

OUTREACH

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NEW
rankings
released

QS ASIAN
UNIVERSITY
RANKINGS

- UNIMAS – Top 200 Asian Universities 2011
- Rural Electrification Projects
- Nama Berita?: A Text to Speech System for Sarawak Languages
- Nanotechnology for Wastewater Treatment

Fast Facts on UNIMAS

Date established (incorporated) 24 December 1992
Campus Site Kota Samarahan, Sarawak, Malaysia
(about 25 km from the city of Kuching,
the capital city of Sarawak)

Present Vice Chancellor Prof Datuk Dr Khairuddin Ab Hamid

Student Enrolment (Academic Session 2010/2011)	Undergraduate	6,887
	Postgraduate	898
	Total	7,785

Full time staff	Academic	663
	Management	131
	Support	1001
	Total	1,795

Faculties

Faculty of Applied and Creative Arts (FACA)
Faculty of Cognitive Sciences and Human Development (FCSHD)
Faculty of Computer Science and Information Technology (FCSIT)
Faculty of Economics and Business (FEB)
Faculty of Engineering (FE)
Faculty of Medicine and Health Sciences (FMHS)
Faculty of Resource Science and Technology (FRST)
Faculty of Social Sciences (FSS)

Institutes

Institute of Biodiversity and Environmental Conservation (IBEC)
Institute of East Asian Studies (IEAS)
Institute of Health and Community Medicine (IHCM)
Institute of Social Informatics and Technological Innovations (ISITI)
Institute of Design and Innovation (InDI)

Centres

Centre for Language Studies (CLS)
Centre for Academic Information Services (CAIS)
Centre for Student Development (CSD)
Centre for Technology Transfer and Consultancy (CTTC)
Centre for Information and Communication Technology Services (CICTS)
Centre for Applied Learning and Multimedia (CALM)
Research and Innovation Management Centre (RIMC)
Centre for Graduate Studies (CGS)

Centres of Excellence

Malaria Research Centre
Centre for Water Research
Centre for Rural Informatics
Centre for Image Analysis and Spatial Technologies
Centre for Renewable Energy
Centre for Semantic Technology and Augmented Reality
Centre for Sago Research
Centre for Disability Studies

International Linkages

53 International Partners Worldwide

Centre for Academic Information Services

Volume of Books	121,951
Sets of Media Materials	8,036
Journal Titles (Print and Electronic)	18,458

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Prof Datuk Dr Khairuddin Ab Hamid

Chairperson

Prof Dr Peter Songan

Editor

Prof Dr Haji Mustafa Abdul Rahman

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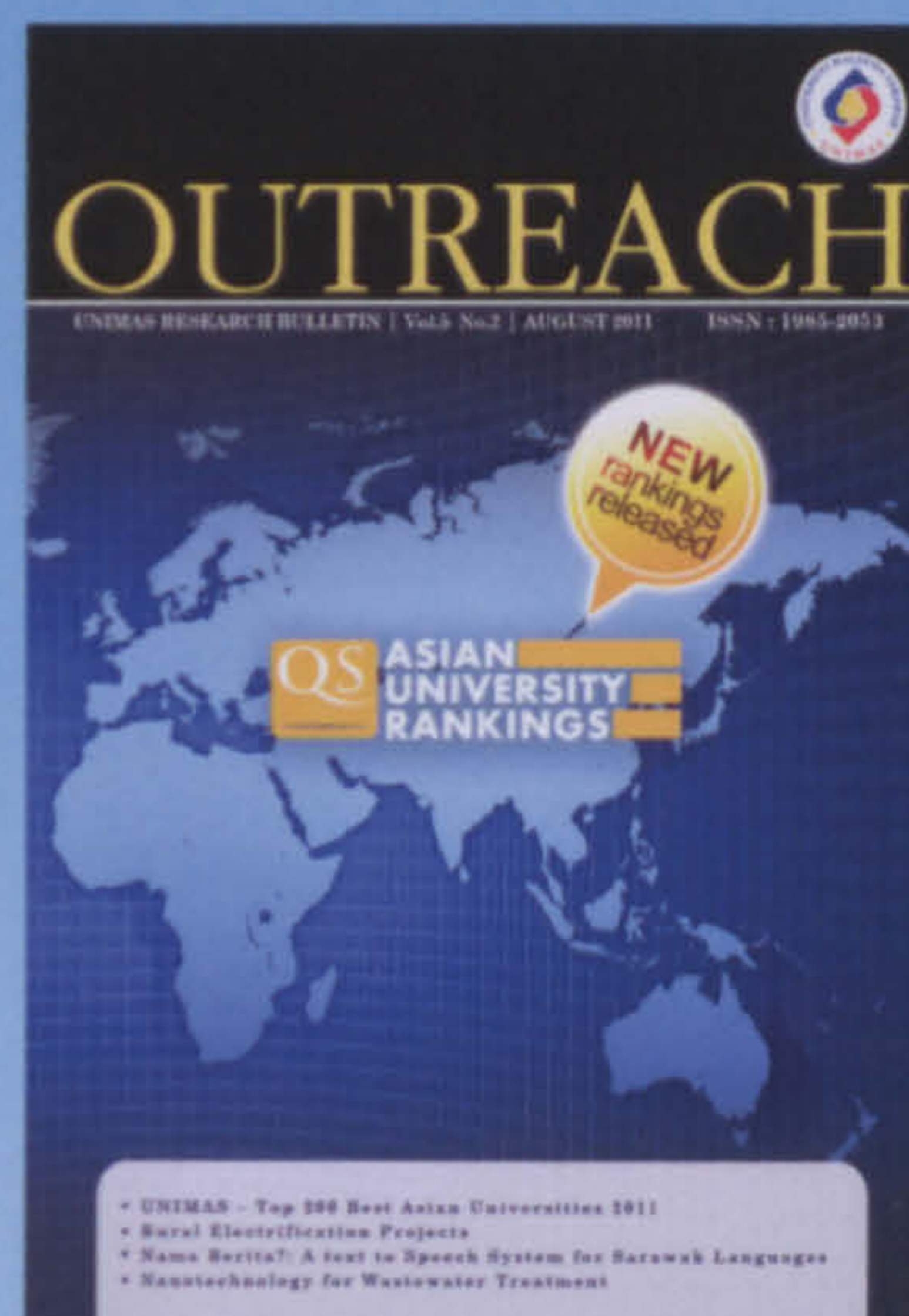
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Asian map.

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Introduction to This Issue

It is my pleasure to welcome you to the August issue of Outreach. This year has been fruitful for UNIMAS. One of the great milestones in our achievement is being ranked as one of the top 200 universities in Asia based on the QS Asian University Rankings. Congratulations to each and everyone in making this possible.

This year also saw our continuous involvement in community engagement ventures, such as the rural electrification project in Sarawak and the needs analysis study of the Orang Asli in Peninsular Malaysia. In this issue, we have a glimpse of a local community perspective on the contribution of UNIMAS through the eyes of YBhg Dato' Peter Minos. I am also pleased to announce that we have set up two new

research institutes, namely, the Institute of Social Informatics and Technological Innovations (ISITI), and the Institute of Design and Innovation (InDI). We have also added the Centre of Excellence for Disability Studies (CoEDS) into our list of centres of excellence. With the birth of CoEDS, we now have eight centres of excellence at UNIMAS.

Apart from our ongoing research in various key areas, we are working closely with industry and other higher learning institutions in our quest to achieve a research university status by 2015. We signed MOUs with various local and foreign industry players, as well as institutions of higher learning from Korea and Cambodia early this year. On the agenda of commercialising research products, I am pleased that we have successfully obtained intellectual property rights for a number of our products, and we are also in the process of commercializing some of them. On that note, it is my sincere hope that our research efforts will propel UNIMAS towards national and international prominence in our contributions to advancement of knowledge and the society.

Prof Dr Peter Songan

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RESEARCH NEWS

UNIMAS –Top 200 Asian Universities 2011

UNIMAS recently made its first appearance among the Top 200 Asian Universities 2011 published by QS Asian University Rankings. According to the Vice-Chancellor, Professor Datuk Dr Khairuddin Abdul Hamid, “It came as a pleasant surprise, but then we have been very focused in what we do. We are ranked at number 191, and with that we have added to the number of Malaysian universities in the ranking. We hope we will be able to promote Malaysia as an education hub”. This year, there were seven universities in Malaysia that were ranked among the top 200 Asian Universities. The QS Asian University rankings include international exchanges and citation.



Rural Electrification Projects

The Centre of Excellence for Renewable Energy (CoERE) started its first consultancy work in 2009 by collaborating with the Ministry of Energy, Green Technology and Water in the ‘Green Energy Island’ project. This project, which took off in August 2011, aims to generate renewable green energy for an isolated, rural, off-grid area in Sarawak and Sabah. It is expected to be completed by July 2012. CoERE is also collaborating with the Ministry of Rural and Regional Development to supply electricity to two off-grid long houses by developing hydro electricity systems for both long houses. These projects received grants totalling approximately RM4 million from both Ministries.



UNIMAS-MGRC Primates Project

UNIMAS and Malaysian Genomics Resource Centre (MGRC) recently entered into an agreement for a Primates Genome Project (2011-2016). The RM500,000 research grant is for a long term collaborative research initiative to address issues on the monkey-human conflict, conservation, ecology, genetics and management of endangered species in Malaysia. In this multidisciplinary research, researchers in the field of ecology, molecular genetics, diseases, botany and management will join forces to investigate research problems peculiar to the respective regions or species. Permission for the research and sample collection has already been granted by the Sarawak Forestry Department and Sarawak Forestry Corporation and the fieldwork is underway.

Needs Analysis in Developing Telecentre Programme for Orang Asli Semenanjung Malaysia

In February 2011, Centre of Excellence for Rural Informatics (CoERI) at the Institute of Social Informatics and Technological Innovations (ISITI), the initiator of the multi-award winning eBario project, embarked on a study to conduct a needs analysis for developing a Telecentre for the Bridge Digital Divide Initiatives in Malaysia. The RM1.4

million project is funded by the Economic Planning Unit (EPU) of Prime Minister's Office. The other collaborators of ISITI-CoERI project are Kementerian Kemajuan Wilayah dan Luar Bandar (KKLW), Jabatan Kebajikan Orang Asli (JAKOA), Semai (Orang Asli ethnic community in Pahang) and Temiar (Orang Asli ethnic group in Kelantan). The feasibility study is conducted in Pos Balar and Pos Gob at Gua Musang, Kelantan and another two sites at Kuala Lipis, Pahang, namely, Pos Lenjang and Pos Sinderut.

