

Anugerah Personaliti Pelancongan Langkawi 2015

by Mohd Khairul Zain bin Ismail



Photo By BERNAMA

Anugerah Personaliti Pelancongan Langkawi 2015 telah disampaikan oleh YAB Dato' Sri Mohd. Najib bin Tun Haji Abdul Razak.

YBhg. Prof. Emeritus Dato' Dr. Ibrahim Komoo, Pengerusi Pusat Kajian Bencana Asia Tenggara (SEADPRI-UKM) telah menerima Anugerah Personaliti Pelancongan pada majlis penyampaian Anugerah Pelancongan Antarabangsa Langkawi (LITA) 2015 pada 18 Disember 2015 di Langkawi International Convention Centre (LIICC).

Beliau menerima anugerah daripada Perdana Menteri Malaysia, YAB Dato' Sri Mohd. Najib bin Tun Haji Abdul Razak sebagai mengiktiraf sumbangan beliau ke arah mempromosi pelancongan mampan di Langkawi sehingga menjadikan pulau itu sebagai geopark pertama diiktiraf oleh UNESCO di Asia Tenggara.

Tahniah dan syabas kepada Prof. Emeritus Dato' Dr. Ibrahim Komoo!



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Respons SEADPRI-UKM Terhadap Gempabumi Sabah 2015 SEADPRI-UKM Response to 2015 Sabah Earthquake



Longgokan debris di hilir Sungai Liwagu akibat hujan berterusan selama dua hari. (Gambar oleh Ibrahim Komoo)

Sekumpulan pakar geohazard dari UKM dan UMS telah melakukan pemerhatian ringkas di sekitar Gunung Kinabalu pada 22-24 Jun 2015. Perhatian telah diberikan kepada menilai kesan dan kejadian gegaran dan jatuhnya batuan, aliran debris dan banjir akibat fenomena gempa bumi besar dan gempa susulan yang berlaku beberapa hari sejak 5-22 Jun 2015.

Salah satu "Donkey Ears" telah terpecah kepada separuh dan jatuh ke dalam "Low Gully". Saiz blok yang jatuh dianggarkan berukuran (10x5x30m = 1500 meter padu) dan kini telah merubah bentuk muka bumi Gunung Kinabalu selama-lamanya. Dianggarkan sekitar 14 juta meter padu batu telah runtuh, dan beratnya menyamai dengan 21 juta tan, telah disepitkan ke dalam lembah sungai, iaitu 'cerun rehat' di antara cerun curam dan sederhana cerun / tanjakan.

Hujan selama dua hari telah mencetuskan pembetulan aliran debris pada 13 Jun 2015 di sepanjang sungai di hulu Gunung Kinabalu, terutama Sungai Liwagu dan Sungai Kadamaian.

Banjir mencapai 20 meter di atas dasar sungai (kira-kira 3 meter di atas dataran banjir) - dan telah merosakkan akses jalan raya dan jambatan untuk Mesilau Resort. Timbunan batu dan kayu tersekat di dasar sungai dan mencetekkan tebing sungai.

Antara cadangan yang disyorkan adalah untuk menjalankan kajian terperinci mengenai fenomena gempa bumi baru-baru ini, bagi memahami sebab-sebab, mekanisme dan kesan jangka panjang. Satu kajian khas mengenai kestabilan batuan cerun di sepanjang Gunung Kinabalu dan laluan pendaki dan kajian secara besar-besaran tanah runtuh di beberapa kawasan yang telah dikenal pasti, khususnya di Kundasang, dan kawasan-kawasan lain di seluruh Ranau dan Gunung Kinabalu perlu diaktifkan semula.

A group of geohazard specialists from UKM and UMS has done a quick observation around Mount Kinabalu on 22 to 24 June 2015. The attention was given to assessing the impact and incidence of tremors and rockfalls, debris flows and floods as a result of the phenomenon of major earthquakes and aftershocks that occurred over the past 5 to 22 June 2015.

