







FACULTY OF BIOTECHNOLOGY AND BIOMOLECULAR SCIENCES

UNIVERSITI PUTRA MALAYSIA

WITH KNOWLEDGE WE SERVE







HISTORY

- 1931 School of Agriculture
- 1947 Malayan Agricultural College
- 1971 Universiti Pertanian Malaysia
- 1997 Universiti Putra Malaysia
- 2006 Recognize as one of research universities in Malaysia

UNIVERSITY'S FACTS AND INFO

• Faculties : 16

• Institutes: 9

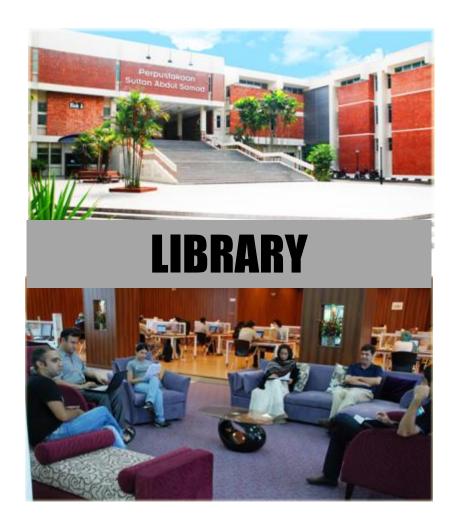
• Centre : 16

UNDERGRADUATE	TOTAL
Undergraduates	17,252
International Undergraduates	326
Undergraduate Exchange to UPM	277

POSTGRADUATE	TOTAL
Postgraduates	10,286
International Postgraduates	2,948
Postgraduates Exchange to UPM	26



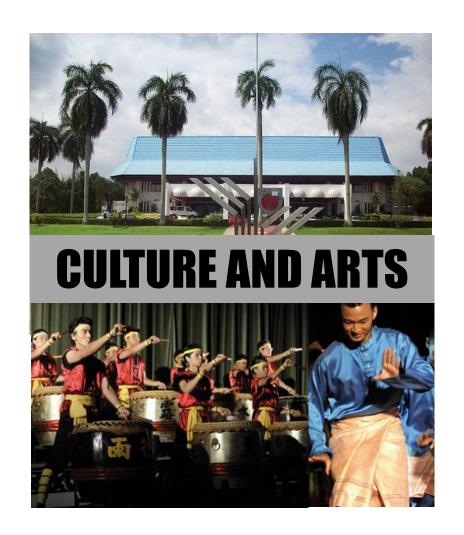
CAMPUS FACILITIES







CAMPUS FACILITIES

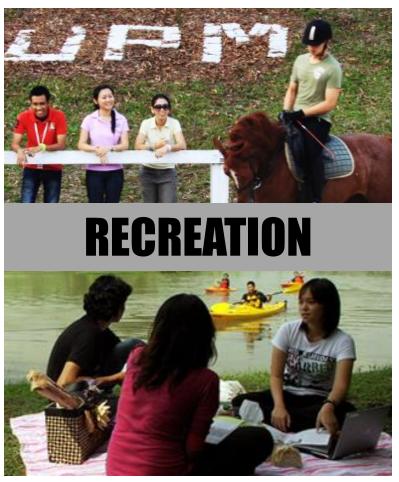






CAMPUS FACILITIES





Vision

• To become an internationally reputable Faculty in the area of biotechnology and biomolecular sciences.

Mission

• To be a leading centre of learning and research in the area of biotechnology and biomolecular sciences, contributing not only towards the creation of wealth and nation building but also towards universal human advancement and discovery of knowledge.

FACULTY OF BIOTECHNOLOGY & BIOMOLECULAR SCIENCES





Dean



Prof. Datin Paduka Dr. Khatijah Mohd Yusoff

Head of Unit



Prof. Dr. Mohd. Ali Hassan **Industry & Community**

Relation Unit

Prof. Dr. Suraini Abd. Aziz Academic and Student Affairs

Deputy Deans



Assoc. Prof. Dr. Norazizah Shafee Research and Postgraduate Studies

Head of Departments



Prof. Dato' Dr. Abu Bakar Salleh **Biochemistry**



Assoc. Prof. Dr. Rosfarizan **Mohamad**

Bioprocess Technology



Assoc. Prof. Dr. Muhajir Hamid Microbiology



Assoc. Prof. Dr. Janna Ong Abdullah Cell and Molecular Biology



Head of Research Center Prof. Dr. Raja Noor Zaliha Raja Abd Rahman Enzyme & Microbial Technology