This project seeks to shift the focus away from the presence of ICT facilities to the information and communication needs of rural communities. This is because as user patterns become more obvious and users' skills improve, there will be additional changes to the needs of the core user groups and this may entail changes in the types of services, facilities or even operating hours of a telecentre.



Centre of Excellence for Disability Studies (CoEDS)- Latest CoE in UNIMAS

The Centre of Excellence for Disability Studies (CoEDS) was established in UNIMAS in May 2011 and is anchored at the Faculty of Social Sciences. Being the first of its kind in Malaysia, CoEDS will spearhead collective research and responses towards creating an inclusive society. A multidisciplinary approach to research is promoted at the Centre. A debut research project of CoEDS on disability studies brings together researchers from the Faculty of Social Sciences, Faculty of Medical and Health Sciences, and the Faculty of Computer Science and Information

Technology. CoEDS is developing an international presence through links with centres of disability studies in academic institutions globally. Recently, CoEDS completed a project on Culturally Sensitive Disability Studies: In Malaysia and the UK with the Critical Disability Studies at Manchester Metropolitan University.



UNIMAS R&D Expo 2011

The 5th Annual UNIMAS R&D Exposition was held on 28-29 March 2011 at the Centre for Academic Information Services (CAIS) Exhibition Centre. The theme for this year is "Building Research, Development, Innovation & Commercialisation competencies for Academic Excellence", which is in line with the university's aspiration to become a research university. The R&D Expo is divided into three major clusters: Pure Sciences, Technology and Engineering, and Social Sciences/Humanities. The exhibits included creative designs utilising recycled materials, environmental engineering, robotic technology, medical tools, ICT, augmented reality systems as well as the soft sciences. A total of 86 participants from various faculties took part in this exposition and 9 gold, 19 silver, and 18 bronze medals were awarded.



RESEARCH HIGHLIGHTS

The Prevalence and Distribution of Leptospirosis in the Rejang Basin

Researchers: M. Taha Arif¹, Lela Suut¹, Haironi Yusof¹, M. Raili Suhaili¹, N. Aliza A. Rahim¹, Razitasham Safii² & Joseph T. Katip¹

¹Faculty of Medicine and Health Sciences, UNIMAS, ²Sarawak Health Department

Leptospirosis is a zoonotic infection caused by the pathogenic bacteria *Leptospira sp.*, and recognised as a re-emerging infection. The worldwide prevalence of human leptospirosis ranges from 3.6% to 53%, and Southeast Asia is one of the recognised endemic foci for leptospirosis. The earliest documented leptospirosis case in Malaysia was reported in 1928, in the then Federated States of Malaya. In the past few years, a number of leptospiral outbreaks have been reported in Malaysia, and most of the outbreaks were associated with occupational exposure, poor living conditions and outdoor recreational activities.



Infections in human are often contracted through contact with carrier animals' urine (i.e., rats, dogs, cattles, pig etc) or exposure to the environment contaminated with leptospire. In most instances, the infections resulted in mild systemic illness, though fatalities do occur due to multiorgan involvement. The diagnosis of leptospirosis is verified by positive culture of the organism or demonstration of an appreciable immunological response by ELISA and microscopic agglutination test (MAT). Since December 2010, leptospirosis is a notifiable disease in Malaysia mandated under the provision of Prevention and Control of Infectious Disease Act 1988. Till July this year, 51 cases of human leptospirosis have been reported in Sarawak as compared to 49 cases documented in 2010.

The number of leptospirosis cases in Sarawak is primarily obtained through notification of established infection from various health facilities in Sarawak. Thus, there might be under reporting of cases due to the subclinical infection. This study was undertaken to obtain a better perspective of the disease distribution and its associated factors. Rejang basin was chosen as the main study area due to its vastness, geographical variation (mountainous terrain to midlands and river basin), its agricultural-based community and high yearly rainfall. These factors provide substantial opportunities for interaction between leptospira animal reservoirs and human population.

A number of field studies to collect human and animal samples have been conducted by the research group in collaboration with Sarawak Health Department. Collected human sera were tested for the presence of leptospiral antibodies. Preliminary results of the human samples showed suggestive evidence of leptospiral infection in 30.6% of respondents studied. These findings implied that there is a close association between the sampled population daily activities (farming, water activities) and their source of water with IgM leptospira positivity. It is hoped that the data obtained from this study can be utilised for future health programmes related to leptospirosis and increase the awareness of leptospirosis among health practitioners and public in Sarawak.



Electrohydrodynamics in Microfluidics

Researchers: A. R. H. Rigit¹ (Leader), J. Labadin², D. B. L. Bong¹, A. Joseph¹, M. S. Osman¹, M. Hassan¹, E. Junaidi¹, M. Yusuf¹ and A. R. M. Amin¹, A. Chai³ and A. Valkguelt³, A. Idris⁴, L. C. Lai⁵

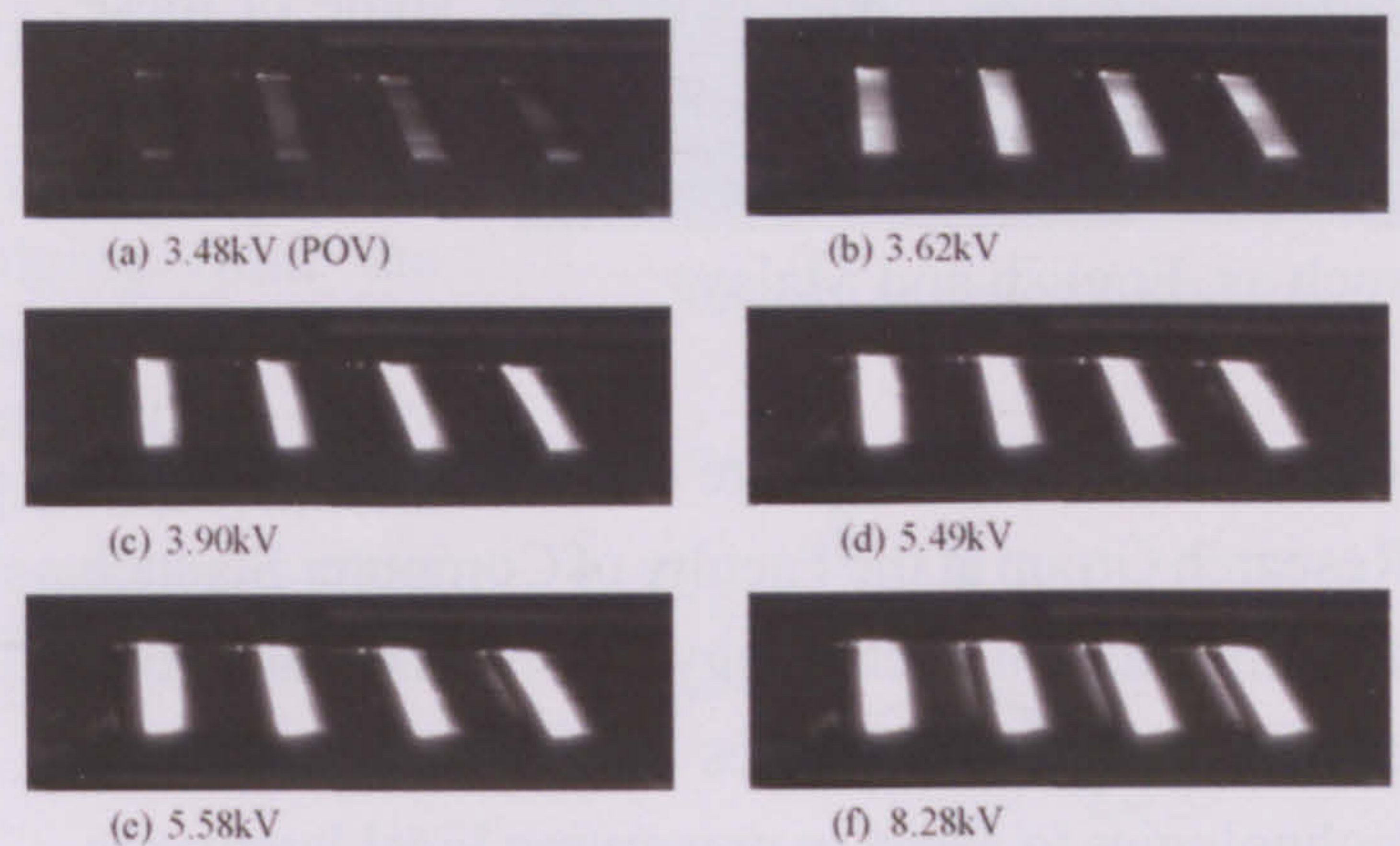
¹Faculty of Engineering, UNIMAS, ²Faculty of Computer Science and Information Technology, UNIMAS, ³Faculty of Engineering, Swinburne Sarawak Campus, ⁴UNITEN, ⁵UTAR Kampar Campus

The use of electrical forces in microfluidics has been the subject of intense research and it is likely to increase in the near future. For these microfluidics system, gravity plays a negligible role while electric and capillary forces become dominant. In the absence of free surfaces, the electrical force is the best candidate for moving fluids and particles, heat removal, and mixing enhancement. In the case of weak electrolytes, the role of these forces has been investigated intensively since they can be used to control bioparticles. This knowledge is required for building lab-on-a-chip devices used to detect and diagnose cancer cells, noxious bacteria, viruses and other potentially dangerous toxins. In insulating systems, the main actual thrive is the development of liquid-based cooling solutions for increasing heat removal as electronic systems decrease in size. Liquid-based cooling solutions are chosen since they have much higher removal capacities as compared to air-cooling systems.