Kinabalu, especially Liwagu River and Kadamaian River.

Floods reaches 20 meters above the river bed (about 3m above the floodplain) - damaged to access road and bridge to Mesilau Resort. Pile of rocks and timbers blocked the riverbed and shallowed the riverbanks.

One of Donkey Ears broken in half and fell into Low's Gully. The size of the falling blocks estimated (10x5x30m = 1,500 cubic meters) and has now changed Mount Kinabalu landform forever. Estimated around 14 million cubic meters of rock collapsed, the equivalent weight of 21 million tonnes, has been deposited in the river valley in the 'slope break' between past steep slopes and medium steep slopes / ramps.

Among the recommendation recommended was to conduct a detailed study on recent earthquake phenomenon in order to understand the causes, mechanisms and long-term impact. A special study of rock slope stability along the Mount Kinabalu and climber routes and a study on a large scale of landslide in a number of areas that have been identified, particularly in Kundasang, and other areas around Ranau and Mount Kinabalu should be reactivated.

Rain for two days has triggered the creation of the Debris Flow on June 13, 2015 along the upstream river of Mount

PROF. EMERITUS DATO' DR. IBRAHIM KOMOO
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Climatic Hazards Programme

Future Cities: Science to Action for Building Resilience of Urban Communities to Climate Induced Physical Hazards

by Prof. Dr. Joy Jacqueline Pereira & Lord Julian Hunt

The Newton-Ungku Omar Fund in Malaysia involves the British Council as one of several UK delivery partners working with the Higher Education International Unit and in partnership with the Malaysian Industry-Government Group for High Technology (MIGHT) as part of the Science to Action (S2A) initiative undertaken by the Government of Malaysia. Unveiled by the Prime Minister in November 2013, the S2A has provided a new impetus for MIGHT in its effort to ensure a wider reception of Science, Technology and Innovation (STI) by its key stakeholders in the nation - the industry, the people and the policymakers. Under this initiative, the focus will be on growth through strategic partnerships, technology acquisition and nurturing, capacity building as well as strengthening of growth through policy interventions and flagship programmes. The Newton-Ungku Omar Fund facilitates the aspirations of the S2A with particular focus on climate change and urbanization. Cities in Malaysia are increasingly exposed to physical hazards such as flash-floods, landslides, subsidence, strong winds and air pollution. Losses are not adequately estimated but the majority impacted are poor and vulnerable populations. Climate change and expansion of cities will lead to escalation in flooding and landslides. Physical scientists from multi-disciplinary backgrounds need to work together to deliver integrated approaches for multi-hazard assessment and delineate areas susceptible to urban hazards. Climate change and expansion of settlements is expected to escalate climate induced hazards such as flooding, landslides, typhoons, etc. both in its extent and frequency as well as its occurrence in new areas within urban centres. A first step towards adaptation to future climate change is reducing vulnerability and exposure to present climate variability. Science-based products and services play a critical role in enhancing the capability of governments and the private sector in managing risk information and financing.

Led by Professor Lord Julian Hunt of the Malaysian Commonwealth Studies Centre (MCSC), Cambridge and Professor Joy Jacqueline Pereira of Universiti Kebangsaan Malaysia's Southeast Asia Disaster Prevention Research Initiative (SEADPRI-UKM), six institutions are collaborating in a "pump-priming" initiative supported by the Institutional Links Programme of the Newton-Ungku Omar Fund administered by the British Council and MIGHT. The initiative is entitled "Future Cities: Science to Action for Building Resilience of Urban Communities to Climate Induced Physical Hazards". In addition to MCSC and SEADPRI-UKM, the partner institutions are University of Malaya's Geology Department, University College London, IUGS Commission on Geoscience for Environmental Management (IUGS-GEM) and Geological Society of Malaysia.

