

LAMPIRAN 1
NEW STRAITS TIMES (BUSINESS) : MUKA SURAT 3
TARIKH : 3 MEI 2018 (KHAMIS)

FACILITY AT KERTEH BIOPOLYMER PARK

CJ, ARKEMA INVESTING RM1.2B MORE

Total investment for bio-chemistry platform to hit RM3.3b, barely 3 years after operations begin

KUALA LUMPUR

SOUTH Korea's CJ Cheil-Jedang (CJ) and France's Arkema are investing an additional RM1.2 billion to expand their bio-chemistry platform at the Kerteh Biopolymer Park (KBP), barely three years after it started operating.

CJ-Arkema's bio-chemistry platform – the world's first integrated bio-methionine and thiochemicals facility – will double its capacity following the additional investment.

"The total accumulated investment, including the initial phase of RM2.1 billion, is now RM3.3

billion," said the companies in a joint statement.

In June 2015, CJ and Arkema opened the plant to produce methyl mercaptan, which is a synthesis intermediate for animal feed, and dimethyl disulfide.

The integrated facility has been contributing to Malaysia's US dollar currency reserves by generating RM1.5 billion in annual revenue.

It also employs more than 500 local employees, mostly knowledge-based and skilled professionals.

The facility was expected to contribute significantly to gross national income and produce

2,500 green jobs for Malaysia by 2020, the statement added.

They include more than 500 professionals employed by CJ and Arkema, of which 60 per cent are high-level technical and knowledge workers, such as microbiologists, chemists, engineers and biotechnologists.

The integrated facility is leveraging the supply of raw materials, services and facilities in Kerteh, which in turn helps to create new economic activities and businesses for suppliers and service

providers such as Petroliaam Nasional Bhd, Kerteh Terminal, Kuantan Port, Tenaga Nasional Bhd and others.

It is also involved in research and development to boost local expertise in niche areas, such as chemical engineering and industrial biotechnology, and provide opportunities for collabora-

tions with local universities and research institutions to become biotechnology centres of excellence.

The facility is jointly promoted by the Malaysian Investment De-

velopment Authority, East Coast Economic Region Development Council and Bioeconomy Development Corp and facilitated by Finance Ministry, International Trade and Industry Ministry and Science, Technology & Innovation Ministry, as well as the French and South Korean embassies.

The expanded integrated manufacturing facility in KBP had confirmed its status as the single largest investment in Malaysia's biotechnology sector to date, the statement added.

The project has fulfilled its commitment of accumulated investment of RM3 billion over a period of 10 years.

INFO BOX

2,500

creation of green jobs
in Malaysia by 2020

LAMPIRAN 2
BERITA HARIAN (VARSITI) : MUKA SURAT 56
TARIKH : 3 MEI 2018 (KHAMIS)

UTeM, UTM jalin kerjasama penyelidikan



Delegasi UTeM mendengar taklimat daripada wakil.

Kuala Lumpur: Bagi memperkasa program kerjasama dalam bidang penyelidikan dan pengkomersialan, Universiti Teknikal Malaysia Melaka (UTeM) memeterai memorandum persefahaman (MoU) bersama Universiti Teknologi Malaysia (UTM), baru-baru ini.

Kerjasama itu dimekarkan melalui *Centre for Telecommunication Research and Innovation* (CeTRI) UTeM dan Pusat

Komunikasi Tanpa Wayar (WCC), UTM.

MoU itu akan memfokuskan kepada projek penyelidikan dalam bidang Komunikasi 5G, Sistem Komunikasi Wayarles, Reka bentuk Antena dan Perambatan Gelombang Mikro.

Timbalan Naib Canselor (Penyelidikan dan Inovasi) UTeM, Prof Datuk Ir Dr Mohd Jailani Mohd Nor, berkata MoU itu membabitkan

jalanan kerjasama bagi tempoh tiga tahun bermula Februari 2018 sehingga Februari 2021.

"Perjanjian ini bakal menyaksikan jalinan kerjasama dengan Pusat Kecemerlangan Nasional (Hi-CoE) dalam pelbagai bentuk, seterusnya memenuhi kepentingan dan peranan masing-masing," katanya.

Kongsi fasiliti

Ketua Penyelidik Kolaborasi, Dr Imran Mohd Ibrahim, berkata MoU ditandatangani itu bertujuan mengeratkan hubungan antara kedua-dua universiti dalam pemerkasaan aktiviti penyelidikan.

Beliau berkata, kerjasama itu membabitkan bidang sedia ada, perkongsian fasiliti penyelidikan dan pembangunan teknologi, penghasilan bersama penerbitan jurnal berimpak tinggi serta aktiviti penyelidikan berkesanan.

"WCC UTM adalah

Pusat Kecemerlangan Penyelidikan Nasional (National Hi-CoE) dilantik Kementerian Pendidikan Tinggi (KPT) dalam bidang reka bentuk antena dan kajian perambatan gelombang.