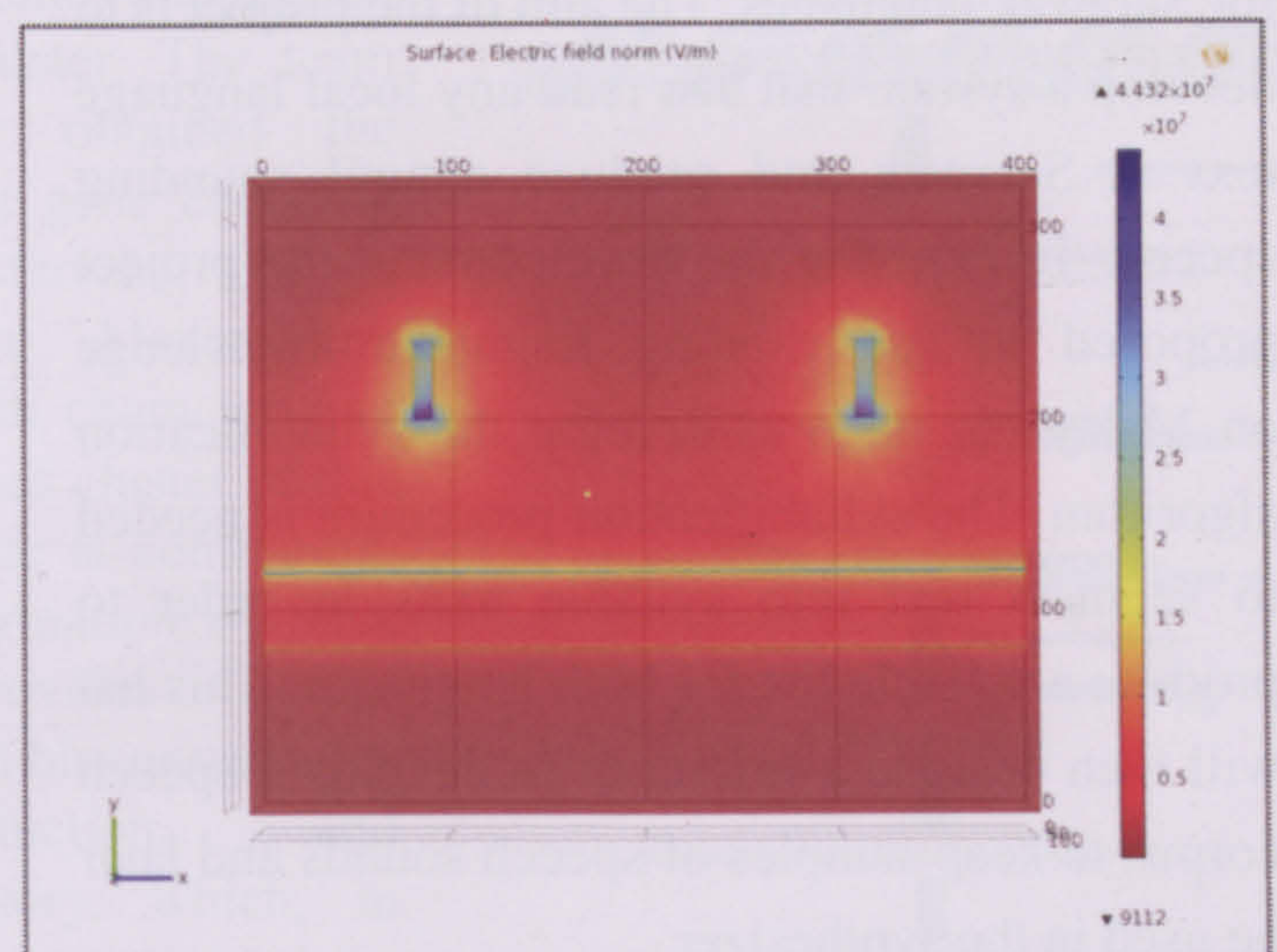
We work on microsystems where electric fields act in dielectric or insulating liquids, and in weak electrolytes. In insulating liquids, electrical forces act in a bulk due to charge injection, i.e., enhanced at wedges and end points of electrodes via induced changes of conductivity and permittivity due to thermal gradients originated in most cases by Joule heating. The latter forces, called electrothermal, are also present in the bulk of electrolytes. The distribution of charges in isothermal electrolytes is very different from the case of isothermal insulating liquids due to the strong tendency in electrolytes to electro-neutrality. As a consequence, the electrical charge is present only near the electrodes, i.e., in the charged double layer, at least for low voltages. The electrical forces, acting on the double layer, often give rise to liquid flow. For high voltages, the flow may reverse its direction. The reason of this phenomenon is still not clear, though several mechanisms have been reported in the literature.

We investigate the mechanisms of charge generation both in insulating liquids and electrolytes. This will allow us to understand the origin of the different electrical forces and

their relative importance, depending on the size of the system, the electrical properties of the liquid, the amplitude and frequency of the applied voltage and the electrode-liquid transfer reactions. Finally, we investigate the relevance of fluid motion for particle manipulation. To this end, we need to compare the motion due to the drag force to the direct motion induced by dielectrophoresis (DEP). This analysis is particularly necessary for submicron particles, since overcoming the Brownian motion by DEP requires intense electric fields, which inevitably will put the liquid into motion.



Plasma formation as observed in the dark at different applied voltage (courtesy of I. Dakek, 2009)



Simulation of electric field around two micropillars with a width of $10\mu\text{m}$ (courtesy of M.C. Chiong, 2010)

Nama Berita?: A Text to Speech System for Sarawak Languages

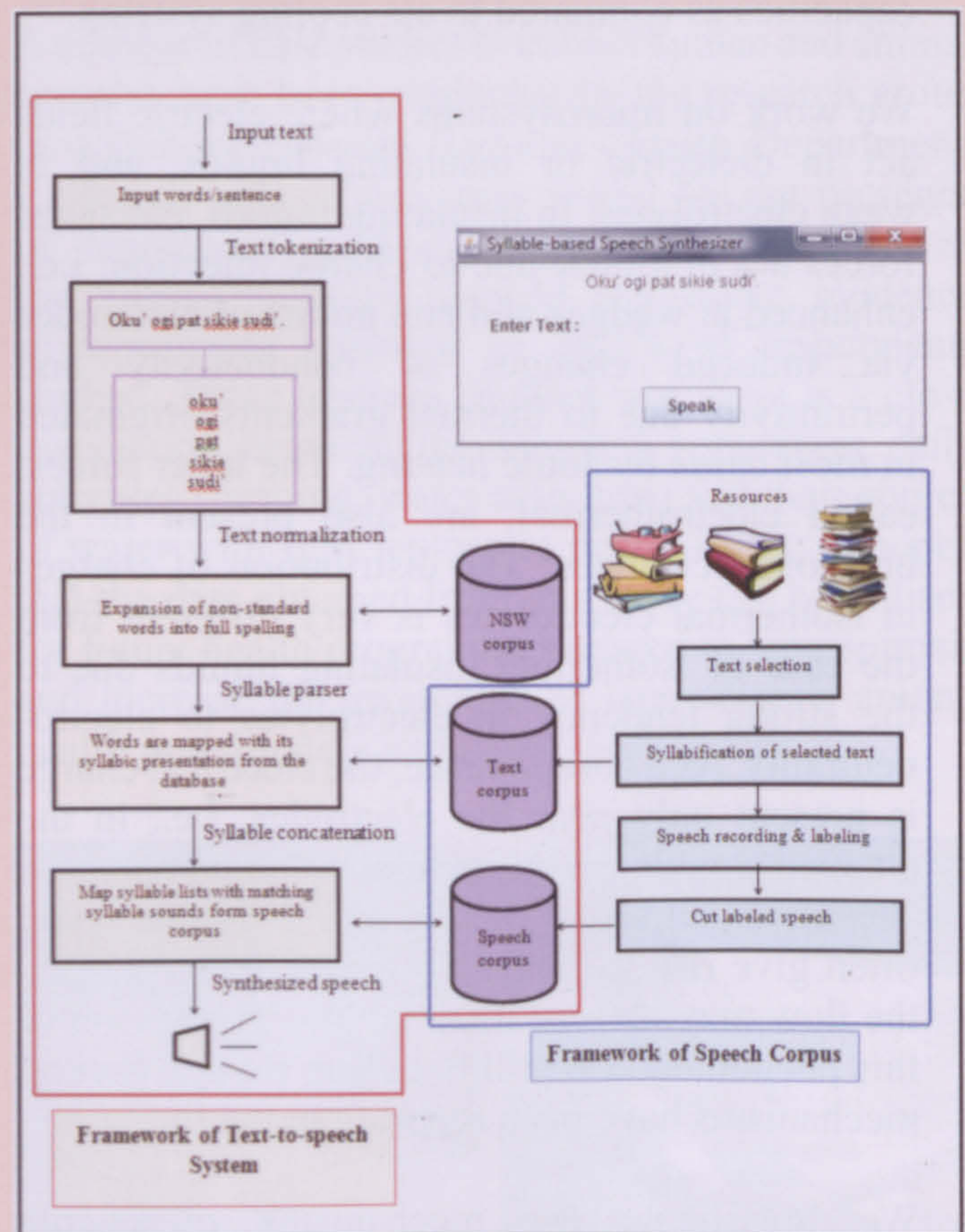
Researchers: Vyonne Edwin, Cheong Chai Yeen, Sarah F. S. Juan, Lee Jun Choi, Alvin Yeo Wee and Noor Alamshah Bolhassan.

Faculty of Computer Science and Information Technology, UNIMAS

Sarawak has many under-resourced languages, which stand to become extinct if measures are not taken to preserve and maintain them. These languages are mostly spoken by the indigenous groups and not many of these languages are documented. Languages that are spoken by the Penans, for instance, have many different dialects which are not mutually intelligible. Due to circumstances such as inter-racial marriages, urbanization and media influences, some of these languages are facing extinction or loss of purity due to usage of other commonly used languages such as, English and Malay.

The Sarawak Language Technology (SaLT) Research Group at the Faculty of Computer Science and Information Technology in UNIMAS has been conducting various studies on applying computer technologies to assist in preserving local languages as well as localizing computer applications. One of their current projects is the text to speech system for Sarawak languages. The aim of the project is to develop a system that can read any local language text in Sarawak and produce natural sounding speech. To expedite the development, the project proposed to use existing linguistic knowledge on Malay language to develop the syllabification algorithm. The syllabification procedure is needed to segment text into syllable units in order to produce a syllable list for both languages. This list will then become a reference to develop a speech corpus to keep samples of speech sounds and later be used in the synthesizer.

An experiment has been carried out to evaluate the output of the system using two methods which are Categorical Estimation and Modified Rhythm Test Questionnaire. Listeners have given a mean score of 3.07 out of 5 for the first test, and the second test showed 85% accuracy for Iban and 90% accuracy for Bidayuh. Although current results are in the acceptable range, the approach used in the project proved to work in developing a Text To Speech (TTS) system for local languages in Sarawak. Based on the listeners' feedback, more improvements are needed to produce better speech sounds, thus, putting in mind the high expectation of potential users of the system.