The joint Malaysia-UK initiative aims to bring together scientists working on various aspects of physical hazards and risks in a changing climate with a particular emphasis on large urban areas. The one-year initiative commenced on 1 April 2015 with the following objectives:-

- Provide a platform for researchers and practitioners working on physical hazards in Malaysia to link with counterparts in the UK;
- Build capacity to innovate, advance practices, scientific tools and techniques relevant to the country; and
- Lay the foundation for delivering science based products and services through proposals that will be developed within the initiative.

Future work will be designed to enhance capacity to conduct multi-hazard assessments and identify areas susceptible to floods, landslides and subsidence within cities; advance modelling of climate extremes and atmospheric hazards; and promote professional development. The emphasis will be to develop effective products and services for reducing risks at the neighbourhood level, focusing on the bottom 40% income group of Malaysians. The ultimate goal is to deliver new innovative business models for disaster risk reduction, driven by consortiums with multidisciplinary and multi-sector representation. This will directly support the National Science to Action Programme and the National Policy on Climate Change to promote societal well-being and climate resilient development.

The MCSC's long standing linkage to the Commonwealth has facilitated the establishment of the Asian Network on Climate Science and Technology (ANCST), based in Malaysia and coordinated by SEADPRI-UKM. The Network serves as a conduit to facilitate exchange knowledge and expertise. The initiative funded by Newton-Ungku Omar Fund has flourished the linkage between UK and Malaysia by involving additional partners working on climate induced physical hazards. More importantly project partners in Malaysia and the UK have been able to make use of the regional linkages that have already been established through ANCST, to engage with the wider research and innovation community in Asia. An example is the Workshop on Climate Change and Disaster Resilience – Post Sendai 2015, Manila, Philippines on 16-17 October 2015 organized by ANCST and partners, where project members from Malaysia and the UK shared their expertise. The event was also used to introduce the Science to Action Initiative of Malaysia to an Asian audience.

The initiative has also enabled a series of visits between researchers in Malaysia and the UK to lay the foundation for future work. Proposals have been jointly developed to seek funding for development of science based products and services for multi-hazard assessments to address the risk of climate change in urban areas. In addition, field visits and other capacity building activities have also been implemented periodically in both countries to enhance capacity of researchers and practitioners working on physical hazards. Plans are underway to conduct further joint Malaysian-UK activities to enhance capacity in the Asian region.

Activities

Professor Joy Jacqueline Pereira Appointed as Vice-Chair of Working Group II: Impacts, Adaptation and Vulnerability, the Intergovernmental Panel on Climate Change (IPCC)

by Mohd Khairul Zain bin Ismail

The Intergovernmental Panel on Climate Change (IPCC), at its 42nd Session (5-8 October 2015, Dubrovnik, Croatia), elected Prof. Dr. Joy Jacqueline Pereira as a Member of the IPCC Bureau (as Vice-chair of Working Group II) for the duration of the sixth assessment cycle, which is for six to seven years commencing 9 October 2015.

As a member of the IPCC Bureau, the role of Prof. Dr. Joy Jacqueline Pereira will be to provide guidance to the Panel on the scientific and technical aspects of its work, to advise on related management and strategic issues, and to take decisions on specific issues within its mandate, in accordance with the Principles Governing IPCC Work.

Workshop on New Science and Business Developments for Managing Climate Risks 5 November 2015, the Royal Society, London

by Prof. Dr. Joy Jacqueline Pereira



Dr. Rowan Douglas of Willis, Professor Lord Julian Hunt of University of Cambridge, Dr. Richard Miller of Innovate UK and Professor Joy Jacqueline Pereira of SEADPRI-UKM led the discussion on Science, Business and Policy at the Workshop in the Royal Society on 5 November 2015.

