



KEMENTERIAN TENAGA, SAINS, TEKNOLOGI, ALAM SEKITAR DAN PERUBAHAN IKLIM

Bil	Berita	Media	Capaian Berita Penuh
1.	<u>Ranhill's associate fails in appeal against revocation of permit to sell renewable energy</u>	The Edge Markets	Klik pada tajuk berita
2.	<u>Pertumbuhan yang mantap untuk mengimbangi pandangan optimistik untuk kesan kuasa</u>	See Hua	Klik pada tajuk berita
3.	<u>Govt's renewable energy plan seen negative for IPPs</u>	The Sun Daily	Klik pada tajuk berita
4.	<u>Cahaya Mata Sarawak, D'Nonce, FGV, PBA Holdings, Ranhill, Spring Gallery and TSR Capital</u>	The Edge Markets	Klik pada tajuk berita
5.	<u>Geran Inovasi: Produk inovasi memudahkan kehidupan</u>	Kosmo	Rujuk lampiran 1

TEMPATAN

Bil	Berita	Media	Capaian Berita Penuh
6.	<u>Tak perlu malu! Ujian kanser serviks lebih mudah dengan inovasi ROSE</u>	Astro Awani	Klik pada tajuk berita
7.	<u>Malaysia can achieve WHO targets in cervical screening</u>	The Sun Daily	Klik pada tajuk berita
8.	<u>Ada produk guna teknologi AI</u>	Harian Metro	Klik pada tajuk berita
9.	<u>Polis kaji guna teknologi pengenalan wajah seluruh negara</u>	Berita Harian	Klik pada tajuk berita



10.	<u>Year of artificial intelligence: Impact of AI on society</u>	New Straits Times	Klik pada tajuk berita
11.	<u>Artificial Intelligence Comes To The Construction Site: Startup Pillar Technologies Flags Problems Before Disaster Hits</u>	Forbes	Klik pada tajuk berita
12.	<u>Terus berdaya saing</u>	Harian Metro	Klik pada tajuk berita
13.	<u>Malaysia set to impose harsh new ICO and cryptocurrency laws</u>	The Next	Klik pada tajuk berita
14.	<u>Mata wang, token digital dikawal selia SC</u>	Berita Harian	Klik pada tajuk berita
15.	<u>Jabatan Peguam Negara kecualikan peneroka Orang Asli bayar kos guaman RM12,000 kepada 4 pihak</u>	Berita Harian	Klik pada tajuk berita
16.	<u>Newspaper project bags a record</u>	The Star	Klik pada tajuk berita
17.	<u>IPPs get short end of the stick from new govt plan, says HLIB</u>	The Edge Markets	Klik pada tajuk berita
18.	<u>Rakyat perlu sokong industri pembuatan tempatan</u>	Berita Harian	Klik pada tajuk berita
19.	<u>Bawa straw minuman sendiri</u>	Kosmo	Klik pada tajuk berita
20.	<u>Walau kemampuan kewangan kerajaan terhad tapi...</u>	Sinar Harian	Klik pada tajuk berita
21.	<u>TNB memperkenalkan arang batu campuran</u>	Sinar Harian	Rujuk lampiran 2
22.	<u>Laporan penuh audit 19 kilang Februari</u>	Harian Metro	Rujuk lampiran 3

	<u>ini</u>		
23.	<u>Laporan penuh audit kilang pengimport plastik diketahui awal Februari</u>	Utusan Malaysia	Klik pada tajuk berita
24.	<u>Digital assets come under Securities Commission's purview / Securities Commission to regulate digital assets</u>	The Sun Daily	Klik pada tajuk berita dan rujuk lampiran 4
25.	<u>SC to regulate digital assets</u>	The Star	Klik pada tajuk berita
26.	<u>SC kawal selia aset digital mulai hari ini</u>	Kosmo	Rujuk lampiran 5
27.	<u>It has to begin at home</u>	The Star	Klik pada tajuk berita dan rujuk lampiran 6

