain limiting cases. The main emphasis is kept on examining the effects of pertinent parameters involved in the problem on entropy production. Detail parametric study is carried out and the results are represented through graphs and tables. Copyright © 2016 Inderscience Enterprises Ltd.

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