The Workshop on New Science and Business Developments for Managing Climate Risks on 5 November 2015 at the Royal Society, London convened by Professor Lord Julian Hunt and Professor Joy Pereira provided an opportunity for linking Malaysian and UK researchers and practitioners working on physical hazards. The workshop involved about 40 targeted participants from Malaysia and the UK, comprising scientists and representatives from the financial sector, particularly insurers and re-insurers. The workshop facilitated an appraisal of practices, scientific tools and techniques for managing urban risks in a changing climate and also highlighted needs and priorities of the financial sector for reducing exposure from such risks. Keynotes were delivered by Professor Tan Sri Zakri Abdul Hamid, Science Advisor to the Prime Minister of Malaysia and Professor Ian Boyd, Chief Scientist, Department for Environment, Food and Rural Affairs (Defra). The workshop findings are being disseminated to a wider audience to facilitate capacity building and spur the development of science-based products and services for decision-making in urban areas.

New Publication of 2015



SEADPRI Series No. 1: *Laying the Foundation for Enhancing Climate Change Adaptation in Southeast Asia* ISBN 978-967-5227-74-5

The SEADPRI Series is a periodic publication on science, technology and capacity building for disaster and climate resilience. The inaugural SEADPRI Series highlights the project on "Enhancing Local Level Climate Change Adaptation in Southeast Asia" (Phase 1) supported by the ASEAN-India Green Fund. The Inception Workshop for the project was held on 5-6 February 2015 in Bangi, Malaysia. The workshop was attended by about 30 participants, comprising representatives of the ASEAN Working Group on Climate Change (AWGCC) National Focal Points and National Partner Organisations who are primarily from universities and research institutes as well as partners from India.

Coffee Table Book: *Crystal Fortress, Gombak Selangor Quartz Ridge* ISBN 978-983-41318-9-0

In the early 20th century the quartz ridge was called the Klang Gates Ridge. This informal geographic name remained until the 1980s when the quartz ridge was then better known as the Klang Gates Quartz Ridge. On 24 June 2015 the Klang Gates Quartz Ridge was formally named the Gombak Selangor Quartz Ridge or Permatang Kuarza Gombak Selangor (PKGS) by the Selangor State government. This Coffee Table Book was published in collaboration with the cooperation of the Ampang Jaya Municipal Council (MPAJ), the Selayang Municipal Council (MPS), Selangor Department of Minerals and Geoscience (JMG), Selangor Forestry Department, Selangor Wildlife Department, Selangor Water Management Body (LUAS), SEADPRI-UKM, Forest Research Institute Malaysia (FRIM) and the Selangor Town and Country Planning Department (JPBD).



Activities

Consultation Workshop on “Local Level Needs and Priorities for Climate Change Adaptation” 14 September 2015, Danau Golf Club, UKM, Bangi

by Mohd Khairul Zain bin Ismail

The consultation workshop was an activity of the Project on Enhancing Climate Change Adaptation in Southeast Asia (Phase 1) funded by the ASEAN-India Green Fund, and implemented by Universiti Kebangsaan Malaysia's Southeast Asia Disaster Prevention Research Initiative (SEADPRI-UKM). The Workshop was organized by the Ministry of Natural Resources and Environment (NRE) and SEADPRI-UKM to discuss national strategies and challenges in addressing climate change adaptation and to identify three to five local level initiatives to be considered for funding by the ASEAN-India Green Fund under the ASEAN Regional Work Programme on Climate Change Adaptation.

The workshop was attended by about 30 participants, primarily from government agencies. The half-day programme comprised an introduction followed by lead presentations and a break-out session where the speakers and attendees were divided into four groups to discuss a specific topic each.

YBhg. Datuk Dr. Abdul Rahim bin Haji Nik, Deputy Secretary General (Environment) of the Ministry of Natural Resources and Environment officiated the workshop and called on participants to contribute effectively and leverage on existing initiatives to enhance local level climate change adaptation. The lead presentation commenced with an overview of climate resilient development in the 11th Malaysia Plan, covering mitigation, adaptation and disaster risk reduction (Mr Ahmad Kamal Bin Wasis, Economic Planning Unit). This was followed by four sector specific presentations highlighting priorities for health (Dr Daud Abdul Rahim, Ministry of Health), food security (Dato' Dr Mohamad Zabawi, MARDI), critical infrastructure (Ms Aiza Mahani Mozi, Ministry of Energy, Green Technology and Water), water and coastal regions (Dr Saim Suratman, National Hydraulic Research Institute of Malaysia), and biodiversity and forest (Dr Samsudin Musa, Forest Research Institute Malaysia).