ANTARABANGSA

Bil	Berita	Media	Capaian Berita Penuh
28.	<u>Wellness trends in 2019</u>	New Straits Times	Rujuk lampiran 7
29.	<u>The Weaponization Of Artificial Intelligence</u>	Forbes	Klik pada tajuk berita
30.	<u>Thailand among countries 'ready for 4th industrial revolution'</u>	The Nation	Klik pada tajuk berita
31.	<u>Shaping man's future thought process</u>	The Daily New Nation	Klik pada tajuk berita
32.	<u>Chang'e-4 akan rekodkan suhu bulan</u>	Sinar Harian	Klik pada tajuk berita dan rujuk lampiran 8
33.	<u>Open-air lab to study climate change</u>	The Star	Rujuk lampiran 9

LAMPIRAN 1
 SINAR HARIAN (KAMPUS UOLS): MUKA SURAT 1
 TARIKH: 15 JANUARI 2019 (SELASA)

GERAN INOVASI

Demi mencapai negara maju 2020, pereka inovasi terus bersemangat lahirkan produk. Namun, geran yang semakin berkurangan memberi impak. Jadi, apa penyelesaiannya?

SITI KHAIROLNISAH MOHAMMED BAJURI
 Jika dilihat banyak produk inovasi berjaya dihasilkan dan digunakan oleh masyarakat di luar sana daripada usaha yang dijalankan oleh pihak penyelidik mahupun pensyarah di institusi pengajian tinggi (IPT). Malah, pelbagai jenis produk inovatif yang dicipta dan digunakan oleh masyarakat di luar sana untuk memudahkan urusan mereka. Namun begitu, sejak kebelakangan ini, dana atau geran inovasi di Institusi Pengajian Tinggi (IPT) dilihat semakin berkurangan berbanding sebelum ini. Sedikit sebanyak ia memberi kesan kepada pereka produk inovasi itu sendiri. Adakah ia akan memberi kesan kepada kita sebagai pengguna mahupun penyelidik, pencipta produk inovasi ketika Malaysia menuju ke negara maju pada tahun 2020? **MS2**

Saintis dan pensyarah atas kerusi roda

3

Muscarid, inovasi halau lalat

4

Nur Athirah berniaga kuih kapit

5

LAMPIRAN 1 (SAMB.)
 SINAR HARIAN (KAMPUS UOLS): MUKA SURAT 2
 TARIKH: 15 JANUARI 2019 (SELASA)

Produk inovasi memudahkan kehidupan

Benarlah kekurangan dana geran dikatakan antara punca produk inovasi berkurangan?

Budaya inovasi telah dipupuk sejak sekolah rendah sehingga peringkat Institut Pengajian Tinggi (IPT) untuk memberi manfaat kepada masyarakat apabila menggunakan produk inovasi.

Bagi Timbalan Dekan (Penyelidikan & Jaringan Industri), Fakulti Teknologi Kejuruteraan, Universiti Teknikal Malaysia Melaka (UTeM), Ir Dr Mohd Farriz Basar berkata, inovasi itu kadang-kala memberi peluang kepada dirinya untuk melahirkan produk baru atau menambahbaik bagi memudahkan urusan kerja sesuatu perkara dengan cara yang baharu.

"Semua orang boleh membuat reka cipta dan berinovasi, yang penting produk yang dihasilkan itu memberikan manfaat dan menyelesaikan masalah.

"Inovasi juga tidak terhad kepada mencipta produk baru sahaja, ia juga termasuklah menambahbaik teknologi, sistem kerja, perkhidmatan, proses, kaedah dan sebagainya.

Ada persepsi perlu diubah

Terdapat persepsi bahawa inovasi ini hanya boleh dilakukan oleh golongan profesional sahaja berkost tinggi.

"Ini perlu diubah supaya masyarakat sedar bahawa reka cipta dan inovasi ini boleh dihasilkan oleh semua golongan masyarakat tidak kira peringkat umur, jawatan serta latar belakang dan sesuatu inovasi itu tidak semestinya mahal," katanya.

Jelasnya, sebagai contoh, geran Jaringan Penyelidikan Awam-Swasta (PPRN), yang mana projek yang dijalankan hendaklah berasaskan permasalahan teknologi atau teknikal dihadapi syarikat terhadap produk atau perkhidmatan yang dikomersilkan dan skopnya meliputi inovasi produk dan inovasi proses.

