Contents

Foreword ---- VII

P. G. Siddheshwar, B. N. Shivakumar

Analytical study of Küppers-Lortz instability in a Newtonian-Boussinesq liquid with rigid-isothermal boundaries —— 1

B. Mahanthesh

Quadratic radiation and quadratic Boussinesq approximation on hybrid nanoliquid flow —— 13

F. Mebarek-Oudina, A. Aissa

Convective heat transfer of magneto flow of Fe_3O_4 -MWCNT/ H_2O hybrid nanofluid in a porous space between two concentric cylinders —— 55

Taseer Muhammad, Hassan Waqas, B. Mahanthesh
Computational analysis of bioconvection in magnetized flow of thixotropic nanofluid with gyrotactic microorganisms —— 75

Md Faisal Md Basir, S.A. Shehzad, A. Rauf
On the features of Stefan blowing magnetized flow of bioconvected nanofluid through slip conditions —— 103

Mahesha Narayana, P. G. Siddheshwar, S. B. Ashoka

Computer-assisted successive linearization solution of the Darcy-ForchheimerBrinkman flow through a rectangular channel —— 121

V. Ramachandramurthy, D. Uma, N. Kavitha

Linear and non-linear instability analysis of the onset of magnetoconvection in

couple-stress fluids with thermorheological effect —— 143

J. Meghana, S. Pranesh

Two-component convection in micropolar fluid under time-dependent boundary concentration —— 163

Swaraj D. Lewis, Purushothama Chippar

A numerical study of metal hydride reactor embedded with helical coil heat exchanger —— 201



B. Mahanthesh, T. V. Joseph, K. Thriveni

Dynamics of non-Newtonian nanoliquid with quadratic thermal convection —— 223

List of contributors — 249