عنوان مقاله:

Molecular dynamics simulation of the shear viscosity of paraffin based nanofluids containing modified graphene oxide

محل انتشار:

دومین کنفرانس بین المللی یافته های نوین پژوهشی در شیمی و مهندسی شیمی (سال: 1395)

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خلاصه مقاله:

The shear viscosity of nanofluids is sensitive to different factors such as shear rate, concentration and temperature. In this study, the dependence of the viscosity of paraffin based nanofluids containing modified graphene oxide to these factors is investigated using nonequilibrium molecular dynamics simulations. Shear viscosity is predicted for nanofluids with nanosheet concentration up to 3 wt% at different shear rates and temperatures. Results show that the viscosity of the nanofluids depends strongly on particle concentration and temperature. Larger viscosity is obtained for the nanofluids with higher concentration, and lower temperature, which is consistent with the experimental observations. Based on the results, it is found that nanofluids behave as non-newtonian fluids at low shear rates while at higher shear rates, they show the characteristics of a Newtonian fluid.

کلمات کلیدی:

Molecular dynamics simulation, Nanofluid, Viscosity, Graphene oxide