Final Planning Workshop on Enhancing Climate Change Adaptation in Southeast Asia 14-15 October 2015, Hotel Jen Manila, Philippines

by Prof. Dr. Joy Jacqueline Pereira

The Final Planning Workshop on Enhancing Climate Change Adaptation in Southeast Asia was held in Hotel Jen Manila, Philippines, on 14-15 October 2015, with participants comprising government partners and science partners from ASEAN countries, as well as representatives of India's counterpart to the ASEAN Working Group on Climate Change (AWGCC) and the ASEAN Secretariat. This workshop was organized in collaboration with the ASEAN Secretariat, the Indian Institute of Science (IISc) Bengaluru, Asian Network on Climate Science and Technology (ANCST), Asia-Pacific Network for Global Change Research (APN), University of the Philippines Los Banos (UPLB), and University of the Philippines Diliman. The workshop was officiated by Professor Fernando C. Sanchez, Jr, Chancellor of University of The Philippines Los Banos (UPLB).

The workshop was organized as part of a programme listed under the activities of the Project on Enhancing Local Level Climate Change Adaptation in Southeast Asia (Phase 1), the first approved under the ASEAN-India Green Fund. The Project, implemented by Universiti Kebangsaan Malaysia's Southeast Asia Disaster Prevention Research Initiative (SEADPRI-UKM), has Professor Joy Jacqueline Pereira of SEADPRI-UKM as the Project Coordinator from the ASEAN side and Prof. N.H. Ravindranath from the Indian Institute of Science (IISc.), Bengaluru as the Project Coordinator from India. Activities of the Project in Phase I consisted of an inception workshop and a final planning workshop, with the needs assessment and scoping study in between. The inception workshop was held on 5-6 February 2015 in Bangi, Malaysia. The scoping study had been ongoing since the inception workshop and the preliminary findings were presented in the final planning workshop.

The output of the Final Planning Workshop will serve as input to developing the regional ASEAN-India work programme on climate change adaptation, particularly on the establishment of a network for the climate change adaptation or ASEANadapt. It will also contribute to the ASEAN strategic plan of action on post-2015 environmental cooperation to be developed and implemented in line with the ASEAN vision 2025 and the ASCC blueprint of 2025.

Geological Hazards Programme

Malaysia 2015: A Year of Floods, Earthquakes and Cascading Disasters

by Lim Choun Sian, Senior Research Officer



A debris flow occurred at KM52.4 of the Kuala Lumpur-Karak Expressway on 11 November 2015. Photo by NST.

In 2015, Malaysia was struck by a series of disasters from floods and earthquakes to mud and debris flows. In addition to the hydro-meteorological disasters making up the usual yearly major disaster list for Malaysia was a geophysical disaster. This was the moderate to strong earthquake that jolted Sabah, killing 18 peoples. There was also a technological hazard in mid-2015: the haze, an environmental disaster which engulfed the South East Asian countries for almost 3 months.

In January 2015, the spill-over from high intensity rainfall in December 2014 flooded many settlement areas of the Southeast Asian region, namely Thailand, Malaysia and Indonesia. Malaysia was hit the hardest with more than 500,000 evacuated; more than 100,000 people were affected in Indonesia, and several thousand in Thailand. Referred to as the big flood by Malaysians, it was a rare event where many buildings as high as two storeys were inundated. It was claimed that such devastating flooding occurred only once in a thousand years. The two-week long event affected areas such as the Sungai Kelantan, Pahang, Perak and Terengganu river basin, causing 25 deaths, while displacing more than 500,000. Damage to public infrastructure and utility was estimated at RM2.85 billion. The East Malaysian states of Sabah and Sarawak were not spared, with about 12,000 people reported being evacuated from flood-stricken areas.

