## **Facilities**

- ✤ Supercritical Fluid Extraction
- ✤ Subcritical Water Extraction
- Liquid Membrane Separation Unit
- ✤ 50 L Pilot Plant Distillation Unit
- Sterilizers and Distillation Unit
- High Performance Extraction System
- High Voltage Demulsifier Unit
- ✤ UV-VIS Spectrophotometer
- Freeze Dryer
- Furnace







V-730



# CENTRE OF LIPID ENGINEERING AND APPLIED RESEARCH (CLEAR)

Ibnu Sina Institute for Scientific & Industrial Research



## For More information, please contact us at:

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#### Introduction

Center if Lipids Engineering and Applied Research (CLEAR) were established since the late 1987 to undertake research in process engineering and technology of palm oil and oleo chemical processes. Our research was classified into three areas; process development, product development, and infrastructural development. Apart from process engineering aspects, biomass and biomaterial product development were also emphasized in our research and development.

Our vital goal is to become a leader in the lipid and advanced separation engineering research area through innovation and commercialization concomitant with national and regional aspiration. We are planning our strategy to play a more dynamic role in research, development and commercialization activities at the international level.

Currently, CLEAR is operating efficiently with 7 active academic staff with total equipment (pilot plant , analysis and chemical process) worth RM 8 million and total research grant of about RM 10 millions throughout 2011-2017. In 2012, we had received a Gold Medal in Malaysia Green Tech Awards 2012 for the outstanding role in the establishment of research and development in green technology.

### **Research Area**

- Oleo chemical and Lipid Engineering
- Advanced Separation Process
- o Green Extraction Technology
- o Biomaterial and Biomass

## **Our Service & Product**

- o Activated carbon adsorption training and consultation
- Supercritical Fluid Extraction Technology lab scale Pilot scale
- Separation process for waste treatment
- Fast and efficient liquid membrane for metal recovery

## DIRECTOR



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