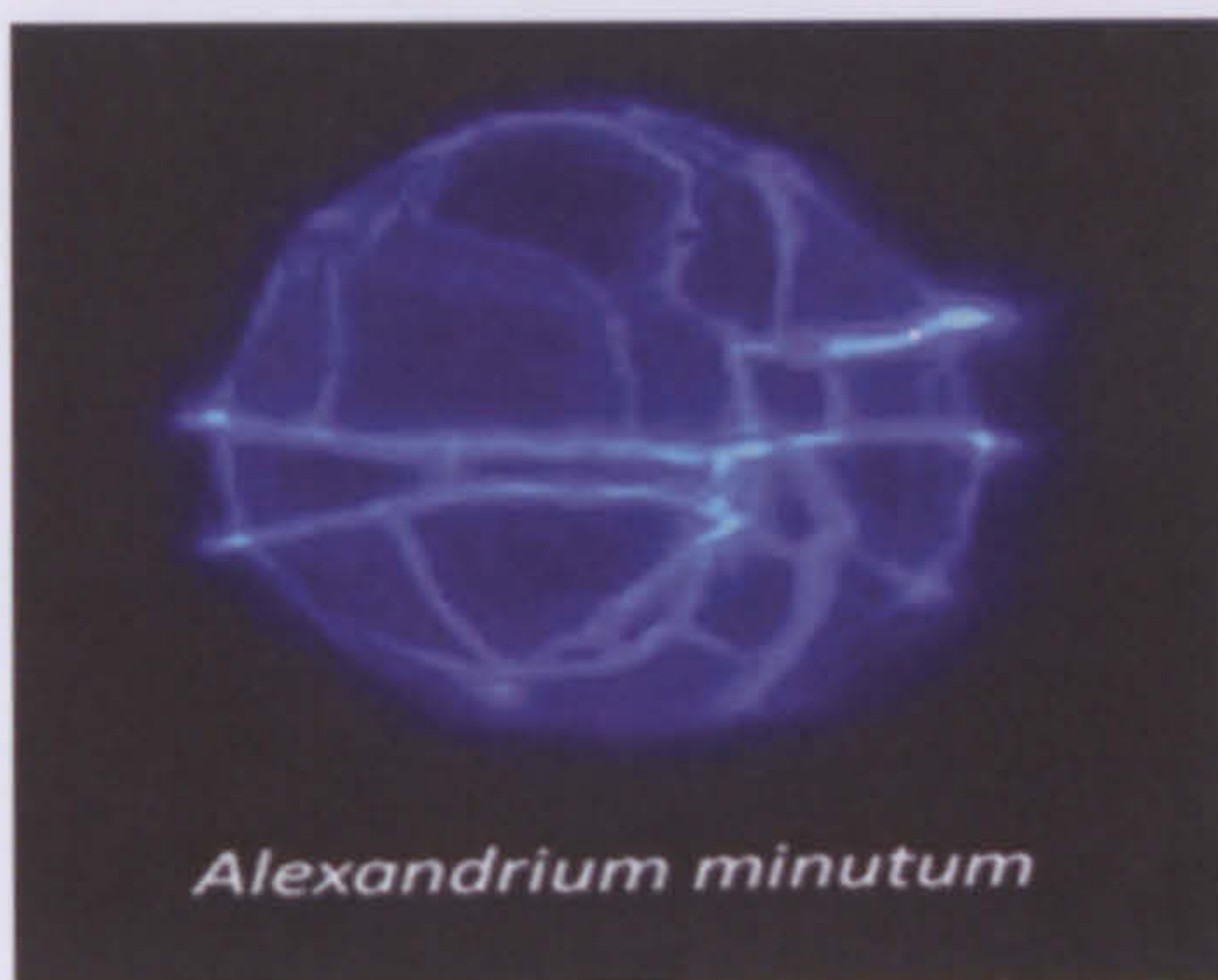
The Framework of the Sarawak Text to Speech System and Speech Corpus.

Discovery of Saxitoxin Biosynthetic Genes in Toxic Marine Dinoflagellates

Researchers: Leaw Chui Pin¹, Lim Po Teen², Hii Kieng Soon¹, Gires Usup³, Takehiko Ogata⁴, Atsushi Kobiyama⁴

¹Institute of Biodiversity and Environmental Conservation, UNIMAS, ²Faculty of Resource Science and Technology, UNIMAS, ³Universiti Kebangsaan Malaysia, ⁴Kitasato University

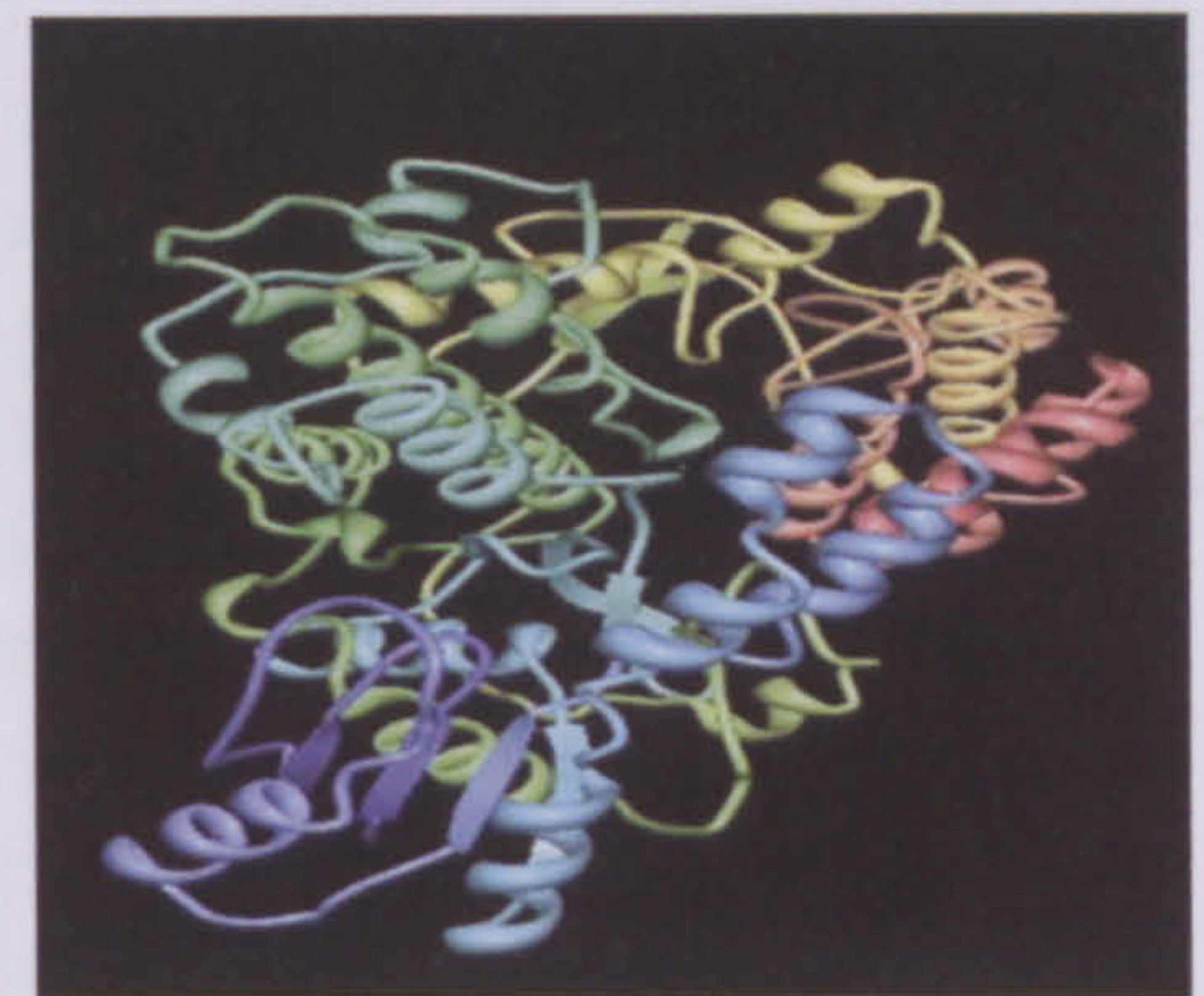
Paralytic shellfish poisoning (PSP) is a human toxic syndrome that has been widely reported in the Southeast Asian regions. PSP occurred due to the consumption of biotoxin-contaminated shellfish and finfish. The biotoxin is collectively known as saxitoxin (STX). It is a naturally occurring sodium channel-blocking neurotoxin, with more than 30 derivatives. No antidote for PSP was reported thus far. These PSP associated toxins are produced by several organisms of eukaryotic marine dinoflagellates and prokaryotic cyanobacteria. In Malaysia, the toxic marine dinoflagellates, *Alexandrium minutum*, *A. tamiyavanichii* and *Pyrodinium bahamense* var. *compressum* are the major causative organisms that are responsible for the PSP events.



