Numerical simulation of natural convection heat transfer in a trapezoidal enclosure filled with nanoparticles

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Highlights

- Convective heat transfer in nanofluid is investigated in a trapezoidal enclosure.
- Strong buoyancy force helps the solutions to reach in steady state faster.
- Blade shape nanoparticle provides higher rate of heat transfer.
- Aspect ratio and volume fraction intensifies the heat transfer rate.
- Critical aspect ratio for higher heat transfer rate depends on the Rayleigh number.
- Cobalt-Engine oil nanofluid gives higher average Nusselt number.