Sabah and Sarawak are regions known to be prone to mild to medium earthquakes. On 5 June 2015, a strong earthquake of magnitude 6 Mw (or 6 on the Richter scale), followed by a few medium shocks, shook the Ranau and Mount Kinabalu areas. The incident claimed the lives of 18 trekkers and mountain guides. The rock avalanche after the earthquake hit the victims who were at that time climbing up to the 4100-m peak of Mt Kinabalu. Not many signs of earthquake damage were visible on the physical infrastructures on the plain. However, the tremors had loosened up huge amounts of rock, mountain forest substrate and soil at the higher elevation. Interment and heavy rains after the earthquake cascaded into another form of disaster. Large boulders along with forest logs and soil were brought down by the runoff in the form of debris and mud flow. It eroded more valley, snow-balling down to the foothill. Several settlements along the valley and river were damaged and dislocated due to this but thanks to swift emergency response, no lives were lost. The riverine fluvial environment was incapacitated as the massive debris of logs, rocks and mud polluted the water which was the source of potable water to 100,000 people in the area.

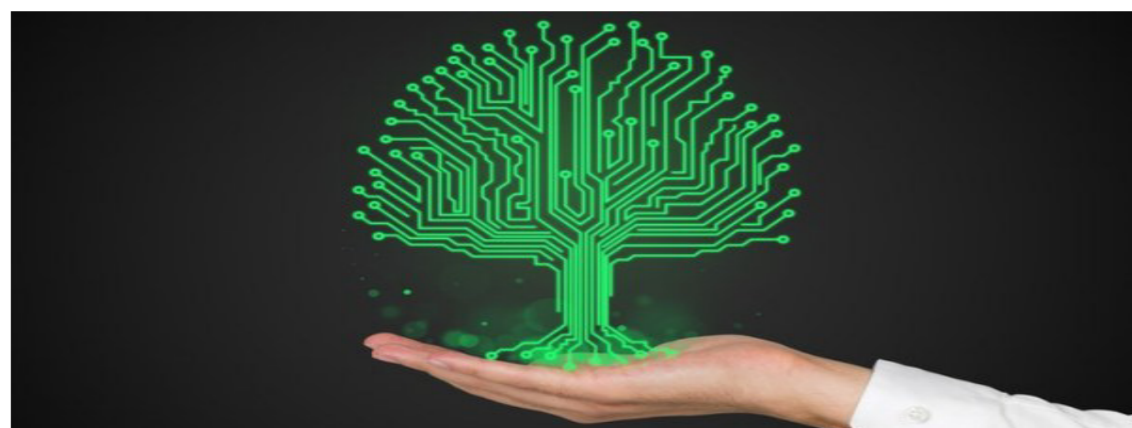
Towards the end of the year, in November 2015, a debris flow occurred at Km 52.4 of the Kuala Lumpur-Karak Expressway between Lentang and the Bukit Tinggi, Pahang and Gombak-Bentong old roads. The Lentang-Bukit Tinggi stretch of the expressway was closed to traffic, four passing cars were damaged but no injuries were incurred. The slope incident was a form of landslide of a hilly and sloping area affecting road users and motorists.

The year 2015 witnessed the prevalence of climate-induced, cascading and emerging complexity of disaster risks. The triggers were from extreme climatic events leading to the evolution of a disaster into several disaster types or impacts. It is vital to operationalize resilience in reducing disaster risk and prevention of disasters. Hence, it was very timely that the Third UN World Conference on Disaster Risk Reduction held in March 2015 in Sendai City, Miyagi Prefecture, Japan, adopted a new disaster risk reduction framework called the Sendai Framework. The successor to the Hyogo Framework for Action (HFA) 2005-2015, the Sendai Framework emphasized four strong points: the science and human aspects in understanding the disaster risk, strengthening disaster risk governance to manage disaster risk, investing in disaster risk reduction for resilience, and enhancing disaster preparedness for effective response.

