

Technology Roundup

A NEWS BULLETIN

TECHNOLOGY INFORMATION SERVICES (TIS)

PAKISTAN SCIENTIFIC AND TECHNOLOGICAL INFORMATION CENTRE



PASTIC

VOLUME 16 NO. 3

May - June 2024

Editorial Board

Executive Editor

Prof. Dr. Muhammad Akram Shaikh
Director General, PASTIC

Managing Editor / Editor

Dr. Syed Aftab Hussain Shah

Assistant Editor / Composer

Waqar Ahmad

Tech News Headlines

- ICUBE-Q: Pakistan's Lunar CubeSat on Chang'E 6 Mission
- Agriculture Industrial Park in Gwadar
- Pakistan and China agree on Upgrading CPEC
- Punjab Launches Satellite Internet for Schools
- Unlocking Pakistan's Connectivity through Next-Gen Wi-Fi in 6 GHz Band
- Pakistan's IT Exports Consistently Setting New Records
- Thar Coal Mine Ready for Full Operations
- Google Collaborates With Pakistan to Develop Smart Classrooms
- Pakistan's Paksat MM1 Satellite Reaches Earth Orbit
- New Nano-Immunotherapy Enhances Cancer Treatment
- Japan Introduces World's First 6G Device, Faster than 5G
- Google DeepMind's AlphaFold Broadens Modeling
- China Approves First Gene-Edited Wheat,
- Neuron-Sized Electrodes for Vision Implant
- Sound Waves Propel Objects with Precision
- An Advanced Optical Lens for Gas Detection
- Making Multiple Material Types through Single Machine
- UK Girl Regains Hearing through Pioneer Gene Therapy
- Scientists Innovate Highly Efficient Memory Materials with Atom-level Control
- Eye Tracking Enables Touch-Free Mobile Phone Usage
- China Unearthing Moon Rocks from the Far Side
- Dynamic Fashion: Seams that Capture Every Move

Forthcoming Tech Events

- Seminar on "Understanding Optimization and Protocols Evaluation in Wi-Fi Networks"
- 1st International Conference on Computational Sciences and Innovations (ICCSI)
- International Conference on Breakthrough in Pakistan's Economic Development through Technological Innovation in Agriculture - A Policy Approach
- Multidisciplinary Research Poster Conference 2024
- 14th National Media Workshop
- International Conference on Emerging Technologies: Innovations for Sustainable Development Goals (ISDG)

More inside ➡

Tech & Trade Offers

AMNA
ENTERPRISES

kidsuniform.pk
share with a smile

PASTIC National Centre,
Quaid-i-Azam University Campus,
Islamabad.

Phone: 051-9248103-4, 9248128
Fax: 051-9248113
email: tis.pastic@gmail.com
web: www.pastic.gov.pk

ICUBE-Q: Pakistan's Lunar CubeSat on Chang'e 6 Mission

In 2022, the China National Space Agency (CNSA), in collaboration with the Asia Pacific Space Cooperation Organization (APSCO), invited member states to participate in the Chang'e 6 mission by contributing a student-built payload destined for the Moon. Pakistan's Institute of Space Technology (IST) took advantage of this opportunity by proposing a Lunar CubeSat named "ICUBE-Qamar" (ICUBE-Q), which successfully passed a rigorous evaluation process. This initiative represents a collaborative effort involving IST faculty and students, Pakistan's national space agency SUPARCO and China's Shanghai Jiao Tong University (SJTU). ICUBE-Q weighs approximately 7 kg and is equipped with two optical cameras for high-resolution imaging of the lunar surface. It also incorporates essential systems for attitude control, thermal management, and deep-space communication. The primary mission goals include deploying ICUBE-Q into lunar orbit from the Chang'e-6 Orbiter, documenting the deployment process with the Orbiter's camera, confirming operational status through signal reception, capturing comprehensive images of the Orbiter, Earth, and Moon, and gathering crucial lunar magnetic field data to establish a foundational model for future international lunar cooperation endeavors.



