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Editorial

In recent times we observe the reintegration of sciences. We have become more interdependent than independent. The 30th issue of *Mapana – Journal of Sciences* clearly depicts the integration and interdependency of sciences. In this issue we have five research articles which make us feel the connectivity between mathematics, physics and engineering.

The first article by Halle Dattu and Malai Subbiah throws light on the importance of estimations of the growth rate of variable density in inviscid incompressible swirling flow between two infinite concentric cylinders. The second article by Jayalakshmamma et al. explains the effect of transverse magnetic field on the steady flow of an electrically conducting, viscous and incompressible fluid flow through / past a solid core surrounded by cylindrical porous medium. The modified Brinkman and Stokes equations are used to describe the fluid flow in porous and non-porous regions respectively. The article by Nalinakshi et al. explains the importance of shooting method in solving the non-linear partial differential equations arising in fluid mechanics by considering the mixed convective flow with internal heat source in a sparsely packed porous medium. Pranesh et al. in their paper presents the mathematical formulation of the dispersion of solute in a laminar flow in a sparsely packed porous medium. The effect of interphase mass transfer on dispersion is examined using the generalized dispersion model of Sankarasubramanian and Gill. In the last article the effects of variable viscosity on the onset of penetrative convection simulated via internal heating in a fluid layer is studied by Gangadharaiah using regular perturbation method.

We thank all the authors and reviewers for their cooperation and support in bringing out this issue of *Mapana – Journal of Sciences*. We look forward to receive your feedback on these articles.

S Pranesh
Issue Editor