"Geran penyelidikan ini fokus kepada kerjasama pensyarah universiti dan usahawan perusahaan kecil dan sederhana (PKS) agar dapat dimanfaatkan bagi menghasilkan produk berkualiti serta meningkatkan daya saing syarikat masing-masing.

"Ini merupakan satu model kerjasama strategik antara pemain industri dengan pihak akademik," katanya.

Dana berkurang bukan halangan

Dr Mohd Farriz berkata, walaupun ada pengurangan pada geran penyelidikan namun usaha membangunkan produk inovasi tidak terjejas dan masih tetap diteruskan.

Katanya, pihaknya juga



ANTARA produk inovasi yang dicipta oleh pensyarah UPM.



DR MOHD FARRIZ

mengoptimimumkan penggunaan peralatan penyelidikan yang sudah ada di makmal-makmal sepenuhnya.

"Saranan kepada pensyarah di universiti adalah untuk mengilatkan usaha untuk memohon geran padanan industri yang mana seperti ini merupakan projek penyelidikan usaha sama di antara universiti dan rakan industri yang membiayai kos projek sama rata dalam tempoh tertentu.

"Dana ini juga diberikan kepada penyelidik untuk menjalankan projek penyelidikan berskala kecil dalam masa singkat dengan sokongan pihak industri dan ia memberi peluang penyelidik mendekati industri melalui kaedah penyelidikan," katanya.

Kekurangan dana antara punca

Sementara itu, Pegawai Penyelidik Bahagian Promosi dan Pemasaran Inovasi Putra Science Park (PSP), Universiti Putra Malaysia (UPM), Asrizam Esam berkata, kekurangan dana menyebabkan banyak projek inovasi yang dicipta terpaksa diletakkan.

Menurutnya, pihaknya juga dimaklumkan geran dalam masa beberapa tahun kebelakangan ini.

Katanya, untuk membangunkan

produk inovasi, mereka banyak mendapatkan geran daripada agensi luar seperti Kementerian Tenaga, Sains, Teknologi, Alam Sekitar & Perubahan Iklim (MESTECC) dan lain-lain lagi.

Jelasnya, ia juga menyebabkan persaingan semakin tinggi untuk mendapatkan geran termasuk penilaian meluluskan geran semakin ketat.

Katanya, IPT termasuk pensyarah juga kini perlu menambah tugas kerja bagi membantu menajana pendapatan universiti seperti mengadakan lebih konsultasi kepada pihak luar, menganjurkan lebih banyak latihan atau seminar dan lain-lain aktiviti penajaan yang berkaitan.

Menurutnya, dari segi kualiti penyelidikan masih lagi dapat dikedalkan pada tahapnya tapi yang akan berkurang sudah pasti dari segi kuantiti inovasi yang dihasilkan.

"Penyelidik terpaksa bersusah-payah terutamanya di universiti berstatus RU seperti UPM sebab KPI penyelidik lebih tinggi dari segi menghasilkan penerbitan, menjalankan penyelidikan dan sebagainya.

"Bila geran semakin susah diperolehi, memang memberi tekanan kepada penyelidik secara keseluruhannya sedangkan KPI mereka semakin tinggi," katanya.

Geran bertambah, makin banyak inovasi dihasilkan

Asrizam yang bertugas di bawah Timbalan Pengarah, Bahagian Promosi dan Pemasaran Inovasi Putra Science Park (PSP), UPM, Dr. Mohamad Fakri Zaky Ja'afar berkata, peluang untuk menghasilkan inovasi yang dapat dijadikan produk yang dikomersilkan tu, akan jadi lebih tinggi jika angka dana geran dinaikkan.

Katanya, walaupun begitu tidak semua juga penyelidikan yang boleh dijadikan inovasi yang boleh dikomersilkan tetapi hasil penyelidikan ini akan dijadikan jurnal atau buku yang boleh menambah ilmu pengetahuan baharu kepada ilmuan di seluruh dunia.

APA KATA MEREKA

"Kita memerlukan inovasi agar mahasiswa IPT dapat membuat inovasi tanpa ada kekangan dan hal ini akan menggalakkan daya saing di antara pelajar universiti.