Registrar

Head of Research Center Prof. Dr. Arbakariya Ariff Bioprocessing & Biomanufacturing





FACULTY STAFF

Academic Staff	
Professor	14
Assoc. Professor	14
Lecturer	31
Tutor	16
Total	75

Non-Academic Staff	
Administration Officer	3
Science Officer	6
Research Officer	2
Engineer	1
Supporting Staff	77
Total	89





ACADEMIC AND STUDENT AFFAIR



PROGRAMMES OFFERED Undergraduate Studies



Cell and Molecular Biology

- B. Sc. (Hons.) Cell & Molecular Biology
- 4 years



Bioprocess Technology

- B. Sc. (Hons.) Biotechnology
- 4 years



Microbiology

- B. Sc. (Hons.) Microbiology
- 4 years



Biochemistry

- B. Sc. (Hons.) Biochemistry
- 4 years



ENTRY REQUIREMENTS

Matriculation or Foundation

STPM

Diploma and **Equivalent**

B. Sc. (Hons.) Undergraduate Programmes **Biochemistry**

B. Sc. (Hons.) Biotechnology

B. Sc. (Hons.) Microbiology

B. Sc. (Hons.) Cell & Molecular Biology

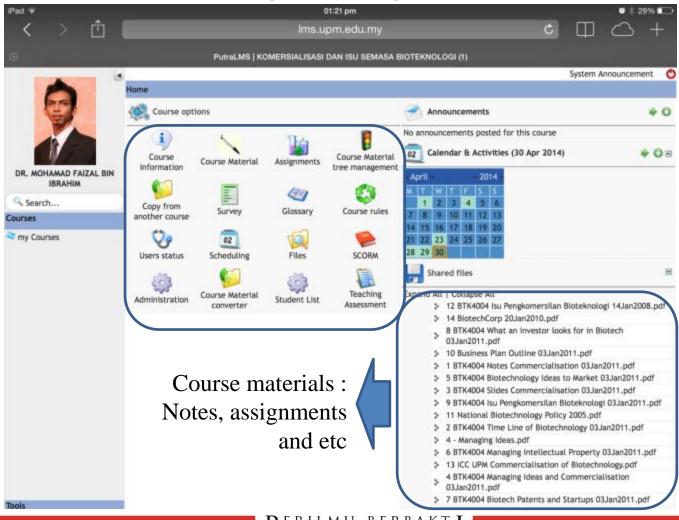






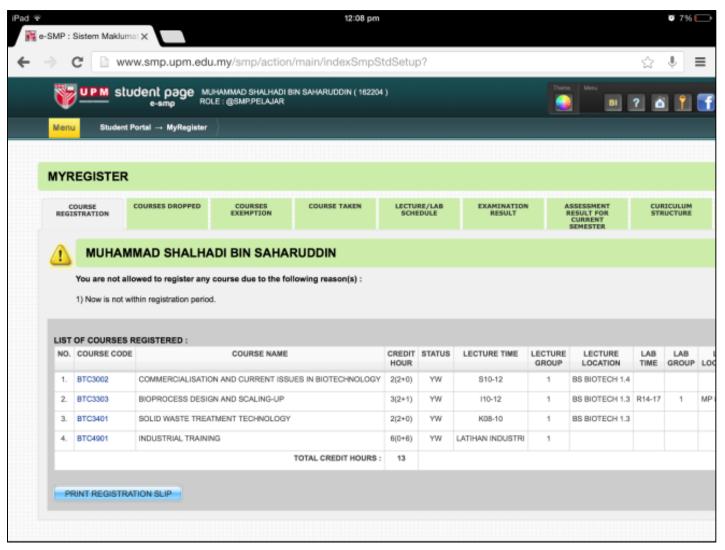


PUTRA LEARNING MANAGEMENT SYSTEM (PUTRA LMS)





STUDENT INFORMATION SYSTEM (SMP)





STUDENT CENTRED LEARNING (SCL)

SCL Approaches





Case Study

Modular Approach



Four current focus of SCL approaches (MoHE)

Problem Based Learning (PBL)

Project Oriented Problem Based Learning (PoPBL)



Student Centred Learning Universiti Putra Malaysia



TEACHING FACILITIES - CLASS











TEACHING FACILITIES - CLASS











TEACHING FACILITIES - LABORATORY











TEACHING FACILITIES - ICT









DISTRIBUTION OF INTERNATIONAL STUDENTS











RESEARCH AND POSTGRADUATE STUDIES



PROGRAMMES OFFERED Postgraduate Studies

Doctor of Philosophy (PhD)

