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LABORATORIES

**MASS SPECTROMETRY &
MOLECULAR SPECTROSCOPY**
uirl-masspectro@utm.my

X-RAY & THERMAL ANALYSIS
uirl-xray@utm.my

MICROSCOPY & IMAGING
uirl-microscopy@utm.my

CHEMICAL ANALYSIS
uirl-chemanalysis@utm.my

CHEMICAL MANAGEMENT CENTRE
cmcutm@utm.my

NUCLEAR MAGNETIC RESONANCE
nurnazmin@utm.my

<http://www.utm.my/upmu/>
<https://www.facebook.com/upmuutm/>

BACKGROUND

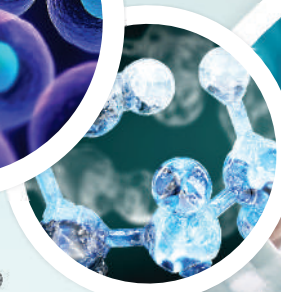
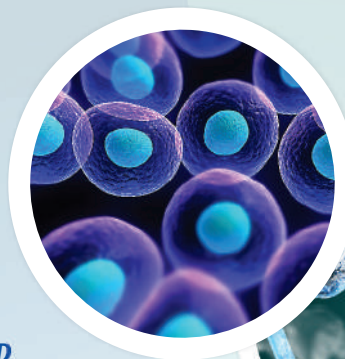
The history of University Laboratory Management Unit (UPMU) started in 2009 with the establishment of 'Unit Pengurusan Makmal' under the office of Deputy Vice-Chancellor, Research & Innovation, UTM. The function of the unit is to discuss any issues related to laboratory such as development, regulation, accreditation, competency, coordination, uniformity and collaboration.

At present, UPMU has its own central laboratory for UTM which is known as University Industry Research Laboratory (UURL).

UURL is equipped with a wide range of state-of-the-art instrumentation and technologies in six major fields :

- Mass Spectrometry & Molecular Spectroscopy
- X-Ray & Thermal Analysis
- Microscopy & Imaging
- Chemical Analysis
- NMR Laboratory
- Chemical Management Center

The instruments and technologies are available for use by students and researchers in UTM, and for other local universities and industries. All are welcome to drop by at T03, UURL Building to discuss your analysis needs with the officers.





MASS SPECTROMETRY AND MOLECULAR SPECTROSCOPY LABORATORIES

Services and Instruments available:

1. Circular Dichroism Spectrometer (CD)
2. TCSPC Fluorescence Spectrophotometer
3. High Performance Gas Chromatography Mass Spectrometry (GCMS-QP2010 Series)
4. High Performance Gas Chromatography Tandem Mass Spectrometry Of Triple Quadrupole (HP GCMS-MS -Tq8040)
5. Semi Preparative High Performance Liquid Chromatography For Small Scale Separation and Isolation (LC Prep)
6. High Performance Liquid Chromatography Tandem Mass Spectrometry Of Quadrupole Time-Of-Flight (HP LCMS-MS QTOF)
7. High Performance Liquid Chromatography Tandem Mass Spectrometry of Triple Quadrupole (HP LCMS-MS Q3)
8. Matrix Assisted Laser Desorption Ionization Time of Flight Mass Spectrometer (MALDI-TOF-TOF MS/MS)
9. Polarimeter (POL)
10. Total Organic Carbon Analyzer (TOC)
11. UV/VIS/NIR Spectrophotometer (UV-VIS NIR)
12. Nanoparticle Size Analyzer With Zeta Potential
13. Laser Particle Size Analyzer (LPSA)
14. Polarization Microscope

X-RAY & THERMAL ANALYSIS LABORATORIES

Services and Instruments available:

1. Atomic Force Microscopy (AFM)
2. X-Ray Photoelectron Spectroscopy (XPS)
3. Small Angle X-Ray Scattering (SAXS)
4. RAMAN Labram HR Evolution (RAMAN) Spectroscopy
5. RAMAN Xplora Plus (RAMAN-AFM)
6. X-Ray Diffraction (XRD)
7. Termogravimetry Analyzer with DSC (TGA)
8. Termogravimetry Analyzer Interface with FTIR (TGA-IR)

MICROSCOPY AND IMAGING LABORATORIES

Services and Instruments available:

1. Field-Emission Scanning Electron Microscope (FE-SEM)
2. Variable Pressure Scanning Electron Microscope (VP-SEM)
3. Bio logical Transmission Electron Microscope (BIO-TEM)
4. Energy Dispersive X-Ray (EDX)
5. Focused Ion Beam (FIB)
6. Scanning Transmission Electron Microscope (STEM)
7. Ultramicrotome

NMR LABORATORIES

Services and Instruments available:

1. Nuclear Magnetic Resonance Bruker 400 MHz Avance II
2. Nuclear Magnetic Resonance Bruker 400 MHz Avance III (Solid/Liquid)
3. Nuclear Magnetic Resonance Bruker 300 MHz Fourier

CHEMICAL MANAGEMENT CENTRE

Roles of CMC:

Chemical Management Centre (CMC) undertakes a central role in the comprehensive chemical management in the campus.



CHEMICAL ANALYSIS LABORATORIES

Services and Instruments available:

1. Flame and Longitudinal Zeeman Graphite Furnace Atomic Absorption Spectrometer System (AAS)
2. Advanced Electrochemistry System
3. Carbon, Hydrogen, Nitrogen, Sulphur/ Oxygen Elemental Analyzer (CHNS)
4. Gas Chromatography (GC) with Flame Ionization Detector and Electron Captured Detector
5. High Performance Liquid Chromatography (HPLC) with Photodiode Array and Fluorescence Detector
6. High Performance Liquid Chromatography (HPLC) with Photodiode Array Detector (PDA) and Fluorescence Detector
7. Inductively Couple Plasma Optical Emission Spectrometer (ICP-OES)
8. Microwave Oven Digester
9. Surface Area And Pore Analyzer
10. Temperature-Programmed Desorption, Oxidation, Reduction and Pulse Chemisorption Analyzer (TPDRO)
11. Ultra Performance Liquid Chromatography (UPLC) with Evaporative Light – Scattering Detector (ELSD)
12. Capillary Electrophoresis with Diode Array Detector (CE-DAD)
13. Capillary Electrophoresis Time of Flight Mass Spectrometer (CE-TOF/MS)
14. Gas Chromatography Mass Spectrometer (GCMS) with Headspace System
15. Inductively Coupled Plasma Mass Spectrometer (ICP-MS/MS)