

ABSTRACT

THE ANALYSIS OF MOTORBIKE ENGINE LUBRICANT REDUCED QUALITY BASED ON VISCOSITY VALUE, COLOR AND IMPURITIES

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An analysis on reduced quality of motorbike engine lubricant has been conducted. This research used two Vixon 4-cycles engine motorbikes produced in 2008 and 2013, with Yamalube SAE 10W-40 as motor engine lubricant. The parameters are analyzed viscosity value using Stormer method (by observing fluid flow in a burette and using Poseuille equation), color analysis used grayscale histogram with Delphi image processing, and impurity analysis use centrifugation. Measurement of each parameter was conducted each time motorbike mileage increased. In this tested burette, the results were error percentage of 0.52% and accuracy percentage of 99.48%. The research results showed that the more increasing of motorbike mileage, the value of viscosity is decreased. The color analysis obtained ratio of the average value of grayscale histogram and ratio of the average value of grayscale lubricants decreased while motorbike mileage increasing. The impurity analysis showed no results that indicate a change signifikan, because impurity materials were homogenous enough so that they cannot be visually observed.

Keywords: *Centrifugation, grayscale, Stormer method, viscosity.*