Agriculture Industrial Park in Gwadar

Federal Minister for Maritime Affairs Qaiser Ahmed Sheikh launched the Agriculture Industrial Park within the Gwadar Free Zone, developed by China's Hangeng Agricultural Group. This milestone marks a significant moment, heralding a new phase of development. The establishment of enterprises in the Gwadar Port North Free Zone is pivotal for Pakistan's economic expansion, promoting trade, investment, and regional connectivity. With its strategic location and ambitious initiatives, the Gwadar Free Zone is poised to play a crucial role in the future of international trade and development. The



(Meta AI imagined image).

Minister for Maritime Affairs extended congratulations on the successful opening of Hangeng company and the inauguration of the Gwadar Free Zone industrial park. These developments encompass progress on several key projects in Gwadar, including the Gwadar International Airport, the 1.2 MGD desalination plant, the Pak-China Technical and Vocational Institute, the Pak-China Friendship Hospital in Gwadar, and the Gwadar Port Dredging Project.

Pakistan and China Agree on Upgrading CPEC

Pakistan and China are determined to enhance the quality of CPEC development and to strengthen coordination in development strategies. Leaders from both countries reaffirmed their agreement to upgrade and advance the CPEC in its second phase. Prime Minister of Pakistan commended President Xi's visionary Belt and Road Initiative and Global Development Initiative, emphasizing that the China Pakistan Economic Corridor (CPEC) has significantly boosted Pakistan's socio-economic development as a flagship project of the BRI. The PM reiterated Pakistan's commitment to ensure the safety and security of Chinese nationals, projects, and institutions in Pakistan. The leaders also discussed regional and global issues, including Afghanistan, Palestine, and South Asia, and addressed the serious human rights situation in Indian Illegally Occupied Jammu and Kashmir.



Punjab Launches Satellite Internet for Schools

Punjab initiated satellite internet in schools to narrow the digital divide. The Punjab Chief Minister visited the DPS Digital Lab and underscored the government's dedication to enhance educational experiences through digital integration. During the MoU signing ceremony, a UAE delegation led by Sheikh Ahmed Dalmouk Al Maktoum participated. The agreement aims to bring satellite internet to thousands of schools in Punjab, narrowing the digital divide. This partnership highlights a joint commitment to leverage technology for development. The UAE delegation emphasized the importance of satellite internet in enhancing digital access, especially in remote areas. Sheikh Ahmed Dalmouk Al Maktoum expressed enthusiasm about the project's potential to support young talent and foster technological innovation. The collaboration between One Web, ADM Holdings, and the Punjab



(Meta AI imagined image).

government signifies a unified effort towards achieving regional digital objectives. Punjab's satellite internet initiative in schools will bridge the digital gap, enhancing educational access and fostering digital skills. The UAE collaboration underscores joint efforts to leverage technology for development, emphasizing improved digital access in remote areas and promoting innovation and economic growth through education.

Unlocking Pakistan's Connectivity through Next-Gen Wi-Fi in 6 GHz Band

The Pakistan Telecommunication Authority (PTA) has introduced the 6 Gigahertz (GHz) spectrum band for unlicensed RLAN operation, making Pakistan the 10th country in Asia Pacific and one of only 60 worldwide to unlock this band for Wi-Fi services. This move positions Pakistan as a regional leader in adopting advanced Wi-Fi technology, specifically Wi-Fi 6E. At a recent event, speakers from META, Dynamic Spectrum Alliance (DSA), Jazz, Nayatel, and Huawei highlighted the transformative benefits of Wi-Fi 6E for Pakistan. Currently, Wi-Fi operates in Pakistan across two bands: 2.4 GHz and 5 GHz, each with bandwidths of 100 MHz and 150 MHz, respectively. However, these bands also accommodate other applications like Bluetooth and microwave ovens, leading to congestion and latency issues. Wi-Fi 6E is expected to alleviate these challenges by providing additional bandwidth and enhancing performance.



