

UNIPEM

- Transition Temperature
- Oxidative- Induction Time
- Sulfur in Petroleum Petroleum Products (General Bomb Method)
- Chlorine in New and Used Petroleum Products (Bomb Method)
- Sediment in Crude Oil and Fuel Oils by The Extraction Method



UNIPEM

- Ash Content
- Ash (Sulfated)
- Carbon Residue (Conradson Method)
- Carbon Residue (MCRT Method)
- Cetane Index (by Calculation)
- Cloud Point (Transparent Liquid)
- Density, Specific Gravity, API Gravity
- Flash Point (Abel Close Cup)
- Flash Point (Cleveland Open Cup)
- Flash Point (Pensky-Martens Close Cup)
- Kinematic Viscosity 40°C
- Kinematic Viscosity 100°C
- Pour Point
- Viscosity index (by Calculation)
- Volatility Characteristics (Distillation)
- Water Content (Distillation Method)
- Dynamic Viscosity/Rheological Properties
- Wax Appearance Temperature
- Enthalpies of Fusion and Crystallization

Workshop

- Lathe Machine
- Arc Welding



FACILITIES

- HPLC - Agilent 1260 Infinity (RI, Fluorescent, DAD)
- Waters
- GC (FID) - 2 units Perkin Elmer
- Shimadzu
- GCMS - Agilent 6890N
Agilent 7890
- FTIR - Perkin Elmer
- Shimadzu IRTracer 100
- UV- Vis - Shimadzu
- Perkin Elmer
- DSC - Perkin Elmer DSC 7
- Perkin Elmer DSC 8500
- MP-AES - Agilent 4200
- TGA - Perkin Elmer TGA4000



ANALYTICAL LABORATORY

Provides chemical testing and analysis for academic and research purposes.

FCEE in-house analytical laboratories provide analytical and/or testing services for projects ranging from advanced R&D to routine quality tests, as well as chemical analysis. We offer a wide variety of services for analytical chemistry testing.

Our laboratory is equipped with high end analytical instruments and run by our utmost dedicated staff. We promise to provide you with accurate solutions tailor-made to your particular needs.



SERVICES PROVIDED

- Thermal Analysis - Differential Scanning Calorimetry (DSC)
- Thermogravimetric Analysis (TGA)
- Spectroscopy - Fourier Transform Infrared (FTIR)
- Ultraviolet-Visible Spectroscopy (UV-Vis)
- Mass Spectrometry - Gas Chromatography Mass Spectrometry (GCMS)
- Chromatography - Gas Chromatography (GC)
- High Performance Liquid Chromatography (HPLC)
- Gel Permeation Chromatography (GPC)
- Trace Metal Analysis - Microwave Plasma Atomic Emission Spectroscopy (MP-AES)



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FCEE
LAB SERVICES
& FACILITIES
Pioneering Technologies of the Future



» FCEE Lab Services & Facilities

The UTM Faculty of Chemical and Energy Engineering (FCEE) has been one of the leading engineering schools in Asia. UTM FCEE features some world class chemical engineering, petroleum engineering and energy engineering teaching and learning, as well as R & D programmes that are supported by state-of-the-art teaching and learning facilities.

FCEE offers a wide variety of services for clients to perform various analytical testings ranging from simple tests on chemicals, biomaterials, polymer, gas and petroleum based chemicals to advanced tests for R&D projects. These services are provided by our Analytical Lab and our ISO 17025 accredited UNIPEM Lab. Our labs are equipped with high-end analytical instruments and run by our dedicated and specially trained technical staff. Apart from the analysis labs, there are 25 other labs in FCEE that offer various modules on technical teaching and learning.

FCEE facilities include several Computer Laboratories that house up to 150 up-to-date PCs installed with a wide range of software from engineering design to simulation and optimization. Our computer labs are served with high speed internet and ample working space. Workshops, seminars and meetings can be organized in our smart class rooms, lecture halls and meeting rooms that are well-equipped with modern audio-visual packages.

For further information on our services and facilities, please visit:

www.fcee.utm.my/facilities

» Process Control Lab

- Programmable Logic Controller
- Controlled Continuous Distillation Unit
- Laboratory Fermentor -2L Bioreactor
- Flow Control Apparatus
- Liquid Level Control System
- Flow Control System
- Pressure Control System
- Temperature Control System



» Reaction Lab

- Bench Top Oven
- Vacuum Oven
- Rotary Evaporator
- Biodiesel Reactor



» Separation Processes Lab

- Climbing Film Evaporator
- Absorption Packed Column
- Distillation Bubble Cap Column
- Chemical Reactor
- Solid / Liquid Extraction Column
- Distillation Packed Column
- Continuous Distillation Unit
- Chemical Reactor
- Cooling Tower Demonstrator
- Rotary Evaporator
- Vapour – Liquid Equilibrium
- Shaker
- Spray Dryer
- Fixed And Fluidised Bed
- Crystallization Unit
- SO₂ Absorption Unit
- Heat Exchanger Pilot Plant
- Tray Dryer
- Vacuum Filter
- Double Effect Evaporator



» Environmental Lab

- UV- Visible Spectrophotometer
- Furnace
- Drinkable Water System
- COD Meter
- COD Reactor



» Polymer Lab

- Twin Screw Extruder
- Injection Molding Machine
- Blown Film Extrusion Machine
- High Speed Crusher
- Two Roll Mill
- Xenom Test Chamber
- Hot Press



» Gas Engineering Lab

- Flame Propagation & Stability
- Membrane Separation Testing Unit
- Furnace
- Corrosion Study Kit
- Automatic Iso-Peribol Calorimeter
- Single Droplet Combustion System
- High Speed Camera
- Pneumatic & Electro-Pneumatic Control Training Unit
- Instruction Training Fuel Cell System
- Gas Meter Verification



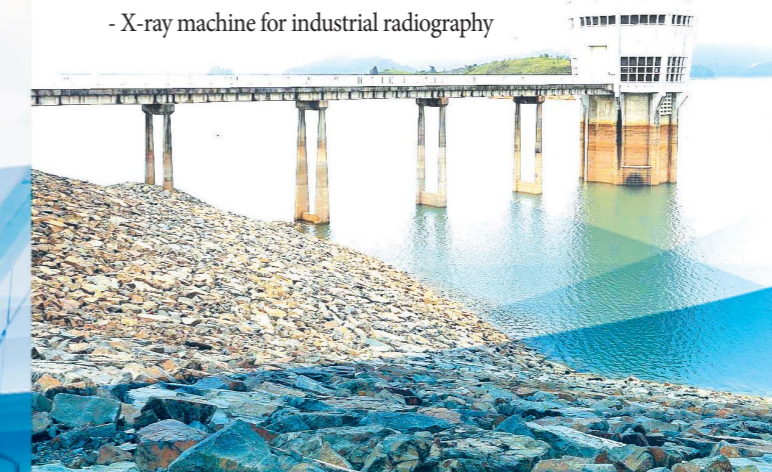
» Petroleum Engineering Lab

- Drilling Mud Testing Properties
- High Pressure High Temperature Filter Press
- Linear Swell Meter
- Heavy Duty Mixer
- Viscometer
- Roller Oven
- Spinning Drop
- Easy Dyne Tensiometer
- Kinematic Viscometer
- Rheometer Brookfield
- Stereo Microscope
- Foam Stabilizer
- Liquid and Gas Permeameter
- Liquid and Gas Porosimeter



» Nuclear Lab

- X-ray machine for industrial radiography



» Computer Labs



» Lecture Hall / Meeting rooms