"Berdasarkan reputasi

dimiliki National Hi-CoE, kerjasama di antara kedua-dua universiti ini dilihat sebagai peluang bagi menjalankan penyelidikan dalam bidang teknologi komunikasi tanpa wayar, terutama teknologi masa hadapan, 5G," katanya.

info

→ 9 penyelidik dari UTeM
→ 10 penyelidik dari UTM



Lawatan ke Pusat Inovasi 5G di UTM.

LAMPIRAN 3
HARIAN METRO (SETEMPAT) : MUKA SURAT 79
TARIKH : 3 MEI 2018 (KHAMIS)

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Kuala Nerus

"Penggunaan sistem undi berkomputer lengkap dengan bunyi suara membolehkan nama calon berbanding dapat membantu golongan orang kurang upaya (OKU) cacat penglihatan sekiranya diaplikasikan dalam Pilihan Raya Umum (PRU) akan datang," kata Pengerusi Persatuan Orang-Orang Cacat Penglihatan Islam Malaysia (PERTIS) Wilayah Terengganu Mohd Fauzi Mansor.

"Sekiranya individu OKU tidak pandai menggunakan komputer, mereka boleh meminta bantuan petugas namun dengan adanya bantuan suara maka sukar untuk berlaku ketirisan walaupun petugas membantu membuat undian," katanya.

Menurutnya, sistem pengundian berkomputer bakal digunakan PERTIS dalam pemilihan jawatankuasa persatuan mereka Sabtu depan itu lebih praktikal berbanding sistem lama menggu-

Pilih calon guna bunyi

■ 2 pensyarah UnisZA bangun sistem berkomputer bersuara bantu OKU buta mengundi



AHMAD Faisal (kanan) menunjukkan sistem pengundian berkomputer kepada ahli PERTIS, semalam.

nakan kaedah konvensional iaitu penggunaan kertas yang tercatat titik Braille.

"Seperti sistem yang bakal

digunakan PERTIS dalam pemilihan Sabtu ini, walaupun ada ahli kita tidak mahir menggunakan komputer na-

mun mereka boleh meminta bantuan petugas dan kecanggihan aplikasi ini mengeluarkan bunyi nama calon.

"Selepas undian dibuat, sistem ini memberitahu nama yang diundi disimpan di dalam sistem. Ini memberi lebih keyakinan kepada pengundi cacat penglihatan," katanya.

Katanya, begitu juga cara pengundian bagi PRU yang sepatutnya diaplikasikan dengan penggunaan sistem berkomputer bersuara. Ia membolehkan OKU cacat penglihatan berdiskusi untuk ke saluran pengundian dan membuat undian tanpa bantuan orang lain.

"Sistem pertama di Asia Tenggara dan kedua di Asia selepas Jepun ini dibangunkan dua tenaga pensyarah dari Universiti Sultan Zainal Abidin (UnisZA) dan ia amat membantu golongan OKU cacat penglihatan," katanya selepas menguji sistem undian berkomputer di PERTIS Wilayah Terengganu di sini, kelmarin. Menurutnya, menerusi

kaedah sekarang, OKU cacat penglihatan dibenarkan membawa seorang teman dipercayai untuk memegang kertas undi dalam PRU.

"Tidak mustahil kita suruh lain dia pangkah lain, maklumlah kita tidak nampak, tetapi dengan sistem ini kita boleh dengar dan tahu mana yang kita inginkan serta ia lebih telus," katanya.

Sementara itu, Pensyarah Fakulti Informatik dan Pengkomputeran UnisZA Kampus Besut Ahmad Faisal Abidin berkata, pihaknya membangunkan sistem itu sejak dua bulan lalu dengan bantuan rakanrakan iaitu Mohd Kamir Yusof, yang juga pensyarah.

"Sistem pengundian atas talian wujud di Jepun dan Eropah namun di negara ini dan rantau Asia Tenggara, belum mempunyai sistem sedemikian untuk golongan cacat penglihatan," katanya.

LAMPIRAN 4
KOSMO (DUNIA) : MUKA SURAT 47
TARIKH : 3 MEI 2018 (KHAMIS)



AGENCI

SEJUMLAH robot yang digunakan untuk menghantar makanan dan barang kepada pembeli.



AGENCI

SEORANG pelanggan menerima makanan yang dipesan menerusi khidmat kiriman robot di AS baru-baru ini.

Robot jadi penghantar makanan

LONDON – Sebuah syarikat merancang untuk menggunakan sejumlah 1,000 robot sebagai medium penghantaran makanan di Amerika Syarikat (AS) dan Eropah menjelang akhir tahun ini.

Robot penghantaran milik syarikat Starship Technologies itu telah diuji di 100 buah bandar dan 20 negara dengan jarak perjalanan terkumpul lebih 160,000 kilometer.

Antara bandar yang diuji termasuk Hamburg di Jerman serta Washington dan California di AS. Penghantaran dilakukan membabitkan barangan keperluan asas hingga makanan

seperti piza.