Pakistan's IT Exports Consistently Setting New Records

In May, Pakistan's information technology (IT) exports surged by 41% year-on-year, reaching a new record of \$332 million, marking a remarkable 40.7% increase from the previous year's \$236 million. During July 2023 to May 2024 of FY2023-24, ICT export remittances reached US\$ 2.925 billion, showing a surge from US\$ 2.371 billion reported for the same period last year. It should be noted that ICT services export remittances increased by US\$ 22 million (7.1% growth) in May 2024 compared to the previous month of April 2024. During July 2023 to May 2024 of FY2023-24, the IT & ITeS



(Meta AI imagined image).

Industry achieved a trade surplus of US\$ 2.571 billion, the highest among all Services and accounting for 87.9% of total ICT export remittances. This marks a 22.31% increase compared to the trade surplus of US\$ 2.102 billion recorded during the same period last year. The ICT sector exports totaling US\$ 2.925 billion represent the highest among all Services, accounting for 41.02% of the total export of services, with 'Other Business Services' trailing at US\$ 1.424 billion.

Thar Coal Mine Ready for Full Operations with Approved Tariff

The Thar Coal & Energy Board (TCEB) has approved the Commercial Operations Date (COD) Stage tariff for the Thar Coal Block-II mine. Furthermore, the financing terms for the project were finalized during the review of the Contract Stage tariff. This approval occurred in a pivotal meeting chaired by the Sindh Chief Minister. The Thar Coal Block-II mine has a capacity of 7.6 million tonnes per annum (Mtpa) in Phase-II. Discussions also covered the Limited Scope Petition concerning the financing terms for Phase-III of the mine, operated by Sindh Engro Coal Mining Company (SECMC). Additionally, the board approved revised financing terms for the Contract Stage tariff review of Thar Coal Block-II mine, Phase-III, which now features an increased capacity of 11.2 million tonnes per annum (Mtpa). The sanctioned terms include an elevated lending spread of up to 1.85 percent above the benchmark interest rate, compared to the previous limit of 1.5 percent.



Google Collaborates With Pakistan to Develop Smart Classrooms

Google and Pakistan's education ministry on Thursday announced about partnering-up to provide access to education for millions of students across the country, digitally transform Pakistan's education system and build smart schools. Ultimately, Google's partnership with the Ministry of Federal Education aims to digitally transform Pakistan's education system on a large scale, establishing smart classrooms and promoting a conducive learning environment. Google, in collaboration with its Google for Education country partner Tech Valley, will assist the Pakistani government in establishing a local assembly of more than 500,000 Chromebooks by 2026. This initiative aims to provide students and teachers in Pakistan with access to digital tools and resources.



(Meta AI imagined image).

Chromebooks are laptops or tablets that operate on Google's Chrome operating system and are generally more cost-effective compared to traditional laptops. Under the agreement, teachers will receive training on effective technology use in the classroom. They will also develop and implement innovative learning programs that harness the power of technology. Access to digital tools will help Pakistani children adapt to and thrive in the digital economy.

Pakistan's Paksat MM1 Satellite Reaches Earth Orbit

Pakistan's most recent advanced communication satellite, PAKSAT MM1, successfully reached Earth's orbit following its launch with assistance from China. The launch took place at China's Xichang Satellite Launch Center and was broadcast live by the Pakistan Space and Upper Atmosphere Research Commission (SUPARCO) offices in Islamabad and Karachi on May 30. Positioned at an altitude of 38,786 kilometers and located 38.2 degrees east of the Earth's orbit, PAKSAT MM1 has activated its solar panels after arriving in orbit. Weighing five tons, the satellite is equipped with state-of-the-art communication technology aimed at delivering high-speed Internet services across Pakistan. Rigorous tests are being conducted to ensure the satellite's functionality and health in its orbital environment.



