

## Bio-Based Transformer Oil From Plant Oils



- Aims to promote a newly developed bio-based transformer oil
- The esters are produced from vegetable oils (particularly palm oil) using our low pressure transesterification technology (PI 20030943)
- These esters are meant to be the substitutes of petroleum-based transformer oil since they are derived from renewable feedstocks, biodegradable and exhibit low eco-toxicity
- **Potential benefits:**
  - As alternatives to the petroleum-based transformer oil
  - Derived from renewable feedstocks
  - Eco friendly: biodegradable and low in ecotoxicity
  - Can be formulated with additives to enhance performance
  - High viscosity index (for a broad operating temperature range)
  - Wide viscosity range (achieved by altering the carbon length of fatty acids involved)
  - High flash point (range between 170°C to 320°C)

### ACHIEVEMENT

- Completed Innohub UPM workshop
- Practice pitching (elevator pitch & 10 mins pitch)

### CURRENT STATUS

- We are pivoting from **ester drilling fluid** to **transformer oil**
  - Based on our problem interviews especially with Petronas, we found that there is no immediate or intermediate term demand for ester drilling fluid, moreover the product cost is on the high side
- As for transformer oil, we are **still in idea and developing stage**.
- First problem interview will be started on **23<sup>rd</sup> of June 2016** with **TNB Research QATS Sdn. Bhd.**
- To interview 20 power & utilities companies (end users) such as **TNB, Petronas, ABB, Malakof, Sabah Electricity, Sarawak Energy, YTL**, etc.
- To interview 5 companies of **transformer manufacturers**

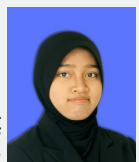
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