

UNIVERSITI TEKNOLOGI MARA

**EFFECT OF MOISTURE
CONTAMINATION IN ENGINE OIL
LUBRICANT ON MERCURY
OUTBOARD ENGINE
PERFORMANCE**

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ABSTRACT

Water or other liquid diffused in a small quantity as vapour, within a solid, or condensed on a surface. Water contamination in oil can be categorized into three forms of water; dissolved, emulsified, and free moisture each of which influences the properties of lubricating oils. Water or moisture content of four-stroke engine lubricant oil in outboard boat cause damage to metal or component which caused corrosion wear, particularly in component likes bearing. The project focussed the comparative study of moisture content between new and used oil of lubricant oil in Mercury outboard engine. This project aims to determine the moisture content of the four-stroke lubricant oil in outboards engines and also compare moisture content between new and used four-stroke lubricant oil in outboard engines. The method used in this study is a Fourier-Transform Infrared (FTIR) analysis. The result from the FTIR Bruker Tensor 27 spectrometer detected moisture content by specific wavenumber. The different of both result determined by presence of the water content with new oil line as baseline. The FTIR analysis was shows wavenumber, the suggestion machine to use is Moisture analyser to show the percentage of moisture in lubricant oil.

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