Bukan itu sahaja, dengan adanya inovasi akan wujud sesuatu pembaharuan yang dapat digunakan untuk melonjakkan nama universiti mahupun nama negara di mata dunia." - Hassan Khudri Jaib, 19, Ijazah Sarjana Muda Pengurusan Perniagaan dan Teknologi (Pembinaan), Universiti Tun Hussein Onn Malaysia (UTHM)

"Pertambahan dana untuk inovasi adalah perlu sekiranya inovasi yang hendak dilakukan adalah bernas, saksama dan rasional."



- Nurasyaza Fazlishah, 21, Ijazah Sarjana Muda Undang-Undang, Universiti Teknologi Mara (UITM)

"Penambahan dana amat diperlukan bagi membantu peningkatan inovasi dalam IPT. Ini kerana, sesetengah inovasi yang ingin dilakukan memerlukan kos yang tinggi bagi menjayakannya. Malahan, inovasi ini merupakan idea yang baru diwujudkan yang memerlukan kemahiran yang sangat tinggi, kritis dan mampu dikomersilkan pada masa akan datang. Dalam pada yang sama, dana seperti wang ringgit yang diperuntukkan perlu bersesuaian mengikut jenis inovasi yang dijalankan."



- Siti Nurfarahin Eraman, 21, Sarjana Muda Pembangunan Sumber Manusia, Universiti Teknologi Malaysia (UTM)



LAMPIRAN 2
SINAR HARIAN (BUSINESS): MUKA SURAT 43
TARIKH: 15 JANUARI 2019 (SELASA)

TNB memperkenalkan arang batu campuran

TENAGA Nasional Berhad (TNB) memperkenalkan arang batu campuran di stesen janakuasanya di Lumut, Perak, sebagai sebahagian usaha berterusan memastikan bekalan arang batu mampan bagi penjana elektrik.

Pengenalan arang batu campuran di Stesen Janakuasa Sultan Azlan Shah, yang menjana 20 peratus sumber elektrik bagi Semenanjung Malaysia, akan membantu kukuhkan kelestarian pembekalan arang batu di masa depan, kata syarikat itu da-

lam kenyataan.

"Ia juga selaras dengan trend semasa dalam kalangan sektor utiliti yang gunakan arang batu campuran bagi pastikan bekalan bahan bakar itu dapat penuhi keperluan penjana tenaga elektrik," katanya.

LAMPIRAN 3
HARIAN METRO (SETEMPAT): MUKA SURAT 14
TARIKH: 15 JANUARI 2019 (SELASA)

**Laporan penuh
audit 19 kilang
Februari ini**

Kementerian Perumahan dan Kerajaan Tempatan (KPKT) mengeluarkan laporan penuh pengauditan 19 kilang kitar semula di seluruh negara, Februari ini.

Pegawai Tugas-Tugas Khas KPKT, Harris Idham Rashid berkata, sejak minggu lalu, pihaknya memeriksa di 11 kilang di seluruh negara.

Katanya, pemeriksaan terhadap lapan kilang lagi dijangka selesai Khamis ini.

“Pemeriksaan bertujuan untuk pembaharuan lesen permit lulus (AP) mengimport sisa plastik.

“Penilaian dilakukan menerusi 18 syarat baharu AP yang ditetapkan kerajaan terutamanya membabitkan aspek plastik bersih,” katanya.

LAMPIRAN 4
 THE SUN DAILY (SUNBIZ): MUKA SURAT 11
 TARIKH: 15 JANUARI 2019 (SELASA)

Securities Commission to regulate digital assets

PUTRAJAYA: Effective today, digital currencies and digital tokens (collectively known as "digital assets") are prescribed as securities and will be regulated by the Securities Commission Malaysia (SC).

In a statement yesterday, Finance Minister Lim Guan Eng said the Capital Markets and Services (Prescription of Securities) (Digital Currency and Digital Token) Order 2019 will come into force today.

The offering of such instruments, as well as its associated activities, will require authorisation from the SC and need to comply with the relevant securities laws and regulations.

"The Ministry of Finance views digital assets, as well as its



Visual representation of bitcoin, a type of digital asset. - AFPPIX

underlying blockchain technologies, as having the potential to bring about innovation in both old and new industries. In particular, we believe digital

assets have a role to play as an alternative fundraising avenue for entrepreneurs and new businesses, and an alternate asset class for investors," Lim

said in the statement.

