

The effect of SiO₂ NPs addition on lubrication properties of 10W-40 engine oil

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Abstract:

Proper lubrication of mechanical parts in the car engines shall minimize the wear of friction pair and thus to ensure long lifetime. Another goal of the lubrication is to decrease coefficient of friction and thereby reduce energy losses. Many publications are devoted to nanoparticle addition into simple oil (e.g. paraffin) but there is only limited attention to more complex lubricants as synthetic oils. In addition, there is paid very little attention to the stability of resulting suspensions. Present paper deals with the effect of different ways of SiO₂ NPs addition into the advanced synthetic oil on the wear ratio of friction pair using ball-on-disc tribological test.

Key words:

Tribology, SiO₂, wear, oil additives