

Fakulti: <b>FAKULTI KEJURUTERAAN ELEKTRIK</b>	
Nama Matapelajaran: Makmal Tahun 4	Semakan : 1
Kod Matapelajaran : SEE 4722	Tarikh Keluaran : 2009
	Pindaan Terakhir : 2009
	No. Prosedur : <b>PK-UTM-FKE-(0)-10</b>



**SEE 4722**

**FAKULTI KEJURUTERAAN ELEKTRIK  
UNIVERSITI TEKNOLOGI MALAYSIA  
KAMPUS SKUDAI  
JOHOR**

**INSTITUT VOLTAN DAN ARUS TINGGI (IVAT)  
STUDENT PACK (Experiment 12)**

**Characteristics of Natural Palm Oil as High Voltage Insulating Material**

Disediakan oleh : Prof. Madya Dr. Mohd. Nama	Disahkan oleh : Ketua Jabatan
: Muhridza Bin Yaacob	Nama :
Tandatangan :	Tandatangan :
Cop :	Cop :
Tarikh : April 2009	Tarikh :

## 1. LIST OF EQUIPMENT AVAILABLE

### a) High Voltage Construction Kits

- ✚ High voltage transformer
- ✚ Measuring capacitor
- ✚ Connectors and Accessories
- ✚ Measuring system

### b) Natural Palm Oil and Mineral Oil

### c) AC Bridge

### d) Capacitance and dissipation / power factor test set and high voltage supply and control.

## 2. PROBLEM-SOLVING TIME-LINE

Activities	Week 1	Week 2	Week 3	Week 4
1) Understanding/Identify/Brainstorming				
2) Design of Experimental Procedures				
3) Experimental Set-up and Testing				
4) Measurements/Data Analysis				
5) Presentation/Report Writing				

### 3. REPORT WRITING

- a) Other than the general guide specified by the Laboratory Coordinator, your report for this laboratory must also include;
- Results all the tests.
  - Photographs of the system set-up.
  - Photographs of your group members during hands-on session.
  - The group shall submit a write-up on the topic of *The Potentials of Palm Oils as a Dielectric Fluid* (2 pages) to the facilitator on the **second week** of the laboratory.
  - In the report, you have to compare the characteristic and electrical parameters between natural palm oil and mineral oil.

### 4. REFERENCES

- i) M.S. Naidu and V. Kamaraju (2004). *High Voltage Engineering*. Mc. Graw Hill.
- ii) Suwarno , Aditama (2005). Dielectric Properties of Palm Oils as Liquid Insulating Materials: Effect of Fat Content. *Proceeding of 2005 International Symposium of Electrical Insulating Materials*. 5-9 June . Kitakyushu Japan, 91-94.
- iii) Suwarno, F.Sitinjak, Ichwan Suhariadi, Luthfi Imsak (2003). Study on the Characteristic of Palm Oil and it's Derivatives as Liquid Insulating Materials. *Proceeding of the 7<sup>th</sup> Application of Dielectric Materials*. 1-5 June. Nagoya, 495-498.
- iv) U.U Abdullah, S M Bashi.(2004). The Potentials of Palm Oils as a Dielectric Fluid. *National Power & Energy Conference (PECon) 2004 Proceeding* .Kuala Lumpur.pp 224-228.