The SC will put in place the relevant regulatory requirements for the issuance of initial coin offerings (ICOs) and the trading of digital assets at digital asset exchanges in Malaysia. This framework is expected to be launched by the end of the first quarter of 2019.

Any person offering an ICO or operating a digital asset exchange without the SC's approval may be punished, on conviction, with imprisonment not exceeding 10 years and fine not exceeding RM10 million.

Financial regulators have been keeping a tight rein on digital currencies and have previously emphasised that digital currencies are not legal tender in Malaysia.

LAMPIRAN 5
KOSMO (NIAGA): MUKA SURAT 45
TARIKH: 15 JANUARI 2019 (SELASA)

SC kawal selia aset digital mulai hari ini

KUALA LUMPUR - Perintah Pasaran Modal dan Perkhidmatan (Penetapan Sekuriti) (Mata Wang Digital dan Token Digital) 2019 akan mula berkuat kuasa hari ini.

Menteri Kewangan, Lim Guan Eng berkata, sehubungan itu, mata wang digital dan token digital seperti yang dinyatakan di dalam perintah itu (secara kolektif dikenali sebagai aset digital) akan ditetapkan sebagai sekuriti dan dikawal selia oleh Suruhanjaya Sekuriti Malaysia (SC).

“Penawaran instrumen tersebut serta aktiviti yang berkaitan akan memerlukan kebenaran daripada SC dan perlu mematuhi undang-undang sekuriti yang berkaitan,” katanya dalam satu kenya-



SC kini berperanan untuk mengawal selia segala aktiviti berkaitan dengan perdagangan aset digital serta ICO di pasaran tempatan.

taan hari ini.

Kementerian Kewangan berpandangan bahawa, aset digital beserta teknologi *blockchain* yang menjadi asasnya, berpo-

tensi besar untuk membawa inovasi dalam industri lama dan baharu.

“Secara khususnya, kami percaya bahawa aset digital mempunyai peranan

untuk menjadi satu kaedah alternatif bagi penjanaan dana oleh usahawan dan perniagaan baharu serta sebagai kelas aset alternatif kepada pelabur.

“SC akan menetapkan syarat-syarat berkenaan untuk menjalankan tawaran syiling permulaan (ICO) serta perdagangan aset digital dan pasaran aset digital di Malaysia,” katanya lagi.

Guan Eng menjelaskan, rangka kerja SC dijangka dilancarkan menjelang akhir suku pertama 2019.

“Mana-mana orang yang menawar ICO atau operasi aset digital tanpa kelulusan SC boleh dihukum apabila disabit, dengan penjara tidak melebihi 10 tahun dan denda tidak melebihi RM10 juta,” katanya. - Bernama

LAMPIRAN 6
 THE STAR (VIEWS): MUKA SURAT 24
 TARIKH: 15 JANUARI 2019 (SELASA)

It has to begin at home

THE 2018 global climate talks in Poland ended on a disappointing note for many non-state stakeholders. Leaders failed to commit to actions that will help to cap the rise in global temperature to 2°C. The cap was 1.5°C 10 years ago. How do we aim at, much less hit, a moving target?

When I attended the 2009 United Nations Framework Convention on Climate Change (UNFCCC) climate talks in Copenhagen, it was deemed a deal-maker conference – and then it turned out to be anything but. Ten years on, we are still finding solutions while temperatures rise, ice caps melt, animals, plants and humans alike lose their habitats, and people lose their livelihood. As one person interviewed after December's meeting said, it is time for people to take matters into our own hands because politicians and so-called "decision makers" are not doing anything!

All these talks, networks, conventions, working groups, conferences, fora, are established with good intentions, but along the years they lose focus and further add to emissions and denting budgets due to air travel and accommodation expenses. The agreements are records of the good intentions of parties to the UNFCCC. But the

agreements, along with their intentions, die a natural death amid greed and other global crises such as conflict, natural disasters and financial meltdowns.

We, the people, have to create a critical mass to move away from unsustainable practices as if our lives depended on it. We tend to believe that only great powers can hold evil in check. If we look around us we will realise that it is the small, everyday deeds of ordinary folk that keep the darkness at bay. Small acts of kindness and love to one another and to the environment present us the opportunity.