- With Thesis
- 6-10 Semesters



Master of Science (MS)

- With Thesis
- 4-6 Semesters





FIELD OF STUDIES

Industrial **Biotechnology**

Environmental Biotechnology

Structural Biology

Biochemistry

Nanobiotechnology

Genetic **Engineering** and Molecular **Biology**

Animal Cell Biotechnology

Microbiology

Food and Enzyme Biotechnology

Bioinformatics and Biology **System**

Microbial Biotechnology

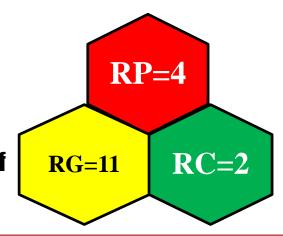
Plant Biotechnology



RESEARCH CLUSTER: BIOSYSTEM & BIOTECHNOLOGY (BB)







RP	RG
1. Animal Vaccine and Diagnostic Technology	2
2. Bioengineering and Bioprocessing	2
3. Microbial and Cellular Technology	4
4. Systems Biology and Molecular Systematics	3

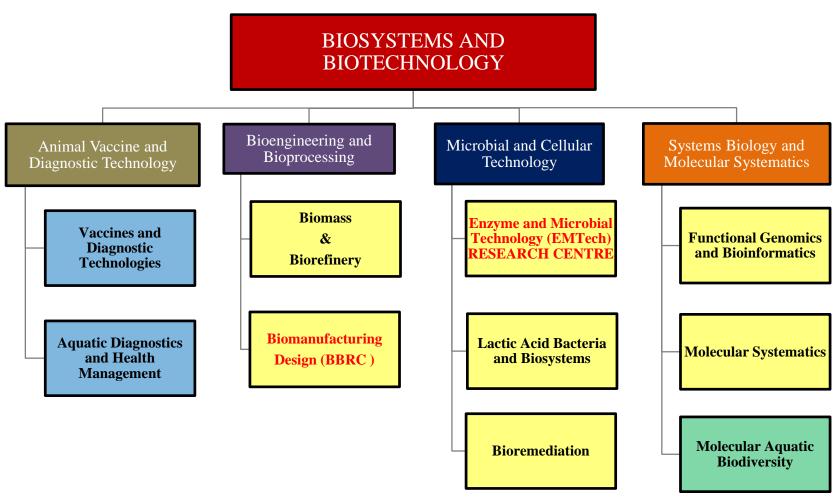
RP = Research Program

RC = Research Centre

RG = Research Group



CLUSTER: BIOSYSTEM & BIOTECHNOLOGY (BB)



"Towards universal human advancement and discovery of knowledge"



ENZYME & MICROBIAL TECHNOLOGY (EmTech)



Prof. Dr. Raja Noor Zaliha Raja Abd. Rahman Head of Research Center EmTech

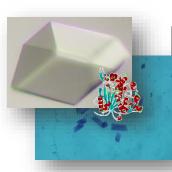
Isolation and identification of microorganisms for enzyme production

Molecular approaches to enhance yield and obtain novel properties

Structures and functions of enzymes

Enzymatic synthesis for high valueadded products

Bioremediation and bioconversion



Research Collaborators:

UNIVERSITIES/RI'S

- Nancy Université, France
- University of Minnesota, USA
- Osaka University, Japan
- University of Hyogo, Japan
- Hokkaido University, Japan
- Academia Sinica, Taiwan
- Malaysian Genome Institute (MGI)

- Maruwa Foods & Biosciences, Japan
- Masaru Sato Space Programme, Japanese Space Exploration Agency (JAXA)

BIOPROCESSING AND BIOMANUFACTURING RESEARCH CENTER (BBRC)



Prof. Dr. Arbakariya Ariff Head of BBRC

- Reactor system and process design
- Development, kinetics, modeling and optimization for production of industrial enzymes and products





Research Collaborators:

UNIVERSITIES/RI

- University of Sheffield, UK
- Air Langga University, Indonesia
- Thailand Institute of Science and Technological Research, Thailand

- Sime Darby Sdn Bhd
- Malaysian Palm Oil Board (MPOB)
- Malaysian AgriHighTech Sdn Bhd
- Stellagen Sdn Bhd

BIOMASS AND BIOREFINERY



Prof. Dr. Mohd Ali Hassan Research Group Leader

Biomass utilization for production of renewable and valuable green bioproducts (bioenergy, biofertilizer, bioplastics) from oil palm waste biomass, kitchen waste, landfill leachate and sago wastes.