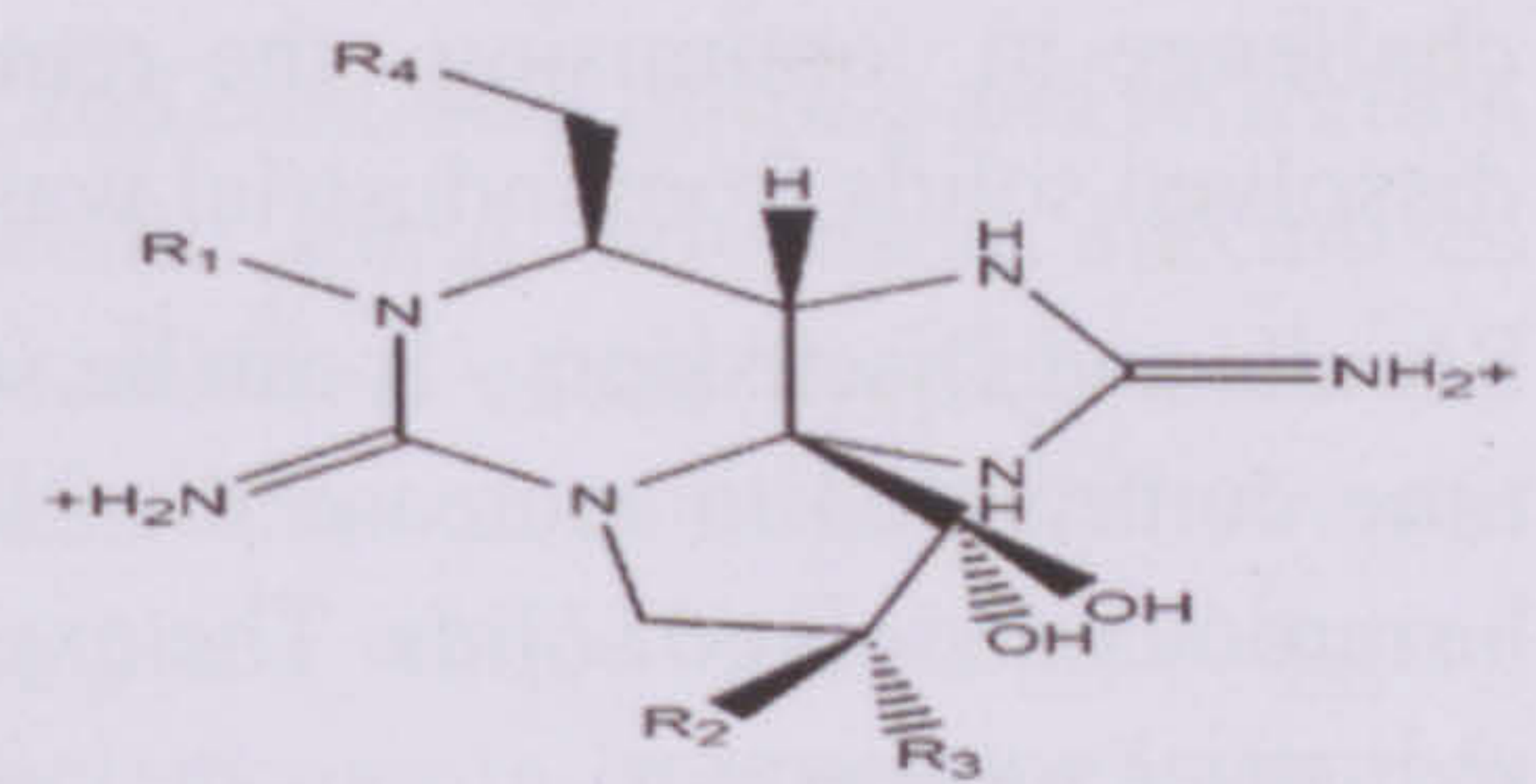
UNIMAS is actively involved in Harmful Algal Blooms (HABs) research. Recently, a research project led by Dr Leaw was

undertaken to characterize the biosynthesis genes cluster encoding the paralytic shellfish-toxins (PST) in toxic dinoflagellates. Biosynthesis genes and its cluster (*sxt*) was first discovered and described from toxic cyanobacteria. However, none of the genes of PSTs-producing marine dinoflagellates has been characterized. Judging from the distinct toxin compositions of dinoflagellates in nature, they believed that the biosynthesis pathway of dinoflagellates is most likely to be different from the cyanobacteria.

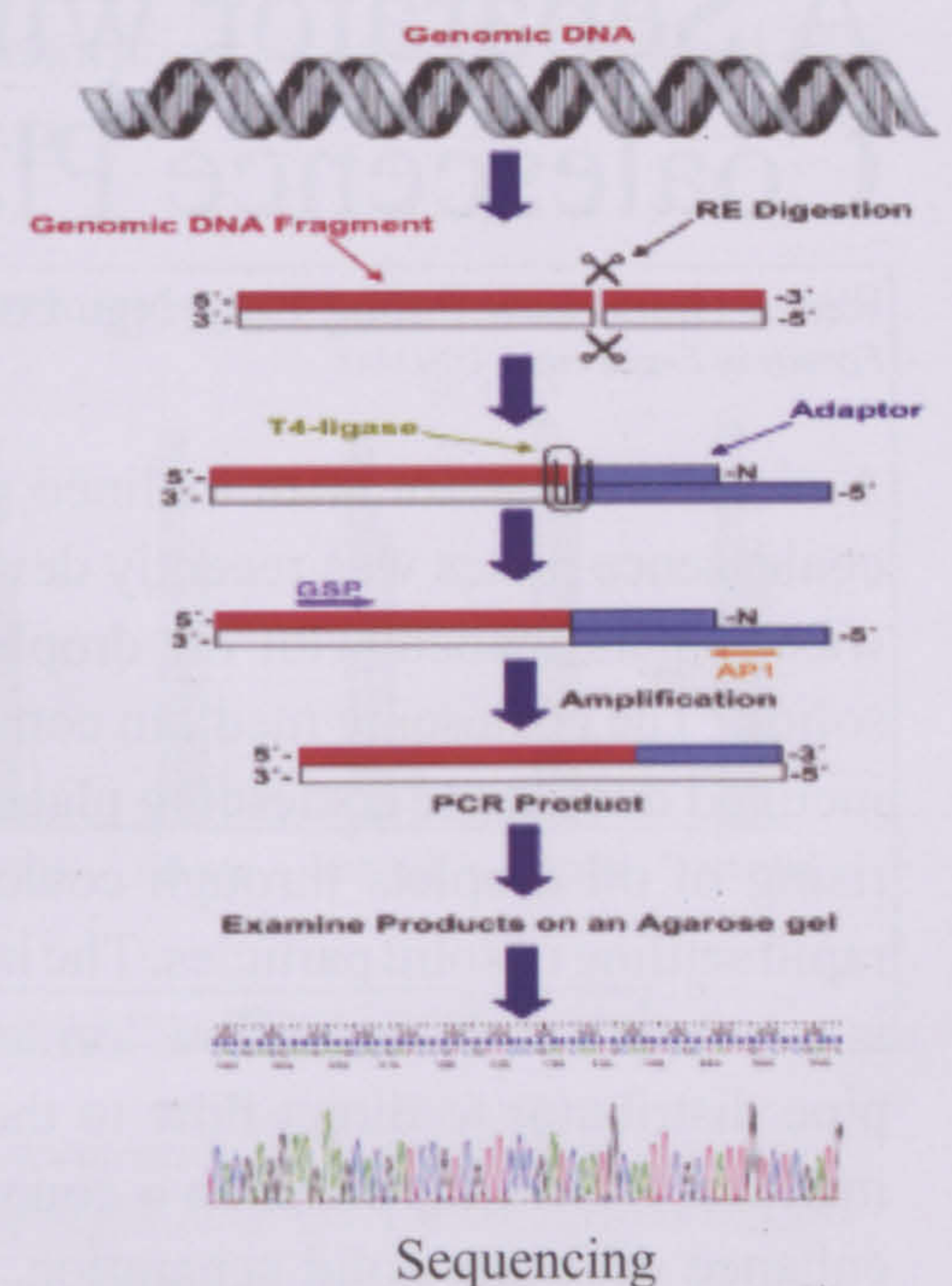
The research, funded by the Ministry of Higher Education, employed a reverse genetic approach of genome walking on the *sxt* genes cluster. The team has successfully obtained the first complete *sxt* gene encoding O-carbamoyltransferase, *sxtI*, in the dinoflagellate *Alexandrium minutum*. Effort in characterizing the whole *sxt* genes cluster of this toxic dinoflagellate is continuing. The genetic information of STX biosynthesis provides further insights into toxin bioconversions, molecular function, and evolutionary history, which, in future, would be valuable for genetic manipulation for toxin removal from the contaminated shellfish or water supplies.



Structure modeling of *sxtI*



Parent structure of saxitoxin (STX)

