Analysis of Wear Particles Morphology of Machine Parts Based on Aluminium

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Failures of machines are caused by variety of external and internal effects and process that cause ultimately interruption of operation. These factors have resulted in changes of properties of machines parts and these changes are the first causes of technical failures. Wear is one of the major factors that contribute to the creation of failures and with this is connected generation of wear particles. Wear particles come into oil in lubrication system, where they cause contamination and degradation of lubricating properties and consequently it may result in major failure of machines. Among these contaminants are included mainly adhesive, abrasive and fatigue particles wear. The paper describes number and morphology of wear particles generated during modified Reichert test (friction pair – steel and aluminium alloy) analysed by LasetNet Fines device. Experiment also compared capability of lubrication of four different engine oils exposed to various weight load.

Keywords: Wear particles, Reichert test, Particle morphology

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