Research Collaborators:

UNIVERSITIES/MINISTRIES/RI

- Kyushu Institute of Technology, Japan
- Advanced Institute of Science and Technology (AIST), Japan
- Ministry of Agriculture Forestry and Fisheries (MAFF), Japan
- Malaysian Agricultural Research and Development Institute (MARDI)
- SIRIM

- · Ajinomoto Corp., Japan
- Tokyo Electric Power Company (TEPCO), Japan
- CES Company, Incheon Korea
- FELDA Palm Industries Sdn Bhd
- Majlis Perbandaran Subang Jaya (MPSJ)

LACTIC ACID BACTERIA



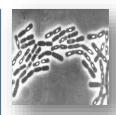
Prof. Dr. Raha Abdul Rahim Research Group Leader

Applications of LAB and their metabolites for food, health, livestock and aquaculture industries

Enhancing growth and production of metabolites bioprocess technology Plasmid and bacterial strain improvement

Recombinant vaccine development

LAB culture collection







Research Collaborators:

UNIVERSITIES/RI:

- UTM, USM, UM, UKM, UiTM
- National Institute of Health, USA
- Thailand Institute of Science and Technological Research
- BOKU, Austria
- NAIST, Japan

- Nutrino Synbio (M) Sdn. Bhd.
- Stellagen Sdn. Bhd.
- · Ecocillus Sdn Bhd.
- Cosmos Sdn Bhd.





Signing of MoU between UPM and Johor Plant Tech Sdn. Bhd.



Dr. Mohd Yunus Abd. Shukor explaining his **Kit for Monitoring Xenobiotics Pollution**



Signing of MoU between UPM, **FELDA and KIT**

MoU, Collaborations, Visits, **Seminars, Conferences, Professional Societies, and Society engagement**



Prof. G. R. Tomlinson from **Sheffield University**



Prof. Robert Slater from University of Hertfordshire, UK



Our protein to space!!! Research under Prof Raja Nor Zaliha

OUR PATENTS



Total of patents 2007-2011



SELECTED PRODUCTS



NipahScan



Bioplastic (PHA)



Planting Materials





New orchid varieties/fragrant orchids

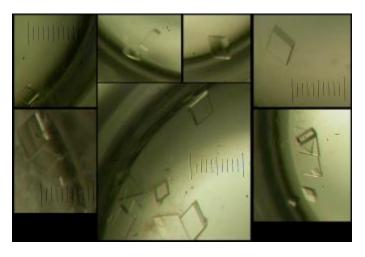
SELECTED PRODUCTS



Bioenergy, KIT-FELDA-UPM



Bacterial cellulose



Space crystals

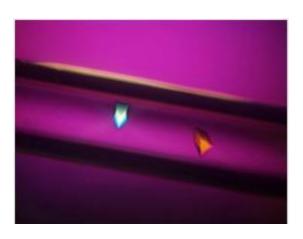


Enzyme assay of environmental toxicants (Xenoassay kit)

SELECTED PRODUCTS



ECPhage for colibacillosis control in poultry. The solution contains bacteriophage that could specifically eliminate the causative agent of colibacillosis. When administered to infected chickens, ECPhage could reduce the mortality rate of chickens by 75%. The body weights of infected chicken were also not significantly uninfected different from chickens.



L2 lipase space crystals in capillary tube

PRODUCTS-NEWSPAPER CLIPS



 $B_{\frac{\mathsf{WITH}\ \mathsf{KNOWLEDGE}\ \mathsf{WE}\ \mathsf{SERVE}}^{\mathsf{ERILMU}\ \mathsf{BERBAKT}} I$





EXPERTS AT BIOTECH UPM





HEAD OF DEPARTMENT
Professor Dato' Dr. Abu Bakar Salleh
Ph.D (University of St. Andrews)
Field: Applied Biochemistry and Enzyme Technology



Professor Dr. Mohd. Arif Syed Ph.D (University of Aberdeen) Field: Bioremediation and Toxicology



Professor Dr. Maziah Mahmood
Ph.D (Murdoch University)
Dip. Plant. Tissue Culture (C.S.U.)
Field: Plant Biochemistry and Plant Biotechnology