Starship Technologies ditubuhkan oleh dua pengasas Skype yang berpangkalan di London iaitu Ahti Heinla dan Janus Friis pada tahun 2014 selepas mengumpul dana permulaan sebanyak £12 juta (RM64 juta).

"Kami sudah bekerjasama dengan Compass Group di kampus Intuit Mountain View (AS) untuk membekalkan kemudahan penghantaran menggunakan robot.

"Selepas kejayaan pada awal tahun ini dan robot berkenaan diterima baik oleh pengguna, kami merancang untuk mengembang

perkhidmatan serta kiriman ribuan robot di kampus-kampus di seluruh dunia pada 2019," kata Ketua Pegawai Eksekutif Starship Technologies, Heinla.

Robot syarikat itu mampu membawa dua beg berisi barangan keperluan dengan berat maksimum 10 kilogram. Ia bergerak selaju 6.4 kilometer sejam berasaskan kuasa bateri dan memiliki sambungan internet 3G.

Robot berkenaan dilengkapi enam roda selain mempunyai enam kamera keselamatan untuk merakam pihak yang cuba melakukan laku musnah. – Agensi

Indian inventors use soot to make ink



A device created by Chakr Innovation removes soot from the diesel general exhaust, to clean the air and allow ink to be created from soot, on a building in Gurgaon, a satellite city of New Delhi, India. — Picture by Reuters

AS the pre-monsoon summer heat takes hold in New Delhi, two things are as inevitable as 40°C days: power cuts and air pollution from the diesel generators that then kick in.

But a team of Indian engineers has figured out a way to bring some good from choking generator exhaust: They are capturing it and turning it into ink.

"The alarming thing about diesel generators is they are located in the heart of densely populated areas. It's spitting smoke right there," said Kushagra Srivastava, one of the three engineers who developed the technology, now installed in Gurgaon, a satellite city of New Delhi, and in the southern city of Chennai.

The idea, Srivastava said, came about when he and his co-founders stopped at a sugarcane juice stall on a hot day. They noticed a wall that had turned black behind the stand's diesel generator, where exhaust emerged from a pipe.

They wondered if diesel exhaust might be used to produce paint — and set out to try.

The device they came up with, which attaches to generators, captures 90 per cent of the soot particles from cooled diesel exhaust. The material can then be sold to

ink manufacturers.

Their company, Chakr Innovation, has so far installed 50 of the devices for government firms such as Indian Oil, real estate developers and other state government offices, earning more than 11 million rupees (RM785,500) in revenue in the first year, Srivastava said.

The company has plans to install another 50 devices over the coming year, he said. It has so far sold 500kg of collected soot, which has been used to create 20,000 litres of ink, he added.

Chakr Innovations is not the first start-up to see cash in diesel exhaust. A competitor called Graviky Labs, based in Bangalore, is using similar technology to turn diesel exhaust from vehicles into ink.

CHOKING AIR

Srivastava and his co-inventors Arpit Dhupar and Prateek Sachan see themselves as part of a movement towards cleaner air and energy in a country where major cities struggle with choking air.

About 1.1 million people a year die from the impact of air pollution in India, according to a 2015 survey by the US-based Health Effects Institute. That is about a

quarter of the total number of air pollution deaths worldwide, it said.

In New Delhi, levels of the most dangerous particles in the air are sometimes 10 times higher than the safe limit, the survey noted.

Srivastava and Dhupar both grew up in New Delhi, which the World Health Organisation in 2014 declared the most polluted city in the world. Sachan comes from Allahabad, the third most polluted city in WHO's 2016 rankings.

"Earlier I remember there were a lot less cars on the road, there was a lot less congestion, and a lot more greenery," said Dhupar, Chakr's chief technology officer.

But as trees were felled and roads widened to accommodate more cars, Dhupar, then in high school, developed chronic respiratory problems. Doctors put him on medication and warned him to stop playing sports.

"My problem is, whenever I start to run out of air, the anxiety levels shoot up," he said.

Dhupar said many of his family and friends have also developed long-term respiratory issues.

Diesel exhaust contributed to just two per cent of all air pollution deaths in India in 2015, according to the Health Effects Institute.

But in "confined spaces" in urban areas, where many generators are used, it represents a larger risk, said Pankaj Sadavarte, one of the report's researchers.

ACTION IN NEW DELHI

India has in place policies to monitor and restrict air pollution, but they can be difficult to enforce, experts say.

Worries about air pollution are growing, however. Last November, the capital launched its first air quality emergency action plan during a particularly hazardous week when pollution spiked.

The government halted construction within the city, raised parking fees to discourage driving and shut schools to keep children indoors.

The national Ministry of Environment, Forest and Climate Change is drafting a national policy to clean India's air, though its release has been delayed, said Sunil Dahiya, a senior campaigner with Greenpeace India.

"The air pollution debate and health debate is picking up in India," Dahiya said in a telephone interview. "That momentum is forcing the policymakers to make our cities more livable." — Reuters