Technological Hazards Programme

Synthetic Biology for Biosensor in Halocarbon Detection

by Dr. Tan Ling Ling, Research Fellow



Biosensors are powerful tools in synthetic biology for engineering metabolic pathways or controlling synthetic and native genetic circuits in bacteria. (Google Image)

A formal attachment to University of Cambridge for a collaborative research, particularly in the area of synthetic biology, was completed at the Institute of Biotechnology, Department of Chemical Engineering & Biotechnology under the supervision of Prof. Dr. Elizabeth (Lisa) A. H. Hall between March and May this year. The research attachment programme is in line with the objective of a collaborative research grant between Universiti Kebangsaan Malaysia and the University of Cambridge entitled Synthetic Biology for novel sensing devices in halocarbon pollutants monitoring in the atmosphere – fundamental and application studies.

Halogenated environmental pollutants are mostly chlorinated or brominated aliphatic alkanes and alkenes. These halocarbon compounds are prevalent components of hazardous wastes and landfill leachates due to their massive use both in the agricultural and industrial sectors. The marine environment is also identified as one of the most important natural sources of halocarbons, which is produced by macroalgae and phytoplankton in the ocean during an algal bloom event. The central role of halogenated species in environmental issues such as global warming and ozone depletion is well recognized. Furthermore, ingestion and inhalation of halogenated organic compounds can cause a range of adverse health effects including convulsions, coma and death.

Our current research carried out in UKM for halocarbon detection is based on the covalent immobilization of the native haloalkane dehalogenase enzyme (DhIA, E.C. 3.8.1.5, from *Xanthobacter autotrophicus* GJ10) on the succinimide-functionalized acrylic microspheres or membrane, and measured with both optical and electrochemical instruments. Co-immobilization of *Nitrosomonas europaea* bacterial cells and formaldehyde dehydrogenase enzymes in the polymer matrix is also carried out for amperometric determination of the halocarbon, whereby the *Nitrosomonas europaea* cell degrades the halocarbon compound to produce the formaldehyde organic dehalogenation product for subsequent enzymatic reaction with the immobilized formaldehyde dehydrogenase enzymes. In this case, we detect formaldehyde via reduction of NAD⁺ to NADH for indirect quantification of the halocarbon concentration.

Covalent binding, adsorption, cross-linking and entrapment of enzyme molecule within the polymer matrix may involve multiple-point attachment, loss of biomolecule activity, biomolecule leaking, random enzyme orientation and large diffusion barriers, which render biosensors to be unstable, have poor sensitivity, causing long response time. Moreover, the wild type DhIA enzyme is not specific for the degradation of a particular halocarbon; however, it is specific towards degradation of a range of aliphatic halocarbons containing one to four carbon atoms, where it catalyses the hydrolytic dehalogenation of halogenated aliphatic hydrocarbon, including chlorinated, brominated and iodinated compounds to produce the corresponding primary alcohol, halide ion and proton. In order to improve the bio-sensing properties, such as the sensitivity, selectivity, dynamic range and stability of the enzyme-based biosensor, accessibility to the enzyme active site can be enhanced via oriented immobilization of enzyme and appropriate mutation measure by utilizing a synthetic biology approach. This is used to test a design concept for a genetically engineered enzymatic functional device for rapid and specific determination of halogenated environmental pollutant.