Professor Dr. Norhani Abdullah Ph.D (Universiti Putra Malaysia) Field: Animal Nutritional Biochemistry



Associate Professor Dr. Mohd. Yunus Abd. Shukor (Sabbatical leave)
Ph.D (Universiti Putra Malaysia)

Field: Bioremediation



Dr. **Mohd Shukuri Mohamad Ali** (*Sabbatical leave*)
Ph.D (Universiti Putra Malaysia)
Field: Structure Biochemistry





Dr. Syahida AhmadPh.D (Universiti Putra Malaysia)Field: Natural Product and Animal Cell Biotechnology



Dr. **Noor Azmi Shaharudin**Ph.D (University of Notthingham)
Field: Plant Biotechnology



Dr. Uswatun Hasanah Zaidan (Post Doctoral leave)
Ph.D (Universiti Putra Malaysia)
Field: Enzyme Technology & Food Biochemistry





Dr. **Mohammed Nazrim Marikkar** Ph.D (Universiti Putra Malaysia) Field: Food Chemistry



Dr. **Siti Aqlima Ahmad**Ph.D (Universiti Putra Malaysia)
Field: Bioremediation & Toxicology



Dr. **Zetty Norhana Balia Yusof**Ph.D (University of Cambridge)
Field: Plant Sciences





Dr. **Amir Syahir Amir Hamzah**Ph.D (Tokyo Institute of Technology)
Field: Biosensor



Dr. **Siti Nurbaya Oslan**Ph.D (Universiti Putra Malaysia)
Field: Microbial Biotechnology



Dr. **Nur Adeela Yasid**Ph.D (University of Sheffield)
Field: Microbial Metabolomics





HEAD OF DEPARTMENT
Associate Professor Dr. Rosfarizan Mohamad
Ph.D (Universiti Putra Malaysia)

Field: Fermentation Technology



Professor Dr. Mohd. Ali Hassan

Ph.D (Okayama University)

Field: Bioprocess Engineering and Environmental Biotechnology



Professor Dr. Arbakariya Ariff

Ph.D (University of Manchester Institute of Science & Technology) Field: Fermentation Technology and Bioprocess Engineering





Professor Dr. Suraini Abd. Aziz
Ph.D (University of Wales)
Field: Biochemical Engineering and Enzyme Technology



Professor Dr. Lai Oi Ming
Ph.D (Universiti Putra Malaysia)
Field: Enzyme & Oils Technology and Food Biotechnology



Associate Professor Dr. Foo Hooi Ling Ph.D (Imperial College London) Field: Industrial Biotechnology





Associate Professor Dr. Umi Kalsom Md Shah Ph.D (Universiti Putra Malaysia) Field: Industrial Microbiology



Associate Professor Dr. Nor 'Aini Abdul Rahman
Ph.D (Kyushu Institute of Technology)
Field: Environmental Biotechnology & Metabolic Engineering



Dr. **Phang Lai Yee**Ph.D (Kyushu Institute of Technology)
Field: Environmental Biotechnology





Dr. **Helmi Wasoh** @ Mohamad Isa Ph.D (Universiti Putra Malaysia) Field: Enzyme Technology



Dr. Hidayah Ariffin
Ph.D (Kyushu Institute of Technology)
Field: Environmental Biotechnology & Bioprocess Engineering



Dr. Mohd Rafein Zakaria (*Post Doctoral leave*)
Ph.D (Universiti Putra Malaysia)
Field: Environmental Biotechnology





Dr. **Murni Halim**Ph.D (University College London)
Field: Bioprocess Engineering



Dr. **Norhayati Ramli**Ph.D (Universiti Putra Malaysia)
Field : Microbial Biotechnology



Dr. **Mohd Zulkhairi Mohd Yusoff**Ph.D (Kyushu Institute of Technology)
Field: Environmental Biotechnology





Dr. **Mohamad Faizal Ibrahim**Ph.D (Universiti Putra Malaysia)
Field: Bioprocessing and Enzyme Technology



Dr. Mohd Shamzi MohamedPh.D (Universiti Putra Malaysia)Field: Fermentation Technology and Bioprocess Engineering



Dr. **Ahmad Muhaimin Roslan**Ph.D (Kyushu Institute of Technology)
Field: Environmental Engineering





HEAD OF DEPARTMENT
Associate Professor Dr. Janna Ong Abdullah
Ph.D (Universiti Putra Malaysia)
Field: Molecular Biology