In Malaysia, the headlines are dominated by political party hoppers and acts of self-preservation among politicians on both sides, while the profit-driven section of society clears forest reserves to build condominiums, putting water sources and people at risk.

Proponents of the conservation of Taman Rimba Kiara and Bukit Lagong are fighting tooth and nail to prevent further degradation of the limited green lungs and green spaces we have in the Klang Valley and Selangor.

Contribution to green house gases (GHGs) from the energy sector increased 10% from 2005 to

2014 (70% to 80%) as reported in the 3rd National Communication Report by Malaysia to the UNFCCC, with a 1% increase in methane as a contributor of GHGs.

The second largest contributor, at 9%, is the waste sector. The highest emission of methane is due to fugitive emissions from the oil and gas industries, which accounted for about 41% of methane emissions.

Loss of forest reserves and land use and land use change limited carbon removal capacity.

The bottom line is that we are not energy-efficient, and the contribution to the energy mix from renewable sources is not sufficient to arrest GHG emission rates. Food waste has calcified at 45% of waste generated in Malaysia and, by ending up in mostly unsanitary landfills, will continue to accelerate GHG emissions.

We need a radical change in lifestyles, and it has to begin at home, in our communities and towns/villages. The role of local governments becomes crucial in implementing strategies at city and district levels to compel lifestyle changes – land use, town planning, designating green space, monitoring development and business to prevent/minimise pollution, implementing environmentally-sound

waste management strategies, etc.

Best practices already exist in Penang and Petaling Jaya. Local government policies are easier to implement to nudge community lifestyle to become more sustainable.

Consumers and the general public need constant education and reminders to make sustainable lifestyles more mainstream, to make it the culture by default. We can do it not to feel good about ourselves but for the survival of the current and future generations. We do not want to leave our children a graveyard of dead trees, extinct wildlife and good intentions.

We need to change at this very instant. Minimise waste generation, separate household waste, buy only what is necessary, extend the useful life of your gadgets, furniture, etc. Do not waste food, switch off power when not in use, use mass transit, change your mindset about cars (a big and new car does not mean you are successful or an important person).

It all boils down to personal choice. Make the choice to live a sustainable lifestyle.

RATNA DEVI NADARAJAN
 Programme Specialist
 Klang

LAMPIRAN 7
 NEW STRAITS TIMES (HEAL/WELLNESS): MUKA SURAT 28
 TARIKH: 15 JANUARI 2019 (SELASA)

Wellness trends in 2019

Here are some trends that look set to be big this year

A NEW year is often the time when many of us aim to set healthy resolutions. Looking after our well-being is becoming an increasingly holistic experience, including not only diet and fitness but also mental health, use of natural and eco-friendly products, and time for rest and relaxation.

MAKING THE SWITCH FROM PLASTIC TO ECO-FRIENDLY OPTIONS

As we become more aware of the dangers of plastic for the environment, going plastic-free will be one of the main trends of this year.

And it could also benefit our health as well as that of the planet, with many studies published in the past year linking exposure to phthalates, which are found in plastic packaging and containers, with fertility problems, pregnancy complications and other health issues due to their hormone-disrupting properties.

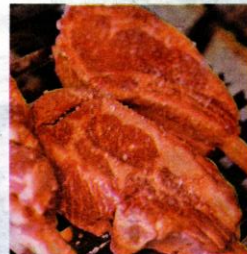
The UK is also planning to ban plastic straws, cotton buds, and single-use plastic across the country from as early as this year.

Some of us have already started to switch from plastic bottles to reusable options, with companies such as Whole Foods announcing that a main focus will be to reduce their plastic packaging in store in preference of more eco-friendly options. The UK is also planning to ban plastic straws, cotton buds, and single-use plastics across the country from as early as this year.



Plant-based eating has been one of the biggest diet trends for the past few years.

PICTURE FROM RUNNINGONREALFOOD.COM



The trend for this year is to avoid meat in diet.

PICTURE FROM WIKIPEDIA



Reusable coffee cups are better for environment than paper cups.

PICTURE FROM LESSPLASTIC.CO.UK



Use reusable shopping bag instead of plastic.

