

Onset of Soret-Driven Convection in Nanofluids Heated from Above

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The onset of Soret-driven convection in an initially quiescent, horizontal nanofluids heated from above is analyzed theoretically. In the thermally-stably stratified fluid layer the Soret diffusion can induce the buoyancy-driven motion for the case of the negative separation ratio. For the high solutal Rayleigh number the convective motion sets in during the transient diffusion period. Here the stability criteria obtained theoretically and compared with the existing experimental data.