Mixed Convective Ferrofluid Flow Through a Corrugated Channel with Wall-Mounted Porous Blocks Under an Alternating Magnetic Field

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Highlights

- Mixed convective two-phase flow of water-based magnetite (Fe3O4) ferrofluid through a sinusoidally-corrugated channel.
- Two porous blocks mounted on heated sections of channel walls.
- Non-uniform alternating magnetic field generated by two current-carrying wires placed outside of channel.
- Numerical solution is obtained using the mixed finite element method.
- Heat transfer and pressure drop affected by Eckert, Darcy, Grashof and Reynolds numbers; wall amplitude; porous block thickness.