PICTURE FROM PAPERMART.COM

INCREASING CONSUMPTION OF MORE SUSTAINABLE ALTERNATIVES TO MEAT

Plant-based eating has been one of the biggest diet trends for the last few years, and it shows no signs of slowing down. While many continue to give up meat due to animal cruelty, last year saw many studies showing that

plant-based diets can not only boost our health but possibly even help the worrying problem of climate change, driving the trend even further. This year, it looks more likely that not only will we avoid meat in favour of more plant-based alternatives, but we also may be ready to try other alternative sources such as lab-grown faux meat.

The Impossible Burger is made entirely from plant-based ingredients and designed to cook, smell and taste like

real beef, and is now available in restaurants throughout the US, while another brand's meatless patties, Beyond Burger, arrived recently in Tesco supermarkets in the UK.

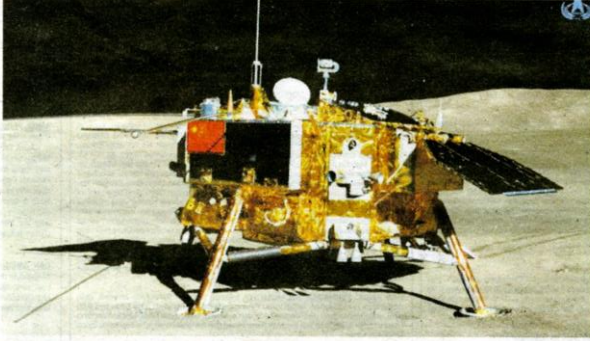
Meanwhile, creepy crawlies may also work their way into our daily diets, with UK supermarket Sainsbury's becoming the country's first to start selling edible insects, which are being touted as a more sustainable and protein-packed meat.

AFP Relaxnews



LAMPIRAN 8
SINAR HARIAN (GLOBAL): MUKA SURAT 46
TARIKH: 15 JANUARI 2019 (SELASA)

Chang'e-4 rekodkan suhu bulan



Chang'e-4 berjaya mendarat di permukaan gelap bulan pada minggu lalu.

BEIJING - Kenderaan perayau, Chang'e-4 yang mendarat buat pertama kali di kawasan gelap bulan pada minggu lalu akan merekodkan suhu bulan.

Saintis menganggarkan suhu tertinggi di bulan pada waktu siang mungkin mencecah sehingga 127 darjah Celsius manakala suhu paling rendah pada waktu malam adalah -183 darjah Celsius.

"Pada 2013, Beijing melancarkan Chang'e-3 dan berjaya mendarat di bulan. Tetapi, ia direka mengikut suhu data asing. Tanpa data kita sendiri tentang

suhu bulan, kita tidak tahu bagaimana suhu sejuk sebenar di bulan pada waktu malam.

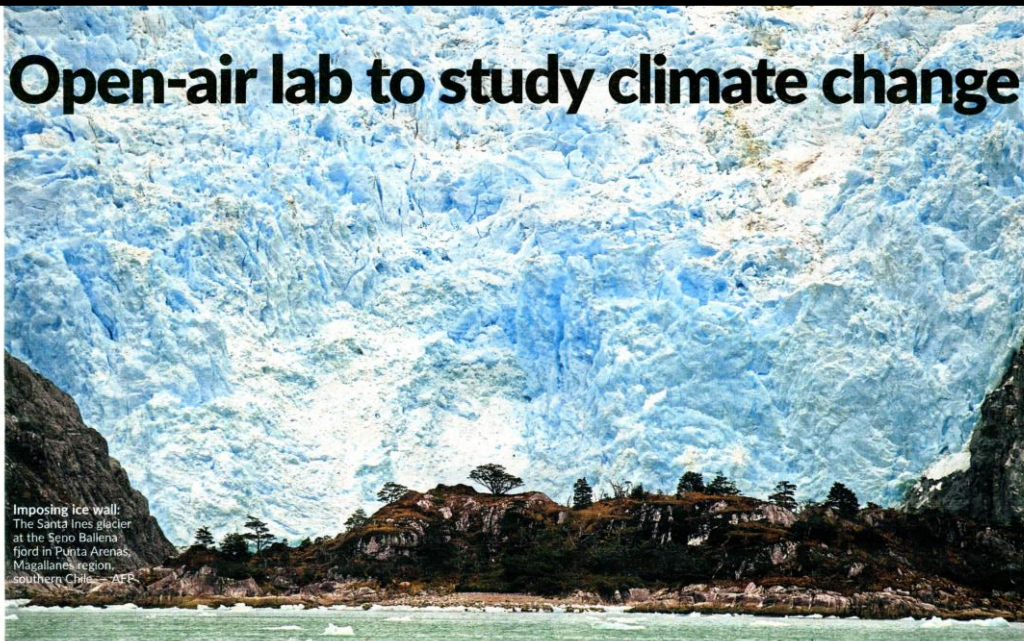
Jadi, Chang'e-4 akan mengukur perbezaan suhu siang dan malam untuk membantu saintis menganggarkan sifat permukaan bulan," kata Pengarah Eksekutif projek angkasa itu, Zhang He.