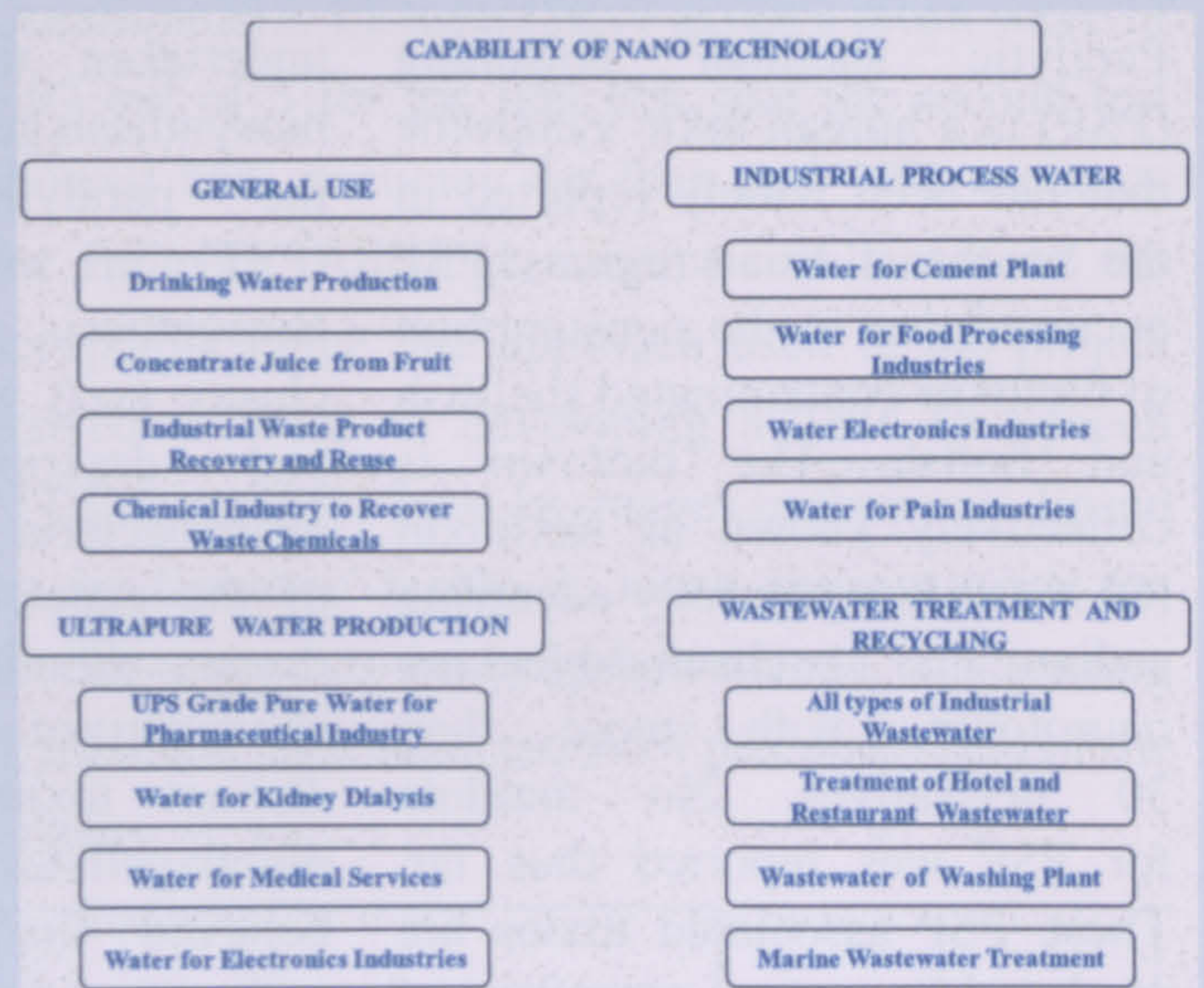


PRODUCT & TECHNOLOGY TRANSFER

Nanotechnology for Wastewater Treatment

Researchers: M. Shahidul Islam, Chin Hon Wui
 Faculty of Engineering, UNIMAS

Nanotechnology is found to be very effective on industrial wastewater treatment. The process parameter's pH, feed pressure and operating time have significant impact on treatment performance. Feed water pH creates an electrostatic force on membrane surface which plays a vital role in the removal process. Operating time contributes to the development of resistance to permeate water flux by forming cake-layer of dissolved solids on the membrane surface. Feed pressure contributes to increase the permeate flux by creating turbulence in main feed stream of membrane channels. To control all the dynamic factors is the main challenge in optimising the removal of hazardous dissolved solids from industrial wastewater.



Results and Discussion – It can be seen from the figures that wastewater pH, feed pressure and plant operating time contributed to increase the Nano Filter Membrane (NFM) performance by enhancing removal rate of hazardous dissolved solids. The experiment showed that NFM has potential to remove hazardous solutes from industrial wastewater.

A Separator with Inclined Parallel Dual-Angle Coalescence Plates

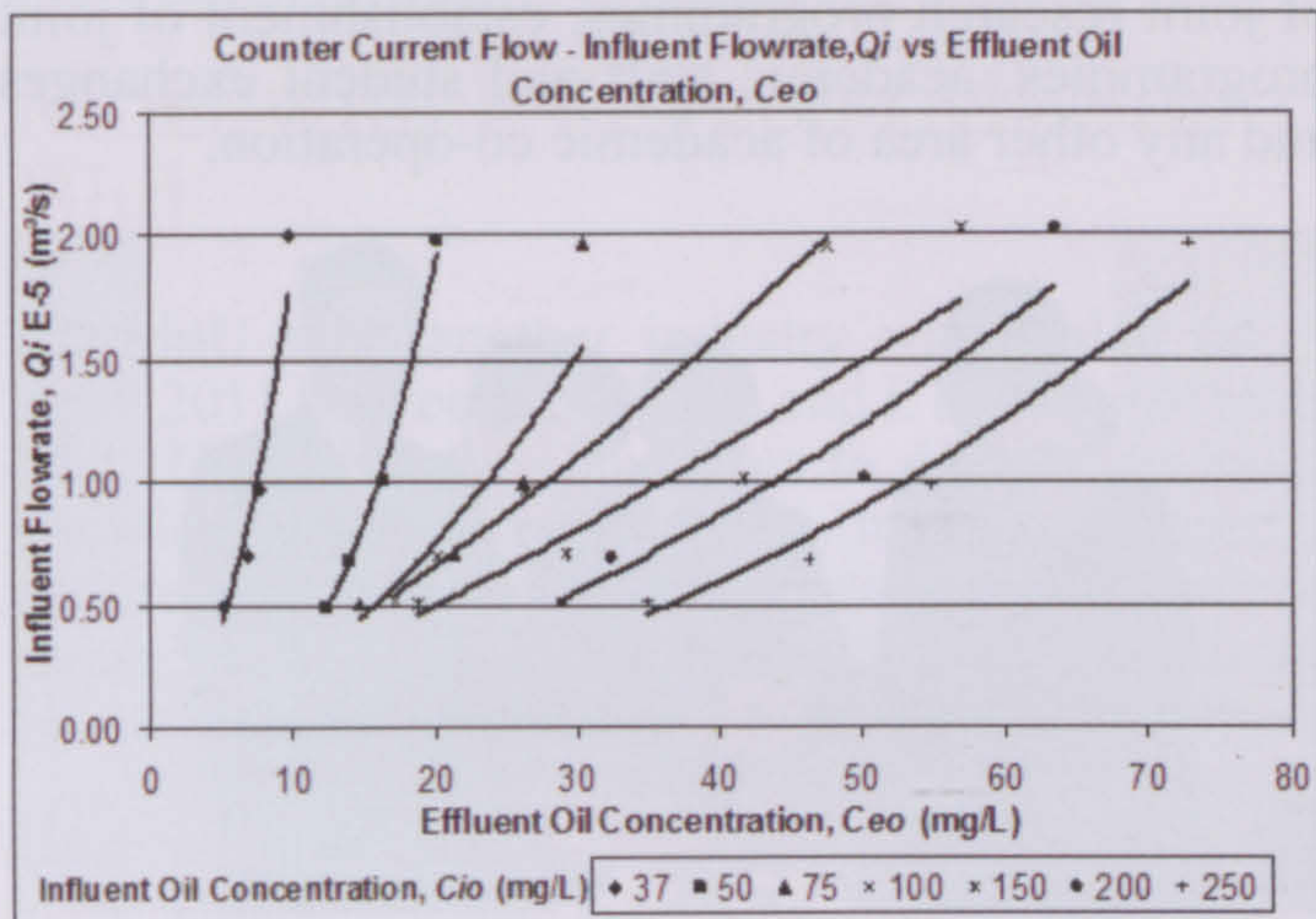
Researchers: Law Puong Ling, Ngu Lock Hei, Awangku Abdul Rahman, Wong Kien Kuok
 Faculty of Engineering, UNIMAS

A circular separator with inclined parallel dual-angle coalescence plates was recently developed for treating wastewaters loaded with oil droplets and suspended solids. The coalescing medium consists of 11 layers of inclined dual-angle coalescing plates to promote faster rising of oil droplets through coalescing process and rapid settling of solid particles. The inlet of the separator is equipped with an upflow center-feed perforated-pipe distributor to direct flow to the series of parallel inclined coalescing plates in a counter-current flow to enhance oil-water-solid separation. It was found that

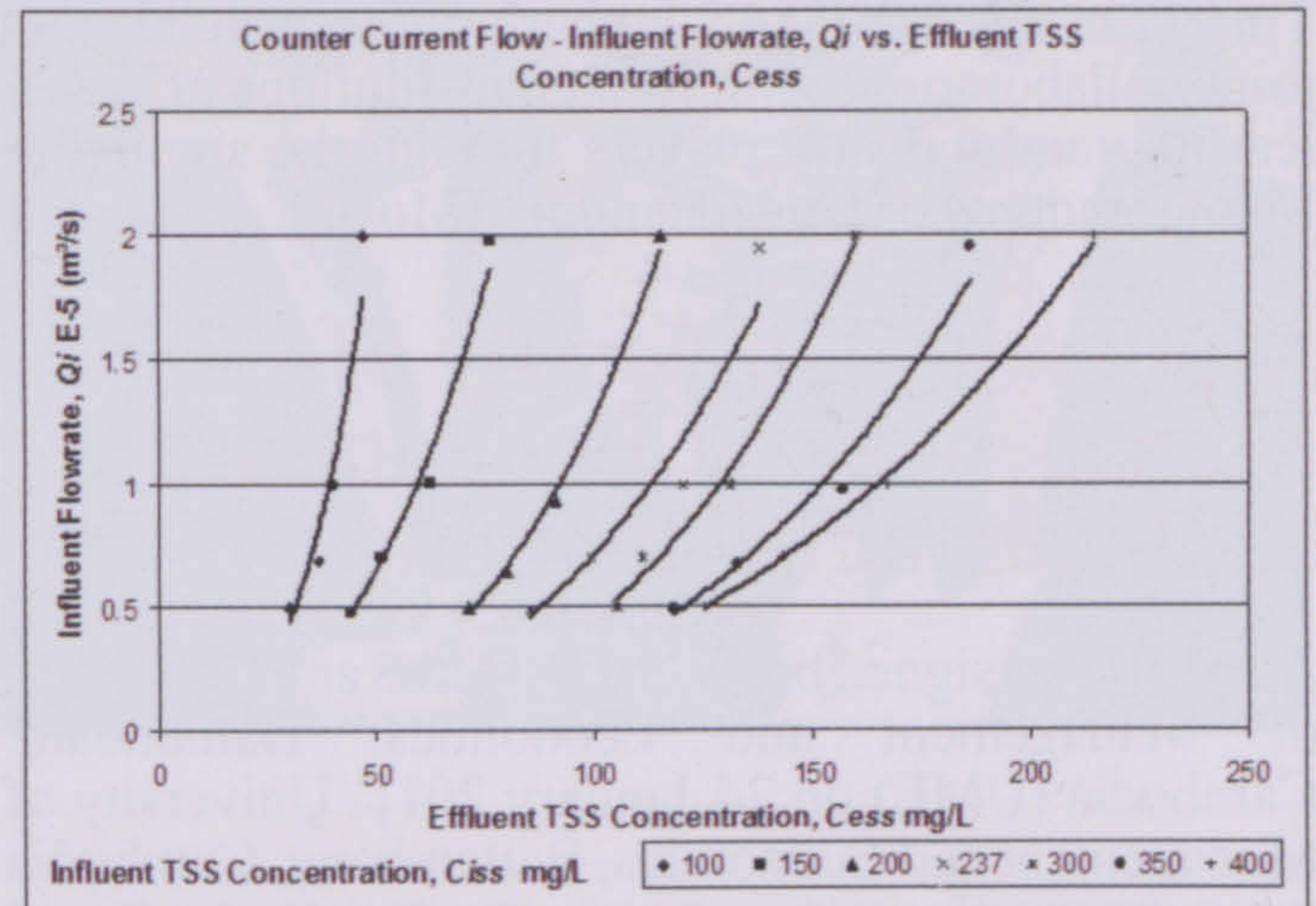
the separator with dual-angle coalescence plates gave approximately 22.67 % higher removal of total suspended solids (TSS) as compared to a typical circular separator without coalescing medium. The oil and TSS levels contained in the effluent were found to decrease with a decrease in influent flowrate, Q_i and an increase in retention time, t . The required flowrates of the separator needed to achieve effluent oil and TSS concentrations of 10 mg/L and 50 mg/L, respectively could be represented by $Q_{o10} \times 10^{-5} = -0.0015C_{i0} + 0.352$ and $Q_{ss50} \times 10^{-5} = 1.0 \times$

$10^6 C_{iss}^{-2.9576}$. The smallest particle size that can be removed by the separator, d can be predicted using both the power equation, $d = 3.2132 (Q_i \times 10^{-5})^{0.744}$ ($R^2 = 0.9898$) and polynomial equation, $d = 2.1749(Q_i$

$\times 10^{-5}) + 0.956$ ($R^2 = 0.9805$). The smallest removable particle size (with specific gravity of approximately 2.65) was found to be 4.87 μm .