It is proposed that the DhIA enzyme undergo a careful selection of residue region and mutation measure to increase the affinity for 1,2-dichloroethane (DCA), the most extensively used halocarbon species which has been largely released into the environment. Since the DhIA enzymatic reaction is accompanied by a pH change, we propose to detect the released proton for indirect quantification of the DCA concentration by means of UV-Vis spectrophotometry and potentiometry using a suitable immobilized chromoionophore or ionophore pH indicator in a solid support matrix, which can be a polymeric matrix. The analytical performance of this proof-of-concept system will be assessed in terms of dynamic linear response range, limit of detection (LOD), response time, long term stability, repeatability and reproducibility. Sensitivity and selectivity of the mutant enzyme-based biosensor towards DCA and some other aliphatic haloalkane will be determined and compared with its wild enzyme-based biosensor counterpart.

Activities

SEADPRI FORUM 2015: Sendai Framework for Disaster Risk Reduction – Implications for Urban Resilience, Private Sector and Science and Technology

21 August 2015, Puri Pujangga, UKM Bangi

by Mohd Khairul Zain bin Ismail



Prof. Rajib Shaw delivered his lecture during Forum SEADPRI 2015 on “The Sendai Framework for Disaster Risk Reduction: Implications for Urban Resilience, Private Sector and Science and Technology”. (Photo by Lim C.S.)

The SEADPRI Forum is an annual flagship event of the Southeast Asia Disaster Prevention Research Initiative of Universiti Kebangsaan Malaysia (SEADPRI-UKM). The Forum provides a platform for renowned speakers to share their insights on the latest issues of relevance to disaster prevention, risk reduction and management. The purpose is to foster understanding and strengthen linkages between researchers, practitioners and policy makers in thematic areas including vulnerability of communities, education and awareness, as well as governance for human security and sustainability.

SEADPRI held its seventh annual flagship event, SEADPRI-UKM Forum 2015, on 21 August 2015. It was jointly organized with the National Security Council, the Prime Minister's Department, Malaysian Industry-Government Group for High Technology (MIGHT) and the National Professors Council (MPN). The Forum hosted a lecture by Professor Rajib Shaw on “The Sendai Framework for Disaster Risk Reduction: Implications for Urban Resilience, Private Sector and Science and Technology”, chaired by Dr T. Kavintheran from MIGHT. The event was attended by about 70 participants comprising mainly researchers, policy-makers and practitioners from governmental agencies, academic and research institutions, the private sector, and NGOs.

Professor Shaw is Professor in the Graduate School of Global Environmental Studies of Kyoto University, Japan. He works closely with the local communities, NGOs, governments and international organizations, including the United Nations, especially in Asian countries. He is Chair of the United Nations Asia Regional Task Force for Urban Risk Reduction, President of Asian University Network of Environment and Disaster Management (AUEDM), and Co-lead of Asia Science Technology Stakeholder Group. His research interests include community-based disaster risk management, climate change adaptation, urban risk management, and disaster and environmental education. Professor Shaw has extensive publications in different journals, books and edited volumes, and is the editor of two book series on disaster risk reduction, published by Emerald and Springer publishers respectively.

The talk focused on The Sendai Framework for Disaster Risk Reduction (SFDRR) which was adopted in March 2015 at the Third World Conference on Disaster Risk Reduction (WCDRR) in Sendai, Japan. The 3rd WCDRR was one of the largest gatherings of disaster professionals and practitioners, and the framework laid out 15 years of future road maps and priority areas of disaster risk reduction. Urban resilience is going to be one of the key issues in future, especially in the Asian context, where gradual urbanization and increasing patterns of climatic hazards pose a significant threat. A comprehensive framework of climate related hazards on urban areas called Climate and Disaster Resilience Initiative (CDRI) was developed and applied to 36 cities in the Asia Pacific region. CDRI can be considered as a yardstick for city resilience and progress of the city's specific actions. Private sector and science and technology groups (researchers) have strong roles to play in implementing SFDRR. Private sector needs to focus on disaster issues as a core business, which is based on innovations and market research. Science and Technology groups also need to focus on innovations in linking science and technology with policy, practice and decision-making in four priority areas. The Asia Science Technology Academia Advisory Group (ASTAAG) is committed to working with UN ISDR and other stakeholders on this aspect.