New Nano-Immunotherapy Enhances Lung Cancer Treatment

Researchers at Brigham and Women's Hospital have developed a novel 'dual action' treatment that integrates immunotherapy with targeted drug delivery, demonstrating potential in preclinical models of lung cancer. Researchers at Brigham and Women's Hospital, a pivotal institution within the Mass General Brigham healthcare system, have developed an innovative nano-medicine therapy. This method delivers anticancer medications directly to lung cancer cells while simultaneously enhancing the immune system's ability to fight cancer. This new study showed promising results in both laboratory cancer cell cultures and mouse models of lung tumors. This advancement offers potential benefits in improving treatment effectiveness and patient outcomes, especially for cancers that do not



respond well to standard immunotherapy. According to the lead author of study, Nanoparticles have long been utilized for targeted medication delivery to tumor cells, while immunotherapy has revolutionized cancer treatment by preventing cancer cells from evading our immune system. In the study, researchers have effectively integrated the two approaches into a single drug delivery system aimed at treating cell lung cancer.

Japan Introduces World's First 6G Device, 20 Times Faster than 5G

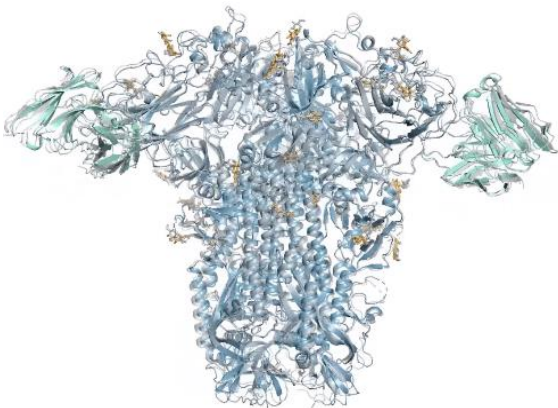
Advancements in technology have been remarkable with the enhancement of global internet connectivity, enabling our devices and applications to operate more efficiently. To propel digitalization further, the next crucial step is to enhance global connectivity. While current 5G internet speeds are impressive, there is a need for something even more advanced. Japanese companies have pioneered world's first 6G device, accelerating the advent of unparalleled internet connectivity. Since 2021, DOCOMO, NTT Corporation, NEC Corporation, and Fujitsu have collaborated on developing this device, with each company contributing to various aspects of research and development. 6G has the potential to eliminate buffering, lags, and disconnections globally. Moreover, it promises to enhance machine-to-machine connections and pave the way for a future where the "Internet of Things" becomes a reality. The "Internet of Things" envisions a world where all devices gain enhanced functionality through seamless online connectivity.



(Meta AI imagined image).

Google DeepMind's AlphaFold Broadens Modeling Capacity

Google DeepMind has launched an upgraded version of its biological prediction tool, AlphaFold, capable of predicting the structures of proteins and nearly all components of biological organisms. This advancement holds promise for accelerating drug discovery and scientific research. Currently, the tool is being employed to explore various applications, from developing resilient crops to discovering new vaccines. AlphaFold 3 extends its predictive capabilities to DNA, RNA, and molecules like ligands crucial for drug development. DeepMind asserts that the tool offers a more nuanced understanding of molecular interactions than previous models. Its predictive accuracy ranges from 40% to over 80%, with confidence levels provided for each prediction. When accuracy is lower, researchers use AlphaFold as an initial step before employing other methods. Further developments in AlphaFold 3 may accelerate drug discovery, enhance vaccine development, improve agricultural resilience, and advance our understanding of biological systems.



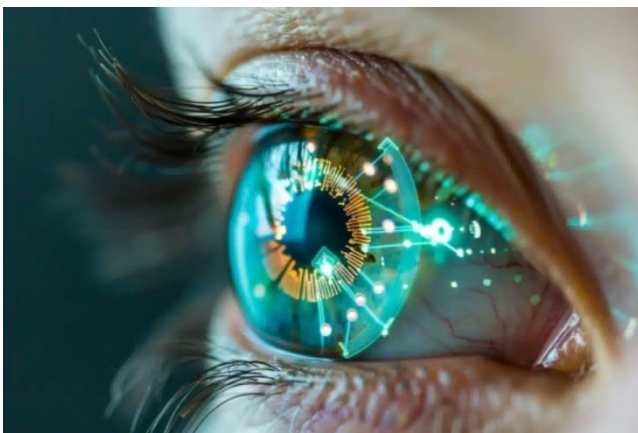
China Approves First Gene-Edited Wheat, Expands GM Tech to Food Crops

