

# TECHNICAL SERVICES & CONSULTANCY UMP

## UMP-Industry Synergy

To fulfill its ambition to become a world-class university, University Malaysia Pahang (UMP) has, on many occasions, collaborated with the local industries, to propagate higher technical productivity. Several industrial-related and relevant programmes, including technical services, were coordinated by the university's wholly-owned subsidiary, UMP Holdings Sdn Bhd. Listed below are the services and facilities offered by UMP to the local industries:

### SERVICES: FACULTY OF CHEMICAL & NATURAL RESOURCES ENGINEERING

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#### BIO-PROCESSING LAB - LIST OF EQUIPMENT

- Autoclave
- ELISA Reader and Washer System
- Rotary Evaporator
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#### BIO-ANALYTICAL LAB - LIST OF EQUIPMENT

- Bio-Imaging System
- Glucose Analyzer
- High Pressure Liquid Chromatography
- Protein Purification System
- Research Microscope
- UV-Vis Spectrophotometer
- Viscometer System

#### BIO-SCALE UP PROCESSING LAB - LIST OF EQUIPMENT

- Centrifugal Separator
- Cross flow filtration
- Fermenter 2L
- Fermenter 10L
- Fermenter 20L
- Fermenter 50L
- Filling Machine
- Freeze Dryer
- Moisture Analyzer
- Spray Gun/Dryer (lab scale)

#### ANALYTICAL LAB - LIST OF EQUIPMENT

- Atomic Absorption Spectrometer (AAS)
- Differential Scanning Calorimeters (DSC)
- FTIR
- Gas Chromatography (GC)
- Thermal Gravimetry Analyzer (TGA)

#### OPEN LABORATORY - LIST OF EQUIPMENT

- Chemical Blending & Mixing Plant
- Chemical Blending & Mixing Plant (High Risk)
- Grinder
- Multi Purpose Extraction
- *Plant*
- Water Extract
- Solvent Extract
- *Animal*
- Water Extract
- Solvent Extract
- Spray Dryer (Pilot Plant)
- Plant Extract + Spray Dry (water based)
- Animal Extract + Spray Dry (water based)
- Plant Extract + Freeze Dry
- Animal Extract + Freeze Dry
- Rotary Evaporator

#### LIST OF TESTING

##### TYPE OF TESTING

- Elements (HACH)
- pH
- Temperature
- Turbidity
- Calcium
- Copper
- Iron
- Magnesium
- Manganese
- Potassium
- Zinc
- Cadmium
- Lead
- Mercury
- Total Plate Count
- Total Yeast Count and Total Mould Count
- Flash Point Closed Cup Tester.
- Kinematic Viscosity
- Density
- Cloud Point
- Pour Point
- Ester Content (TLC)
- Cetane Number
- FFA Content @ Acid Value
- Catalyst
- Iodine Value
- Soap Content
- Moisture Content
- Stack Stampling

##### METHOD

- APHA - 3111B / HACH
- APHA - 4500-H B
- APHA - 2550B
- APHA - 2130B
- AOAC 975.03
- AOAC 975.03
- AOAC 975.03
- AOAC 975.03
- AOAC 975.03
- AOAC 975.03
- AOAC 975.03
- AOAC 975.03
- AOAC 999.11
- AOAC 999.12
- AOAC 999.13
- BP, USP
- BP, USP
- DIN EN 3679
- DIN EN 3104
- DIN EN 12185
- DIN EN 14103
- ISO 5165
- DIN EN 14104
- DIN EN 14111
- DIN EN 12937