Difahamkan, sehari di bulan bersamaan 14 hari di bumi, namun waktu malam di bulan adalah sama dengan tempoh malam di bumi.

Suhu juga adalah berbeza untuk waktu siang dan malam di bulan. - Xinhua

LAMPIRAN 9
 THE STAR (WORLD): MUKA SURAT 33
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Open-air lab to study climate change



Imposing ice wall: The Santa Ines glacier at the Seno Ballena fjord in Punta Arenas, Magallanes region, southern Chile. — AFP

Scientists research Chilean fjord to predict future environmental changes

SENO BALLENA: In one of the most inhospitable places on Earth, the southernmost part of Chile's Patagonia region, scientists are studying whales, dolphins and algae in order to help predict how climate change will affect the world's oceans.

For the study, four researchers from the Austral University of Chile embarked on Punta Arenas for the remote Seno Ballena fjord.

The fjord currently produces the kind of conditions that should be seen in other marine systems in the next few decades, when dramatic changes are expected in the environment due to increased carbon dioxide emissions in the atmosphere and the melting of glaciers.

"This place is like an actual experiment in nature because it allows us, without needing to conduct experiments in the lab, to know what will happen without imagining it," marine biologist Maximiliano Vergara said.

Reaching the fjord is no easy task — they had to negotiate the treacherous Strait of Magellan a day and a half aboard a small raft, with winds exceeding 100kph and glacial temperatures.

On site, they take readings from a system of sensors that provide a constant stream of data from water samples taken every three hours.

They are analysing the chemical, physical and biological variables of the waters, which show lower levels of pH, salinity and calcium, as a consequence of climate change.

"What we're doing at the moment is establishing our information baseline," Vergara said.

Seno Ballena gets its name from the humpback whales that feed in the area after travelling from Central America, where they breed.

The chilly waters provide among the most productive marine habitats, where sardines and krill can be

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Maximiliano Vergara

found in huge numbers.

But climate change poses a threat to its ecosystem as the melting of a glacier on Santa Ines island and increased rainfall have led to rising levels of freshwater.

It would have dire consequences for whales as the plankton they feed on could disappear.

"A change in the microalgae could generate changes in the secondary structure (of the marine system) or the animals that feed on these," marine biologist Marco Antonio Pinto said.

Under normal circumstances, when there is an abundance of microalgae, these provide food for the zooplankton that subsequently nourish the food chain, said Pinto.

The researchers are taking samples from eight stations around Seno Ballena to measure the effects of the melting glacier on Santa Ines, which has sped up so much that rocks have appeared that weren't visible on their last trip in April.

"The waters of high latitudes, in both hemispheres, contain a huge amount of information that can be used as a basis to take crucial deci-



Research aplenty: Scientists sailing near a colony of South American fur seals. (Below) Pinto preparing to release a conductivity, temperature and depth measurement instrument. — AFP

sions for environmental preservation projects," said biologist Maximo Frangopolos, a professor at the University of Magallanes and leader of the expedition.

The scientists are worried about a red tide — a phenomenon brought on by huge numbers of microorganisms that absorb a huge amount of oxygen and produce toxins.

For now, they have noted a slight drop in humpback whales numbers but an increase in species such as sea lions, which previously were absent in that region, and dolphins.

They also found a lower concentration of calcium carbonate, which can affect the shells of marine organisms such as mollusks or krill, a staple of a whale's diet.

"It's like a puzzle that we're trying to put together, to see how climate change can affect the marine system, something that would have a social and economic impact on the region," said Pinto. — AFP