Professor Dr. Raha Abdul Rahim (secondment to the Ministry of Education)
Ph.D (Strathclyde University)

Field: Microbial Genetics & Molecular Biology



Professor Dr. Tan Soon GuanPh.D (University of Hawaii)
Field: Genetics





Associate Professor Dr. Norihan Mohd Saleh (secondment to the Ministry of Science, Technology and Innovation)
Ph.D (University of Nottingham)

Field: Plant Biotechnology



Associate Professor Dr. Suhaimi Napis Ph.D (Durham University) Field: Plant Molecular Biology



Associate Professor Dr. Ho Chai Ling Ph.D (Chiba University) Field: Plant Molecular Biology





Associate Professor Dr. Noorjahan Banu Mohamed Alitheen

Ph.D (Australian National University)

Field: Immunology and Animal Cell Biotechnology



Associate Professor Dr. Parameswari a/p Namasivayam

Ph.D (University of Cambridge)

Field: Plant Molecular and Developmental Biology



Associate Professor Dr. Mohd. Puad Abdullah

Ph.D (Durham University)

Field: Plant Biochemistry and Plant Molecular Biology





Dr. Nurulfiza Mat IsaPh.D (Universiti Putra Malaysia)Field: Bioinformatics and Molecular Biology



Dr. Nik Mohd Afizan Nik Abd Rahman (Post Doctoral leave)
Ph.D (Universiti Putra Malaysia)
Field: Cell & Animal Culture Biotechnology



Dr. Normi Mohd Yahaya
Ph.D. (Riken Institute & Universiti Sains Malaysia)
Field: Molecular and Structural Biochemistry





Dr. **Noor Baity Saidi**Ph.D (University of Edinburgh)
Field: Plant Molecular Pathology



Dr. **Mariatulqabtiah Abdul Razak** Ph.D (Imperial College London) Field: Immunology



Dr. **Amalia Mohd Hashim**Ph.D (Australian National University)
Field: Biological Chemistry



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DEPARTMENT OF CELL AND MOLECULAR BIOLOGY



Dr. **Dhilia Udie Lamasudin**Ph.D (University of Glasgow)
Field: Infection and Immunity



Dr. **Siti Sarah Othman**Ph.D (University of Glasgow)
Field: Infection and Immunity



Dr. **Mas Jaffri Masarudin**Ph.D (La Trobe University)
Field: Nanobiotechnology





Dr. **Adam Leow Thean Chor** Ph.D (Universiti Putra Malaysia)

Field: Protein Engineering and Molecular Biology





HEAD OF DEPARTMENT
Associate Professor Dr. Muhajir Hamid
Ph.D (University of Ulster)
Field: Animal Cell Technology



Professor Datin Paduka Dr. Khatijah Mohd Yusoff Ph.D (La Trobe University) Field: Microbial Genetics and Molecular Biology



Professor Dr. Raja Noor Zaliha Raja Abd. Rahman D.Eng. (Kyoto University) Field: Microbiology and Molecular Biology





Professor Dr. Tan Wen Siang
Ph.D (University of Edinburgh)
Field: Molecular Biology and Virology



Professor Dr. Shuhaimi Mustafa Ph.D (Universiti Putra Malaysia) Field: Food Microbiology





Associate Professor Dr. Sieo Chin Chin Ph.D (Universiti Putra Malaysia) Field: Applied Microbiology



Associate Professor Dr. Norazizah Shafee Ph.D (University of Malaya) Field: Molecular Biology and Virology



Dr. **Wan Zuhainis Saad**Ph.D (Universiti Putra Malaysia)
Field: Mycology





Dr. **Asilah Ahmad Tajudin** Ph.D (Lund University) Field: Nanobiotechnology



Dr. **Nurhidayah Roslan**Ph.D (Universiti Putra Malaysia)
Field: Molecular Biology



Dr. Chia Suet Lin (Post Doctoral leave)
Ph.D (Universiti Putra Malaysia)
Field: Medical Biotechnology





Dr. **Mohd Termizi Yusof**Ph.D (University of Exeter)
Field: Mycology



Dr. **Fairolniza Mohd Shariff**Ph.D (Universiti Putra Malaysia)
Field: Structural Biology



Dr. **Suriana Sabri**Ph.D (The University of Queensland)
Field: Metabolic Engineering



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WE ARE ALUMNI OF: AUSTRALIA

ENGLAND





Imperial College London

















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SCOTLAND

JAPAN























RIKEH













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