

## Investigation on the dielectric, physical and chemical properties of palm oil and coconut oil under open thermal ageing condition

### ABSTRACT

In this paper, a study is carried out to investigate the dielectric, physical and chemical properties of Palm Oil (PO) and Coconut Oil (CO) under open thermal ageing condition. The type of PO used in this study is Refined Bleached and Deodorized Palm Oil (RBDPO) Olein. The ageing experiment was carried out at 85 °C and 115 °C for 1, 3, 5, 7 and 14 days. Several parameters were measured such as AC breakdown voltage, dielectric dissipation factor, relative permittivity, resistivity, viscosity, moisture and acidity throughout the ageing duration. Based on the study, it is found that there are no significant changes on the AC breakdown voltages and relative permittivities for both RBDPO and CO. At ageing temperature of 115°C, there are clear reduction trends of dielectric dissipation factor for CO and resistivities for most of RBDPO. On the other hand, no clear trends are observed for viscosities, moisture and acidities of RBDPO and CO throughout the ageing duration.

**Keyword:** Refined Bleach Deodorized Palm Oil; Coconut oil; Open thermal ageing; Transformers