Improvement of Nanofluid stability using 4-Step UV-Vis Spectral Absorbency Analysis

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ABSTRACT

The most challenging matters for the utilization of nanofluid into a certain system is its stability. The nanofluid with undesirable stability will damage the system due to fouling, and settlement from the base fluid. In addition, unstable nanofluid will have a lower thermal performance enhancement. An improved method, 4-Step UV-Vis spectral absorbency analysis has been suggested to improve the stability of the nanofluid. SiO_2 nanoparticles were dispersed in the PAG lubricant by using the two-step preparation method. The stabilization methods of the SiO_2/PAG were done by using the suggested method. The result indicates that all nanofluid shows good stability in stationary position even after 30 days. The absorbance of every three concentration decreased compared to their respective initial absorbance, but maintained for specific value at over 70 % compared to the initial absorbance even after 30 days.

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