# CONCLUSIONS

The inclusion of the effect the temperature variation on the thermal conductivity of the interfacial layer for different sizes of nanoparticles in the modified models are proved to be necessary for the accurate prediction of volume-fraction and temperature-dependent thermal conductivity of nanofluids.

The modified dynamic model makes good predictions for volume-fraction and temperature-dependent thermal conductivity of nanofluids than others model for non-flowing fluid. However, the modified dynamic model over-predicts the thermal conductivity of nanofluids in the case of flowing fluid for the turbulent convective heat transfer in nanofluid along a uniformly heated tube which prove the dispersion effect by Brownian motion could be neglected.

The present model including effect of the temperature dependent interfacial layer makes good predictions for volume-fraction and temperature-dependent thermal conductivity of nanofluids for various nanoparticle sizes. Also, the present model makes predictions close to the modified dynamic model and credible predicttions of the thermal conductivity of nanofluids in the case of flowing fluid along a uniformly heated tube where the modified dynamic model overestimates the thermal conductivity. It can be concluded that the present model is more general than other models for both the non-flowing fluid and the flowing fluid

Furthermore, the convective transport in nanofluids can be given by the homogeneous approach because the convective heat transfers of nanofluids mostly dependents on the properties of the nanofluid. However, it is very important that the thermal conductivity models have to include both volume-fraction and temperature-dependence. The present thermal conductivity model including the effect of the temperature-dependent interfacial layer covers both of these effects