

# Classification of Lubricant Oil Odor-Profile Using Case-Based Reasoning

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***Abstract***—Lubricant oil is one of the most important elements needed for every car engine in order to reduce the friction between moving parts in a car engine, reduce engine temperature and preventing the entry of contaminant. People have difficulties in identifying the degradation level of lubricant oil. Because of that, fake or recycled lubricant oil appear in the market. E-nose was used to overcome the difficulty by classifying the odor profile pattern of lubricant oil sample. The patterns were classified using case-based reasoning technique. The classification result shows that CBR gives 100% classification performance. This paper presents the study of lubricant oil classification based on odor-profile using Case\_based Reasoning (CBR) classifier.

***Keywords***—Lubricant oil; e-nose; case-based reasoning; odor profile.