Influent Flowrates/Oils Concentration vs Effluent Oil Concentration



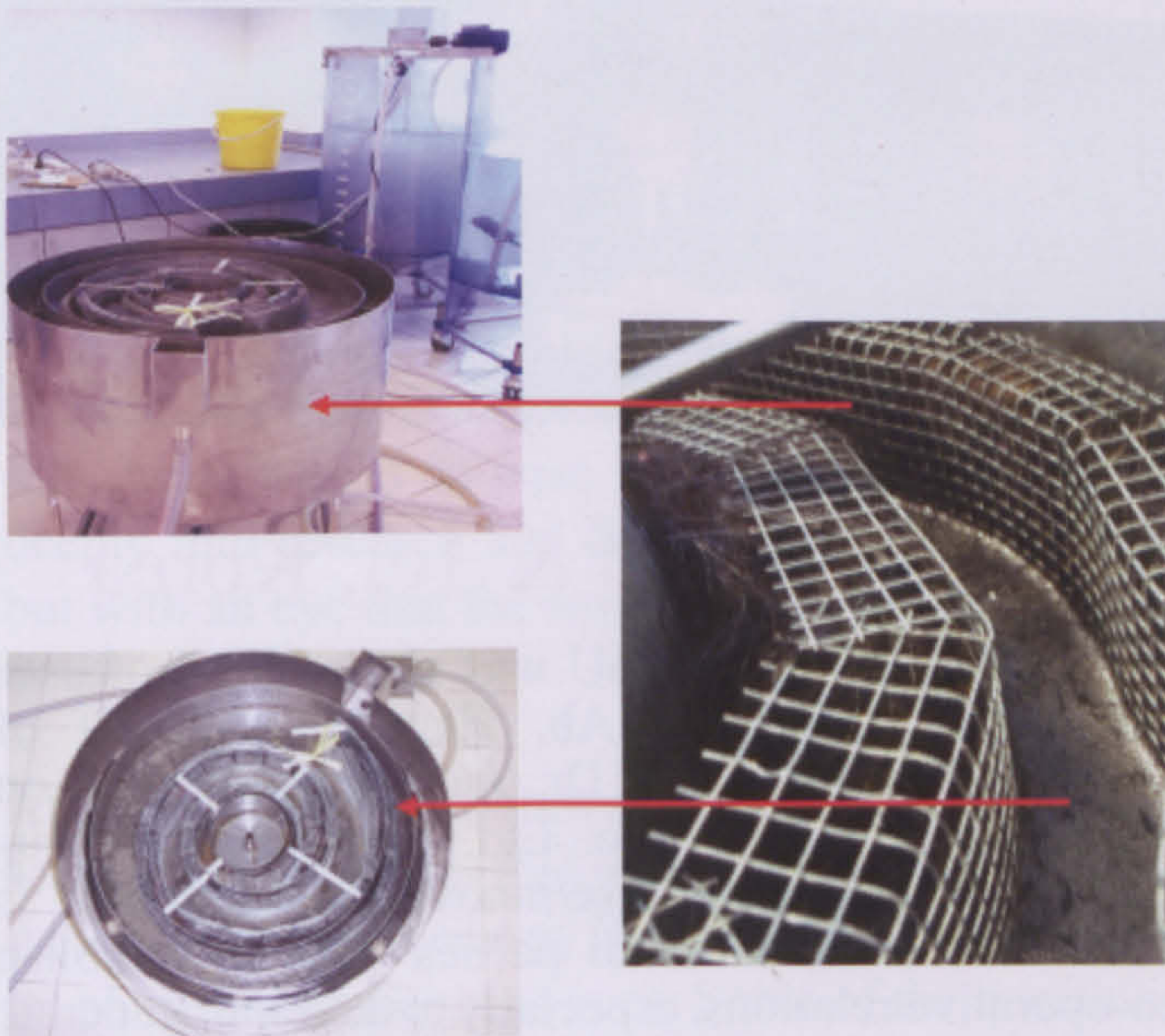
Effluent TSS vs Flowrates/Influent TSS

A System for Removal of Immiscible Fluids

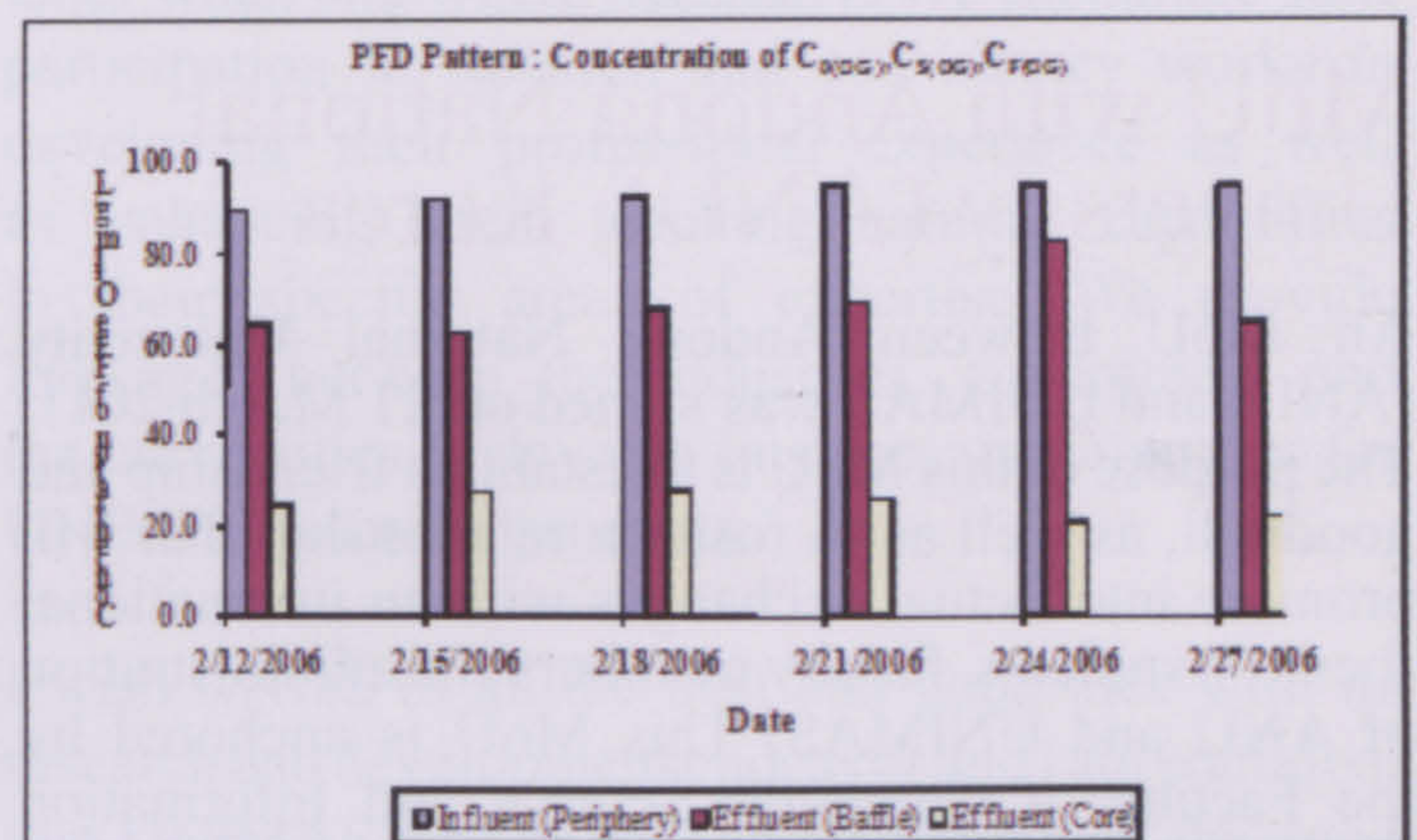
Researchers: Oon Yin Wee, Law Puong Ling, Awangku Abdul Rahman
Faculty of Engineering, UNIMAS

The amount of Oil and Grease (O&G) reductions Peripheral-Feed Down Flow pattern were 24.4 mg/L (26.2%) reduction at Periphery-Baffle Zone, and 44.2 mg/L (47.3%) reduction at Baffle-Core Zone. This gives an overall O&G removal efficiency of approximately 73.5%. The operation involves movement of fluid in spiral plane with rapid

decreasing radius and continual turning and reflection of flow. This specific spiral movement maximises the frequency of collision of oil droplets onto the hair block surfaces, thus encouraging oil droplet adsorption to take place while minimising clogging by providing sufficient gap in between both the hair block sides along the movement path, whereby the spacing of the gap is proportional to spiral path. This promotes more adsorption occurrences between hair blocks and oil drops.



Hair-Based Spiral Filter for Removal of O&G



Influent Oil Concentration of Periphery Weir Zone C_o (O&G), Effluent of Baffle Zone C_s (O&G), Effluent of Core Zone C_F (O&G)

NETWORKING

This year saw UNIMAS embarking on a number of joint-collaborations with foreign institutions of higher learning and industry players through the signing of Memorandums of Understanding (MoUs).

