

BIOFUEL AND RENEWABLE ENERGY (BREN)

- Developing renewable, economically sustainable systems
- Converting lignobiomass to liquid fuels (bioethanol, biobutanol and biodiesel) using yeasts, clostridium sp. and microalgae
- Developing microbial fuel cell utilizing catalytic reactions of microorganisms



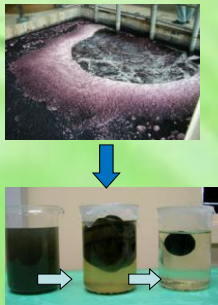
BIOCATALYSIS AND FERMENTATION (BIOFERM)

- Application of enzyme and fermentation technology in biodegradation of recalcitrant substances
- Biotransformation of agricultural wastes into beneficial products through microbial bioprocessing and enzymatic degradation



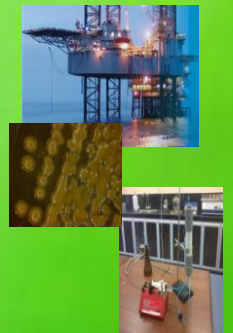
ENVIRONMENTAL BIOTENGINEERING (EB)

- Microbial degradation of recalcitrant xenobiotics
- Transformation of xenobiotic pollutants
- Real time monitoring of biological treatment process using molecular tools



PETROLEUM BIOTECHNOLOGY

- Develop an understanding of microbial behaviour for enhance oil recovery application via bacterial plugging
- Bidesulphurisation of high sulphur content crude oil (sour crude oil)



BIOSENSOR TECHNOLOGY (BIOS)

- Development of biosensors for rapid detection of Biochemical Oxygen Demand, toxic inorganic and organic pollutants and clinically important analytes
- Molecular engineering of proteins for site-directed immobilization onto solid supports for biosensing application
- Development of nano-biosensors and microarray-based biosensors

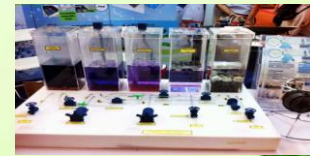


Research Achievement



MICROCLEAR SDN BHD

- A spin-off company established under UTM-MTDC symbiosis program
- Produce effective microbes for the treatment of dye contaminated wastewater
- Produce macrocomposite for the treatment of water and wastewater
- Supply biodegreaser for cleaning purposes to Felda Palm Industries (FPI) Sdn Bhd



Total Funding
secured in 2015
RM956,450.00

Q1
7

Total Number
of Published
IF Journal
19

Q2
9

Q3
3

Scopus
4

**Total
Published
impact factor
39.63**

UNIVERSITY COLLABORATORS

Universiti Malaysia Sabah (UMS)
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Universiti Putra Malaysia (UPM)
Universiti Teknologi Mara (UiTM)
Universiti Islam Antarabangsa (UIA)
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Avocet Gold
Agrowaste Sdn Bhd
Biodeinking Sdn Bhd

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