Entropy generation in unsteady magneto-micropolar nanofluid flow with thermal radiation and viscous dissipation

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Abstract

We investigate entropy generation in magneto-micropolar nanofluid flow, particle deposition and thermal radiation effects on boundary layer flow over a stretching sheet with heat generation and a chemical reaction. A novel feature of this study is the investigation of entropy generation in a combined micropolar nanofluid and the use of the recently developed bivariate spectral quasiliearization method to solve the conservation equations. It is found that the method converges fast and accurate results can be achieved with this new method. The results show that entropy generation increases with an increase in the Reynolds and Brinkman number.

Key words: Micropolar, Nanofluids; Entropy generation; Thermal radiation; viscous dissipation