MoU with University of Management & Economics, Battambang, Cambodia

An MoU was signed between UNIMAS and University of Management and Economics, Battambang Cambodia (UME) on 24 January 2011. University of Management and Economics, Battambang, Cambodia is a private university recognised officially by Royal Government under the sub-decree No.25 dated 7 March 2006, Kingdom of Cambodia. University of Management and Economics, Battambang, Cambodia is committed to providing high standards of education in a wide range of fields. This MoU will cover co-operation in the area of student exchange, academic and non-academic staff exchange, collaboration in research project, organization of joint activities, joint consultancies, joint programmes of studies and exchange of academic intellectual properties.



MoU with Andong National University (ANU), Korea

An MoU between Andong National University (ANU) and UNIMAS was signed on 21 March 2011. The purpose of this MoU is to establish friendship and goodwill, as well as to foster a relationship that will promote intellectual exchanges with an international focus on students, faculty members and administration of ANU and UNIMAS. This MoU is anchored by the Faculty of Computer Science and Information Technology. In an effort to internationalise the lifelong learning process, both parties will participate in a formal exchange that seeks to promote an academic exchange and to provide collaboration in research effort. Under a five-year MoU, both institutions agreed to cooperate on activities which include organisation

of joint research programmes, establishment of joint programmes, academic staff and student exchanges and any other area of academic co-operation.



MoU with Aizo Digital Works Sdn Bhd

An MoU with industry was signed on 28 February 2011, between UNIMAS and Aizo Digital Works Sdn. Bhd., a company based in Cyberjaya. This partnership enables UNIMAS students to explore technology-advanced system by tapping into the company's animation and graphic technologies as well as for students to embark on real animation industry and to be on par with western animation analysis. Also present at the signing ceremony were Housing and Urban Development Minister Datuk Amar Abang Johari Tun Openg and Science, Technology and Innovation Deputy Minister Datuk Haji Fadillah Yusof.



MoU with Man & Tel, Korea

On 20 May 2011, an MoU was signed by Professor Datuk Dr. Khairuddin Ab. Hamid on behalf of UNIMAS and Professor Dr. Jung Kwang-Wook on behalf of Man & Tel Co. Ltd. The business focus of this venture-enterprise/innovation company is educational trainers. Both parties wish to establish co-operative relations, especially to develop academic and technical interchange through mutual assistance in the areas of education and research particularly in areas that could lead to commercialisation.



MoU with ETI Tech (M) Sdn Bhd

An MoU with another industry was sealed on 11 April 2011 between UNIMAS and ETI Tech (M) Sdn. Bhd. This alliance is an effort to develop technical knowledge and technology transfer, expertise and research co-operation, as well as to promote mutual understanding for the joint development and promotion of GenSet Hybrid System for rural schools

in Sarawak. With this partnership, UNIMAS together with ETI Tech (M) Sdn. Bhd. aim to contribute positively towards development in the state by providing a speedy and cost-effective solution to the problems of electrification of rural schools.



STAKEHOLDER SPEAKS

Research Must Meet Reality



Dato' Peter Minos

Research and development (R&D), especially for a public university, is necessary and essential as well as useful and fruitful. Apart from knowledge generation, output should also be actualized into commercial or industrial use. It is wise for UNIMAS to venture deeply into research and development, in any field, but with an eye that the results or findings are useful to the society.

At this point in time, Sarawak has a few key economic sectors and industries that it is focusing on, including the use of water for energy (Bakun Dam, for instance), oil palm and timber resources. Some of the questions raised are likely to focus on what UNIMAS can

do that will help Sarawak to benefit from the three income generating sectors. Research and development is vital for the development of Sarawak which will see the provisions of jobs and incomes as crucial to its progress.

As Chairman of UNIMAS Holdings Sdn. Bhd., we support UNIMAS on any research that will benefit Sarawak and its people and society as a whole. UNIMAS Holdings Sdn. Bhd. is duty-bound to work together with UNIMAS, complementing the latter when and where necessary. We encourage staff participation in research and consultancy works in developing their professional experience as well as enhancing their teaching-learning capabilities in their specific areas of expertise. We provide linkages between the industries, government and the universities to develop business opportunities for UNIMAS research products.

I wish UNIMAS all the best and good luck with its research and development endeavor and I am confident that UNIMAS will be able to contribute for the good of the society. Sarawak and its people will look up to its public university with gratitude as a pioneer in research, development and innovation.

RESEARCH & CONSULTANCY

UNIMAS hosts WHO informal consultation on malaria in humans due to *Plasmodium knowlesi*, a monkey malaria parasite

The World Health Organization (WHO) Western Pacific Regional Office convened an informal consultation, from 22-24 February 2011 at UNIMAS, on malaria in humans due to *Plasmodium knowlesi*. This parasite normally associated with monkeys, was discovered in a large number of humans in Sarawak in 2004. Human cases of *knowlesi* malaria have since been found in many countries in Southeast Asia, resulting in the recognition of *P. knowlesi* as the fifth species of *Plasmodium* causing human malaria. The objective of the consultancy was to bring together researchers, epidemiologists, public health experts and

representatives of the ministries of health of countries, with confirmed or possible human *P. knowlesi*

forward. International experts and delegates from USA, Malaysia, Thailand, Myanmar, Singapore, Vietnam, Philippines, Cambodia, Japan, United Kingdom, Australia, Brunei and Indonesia attended the meeting. It was held at UNIMAS in recognition of the pioneering research on *P. knowlesi* malaria conducted at the Malaria Research Centre, UNIMAS. The malaria research team in UNIMAS made the original discovery of a large number of monkey malaria cases in humans in Sarawak and continue to lead the field in providing clinical, pathophysiological and epidemiological descriptions on *knowlesi* malaria.



infections, to discuss public health implications of *knowlesi* malaria in the region and to define the way

Mobile Innovation Village (MiV) for Serasot Village: A UNIMAS, Maxis and Ericsson Collaboration

Mobile Innovation Village (MiV) is an initiative led by the Malaysian Communication and Multimedia Commission (MCMC) in partnership with Maxis and Ericsson Malaysia. The MiV aims to converge technologies in remote and rural communities to provide connectivity and improve socio-economy through capacity building of community entrepreneurs in the areas of tourism, business, communication, education, and health. These activities are targeted at the Community Broadband Centres (CBC). At present, there are more than 100 CBCs all over Malaysia.

Given the success of bridging-the-digital-divide projects such as eBario

and its replications in other sites in Sabah and Sarawak, UNIMAS, through the Centre of Excellence for Rural Informatics (CoERI), at the newly-established Institute of Social Informatics and Technological Innovations (ISITI), was approached by Maxis and Ericsson, to collaborate on the MiV at the CBC in Kampung Serasot, Bau. Three main application foci were identified, i.e. Learning and Education, Remote Health Monitoring and Group Communication.

The findings from this collaborative study will form the basis of a model and potential framework for replication to other CBCs. In addition, the study will identify opportunities and innovative

applications of technologies applied in these indigenous social contexts, taking into account issues of community participation, engagement and sustainability in rural areas. All this will contribute to the understanding and refinement of practical approaches in meeting the needs of these rural communities and bridging the digital divide.



SEMINARS & CONFERENCES

3rd International Conference on Applied and Creative Arts (ICACA 2011)

The 3rd International Conference on Applied and Creative Arts (ICACA 2011) has once again emerged as an important flagship conference of the Faculty of Applied and Creative Arts (FACA) activities. This year's theme was "Beyond Boundaries" and was held on the 6 and 7 of July 2011, at UNIMAS. This conference was co-sponsored by Petrolia Nasional Berhad (PETRONAS). Participants were from Malaysia and abroad, namely, Taiwan, Korea, Indonesia and Canada. Keynote addresses were delivered by Prof Dr Mohamed Hatta Azad Khan, a well known Performing Arts and Film scholar, and by Prof Dr Tracy Bhamra, a Design scholar and founder of sustainable design network. ICACA 2011 received 87 abstracts from scholars all over the globe, of which only 50 were selected to be presented in its two-day conference.

7th International Conference on IT in Asia (CITA2011)

The Faculty of Computer Science and Information Technology (FCSIT) recently organised the 7th International Conference on IT in Asia (CITA2011) at the Hilton Kuching Hotel, Kuching, Sarawak from 12-17 July 2011. Initiated by the faculty twelve years ago, it has now become a leading conference in the region that reflects the increasing focus on issues concerning information and communication technologies in developing countries. The theme for its 7th run was "Emerging Convergences and Singularity of Forms" bringing to the fore the rich blending of technologies that has and will change every aspect of our lives. A hundred and seventeen (117) submissions were received from 13 countries and only 58 papers were accepted. Also, CITA2011 is proud to have Professor Bebo White of Stanford University, USA and Professor Leon Sterling of Swinburne University of Technology, Australia as keynote speakers. CITA 2011 also held eight workshops prior to the conference, and was collocated with the International Workshop on Internationalisation of Products and Systems (IWIPS2011).



10th International Workshop on Internationalisation of Products and Systems (IWIPS2011)

The 10th International Workshop on Internationalisation of Products and Systems (IWIPS2011) was jointly organised by Product and System Internationalisation Inc. (P&SI), the Faculty of Computer Science and Information Technology, and the Institute of Social Informatics and Technological Innovations, UNIMAS. Collocated with CITA 2011, IWIPS 2011 was held from 12-14 July 2011. Also, this year was the first time IWIPS was held outside Europe and North America. This year's theme "The New Silk Route: Eastern Product and Services, Western and Global Markets" was also chosen because of its venue in Asia, where new emerging economies have created new (fast growing) markets; markets which designers know very little about. Attendees included participants from China, Denmark, India, Pakistan, Germany, Namibia, USA, United Kingdom and Malaysia. IWIPS 2011 was supported by the Human Factors and Ergonomics Society Malaysia, and sponsored by Google Inc. USA, UX Alliance USA, YUJ Designs India, Foolproof UK, Human Factors International Asia, and the Sarawak Convention Bureau.

9th Malaysian Genetics Congress 2011

The 9th Malaysian Genetics Congress themed "Appreciating the richness of nature through genetics" will be held on 28-30 September 2011 at Pullman Hotel, Kuching, Sarawak. This Congress will feature the 9th Mendel Lecture to be delivered by an invited scientist renowned in the field of rice genetics, Gurdev S. Khush. The congress is jointly-organised by the Faculty of Resource Science & Technology and Persatuan Genetik Malaysia.

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