China has approved the safety of gene-edited wheat, marking a cautious step towards commercial cultivation of genetically modified food crops. In the past year, China has increased approvals for GM corn and soybeans to enhance food security, but adoption remains slow due to health and ecological concerns. Gene editing, which modifies existing genes rather than introducing foreign ones, is considered by some scientists as less risky than traditional genetic modification. China primarily imports GM crops for animal feed and grows non-GM varieties for direct human consumption, reflecting ongoing consumer safety concerns. Approval of disease-resistant gene-edited wheat is significant and has given wheat's importance in Chinese cuisine and agriculture as the world's largest producer and consumer of wheat.



Neuron-Sized Electrodes for Vision Implant

Researchers from Chalmers University of Technology in Sweden, University of Freiburg and the Netherlands Institute for Neuroscience have developed an incredibly small implant. It features electrodes the size of a single neuron and maintains long-term integrity in the body, offering potential for future vision implants for the visually impaired. Often when a person is blind, some or part of the eye is damaged, but the visual cortex in the brain is still functioning and waiting for input. When considering brain stimulation for sight restoration, there needs to be thousands of electrodes going into an implant to build up enough information for an image. Electrical impulses sent via an implant to the brain's visual cortex can create an image, with each electrode representing a pixel. The vision implant developed in this study resembles a 'thread' containing multiple electrodes arranged in a row.



Ultimately, multiple threads with thousands of electrodes each would be required for long-term use, making this study a crucial advancement toward realizing such implant. Developing electrodes the size of single neurons, allows researchers to incorporate numerous electrodes onto a single implant, enabling the creation of a more detailed visual image for the user. The use of flexible, non-corrosive materials in this design ensures a durable, long-term solution for vision implants.

Sound Waves Propel Objects with Precision

Researchers have achieved the navigation of floating objects through an aquatic obstacle course using sound waves alone. This optics-inspired technique shows potential for biomedical applications, particularly in noninvasive targeted drug delivery. Over the past four years, researchers have focused on moving objects in dynamic environments using sound waves. Their approach, known as wave momentum shaping, works independently over an object's surroundings or physical characteristics. With only the object's position needed as input, the sound waves handle the rest autonomously. The method relies on momentum conservation, which makes it exceptionally straightforward and universal, highlighting its promising potential. After successfully guiding a ping-pong ball, the scientists conducted further experiments involving stationary and moving obstacles to introduce complexity into the system. Maneuvering the ball around these obstacles showcased the effectiveness of wave momentum shaping in dynamic, uncontrolled environments, including scenarios akin to navigating within a human body. Sound, being harmless and noninvasive, holds significant promise for biomedical applications. The researchers aim to adapt their method for use with light in the future. Currently, their focus is on scaling down their sound-based experiments to the micro-level. They plan to use ultrasonic waves under a microscope to manipulate cells.



An Advanced Optical Lens Engineered for Gas Detection

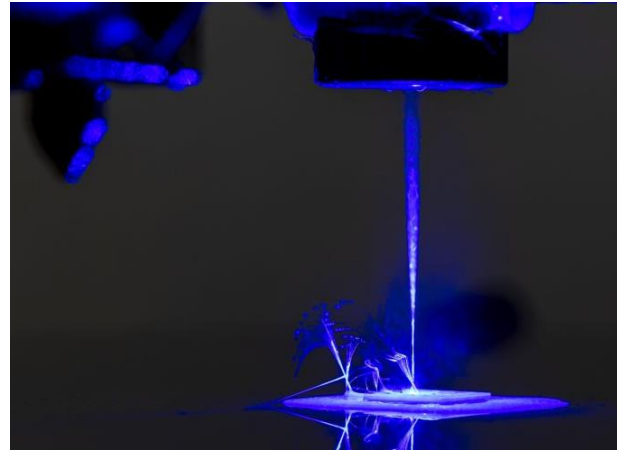
A team of researchers from the University of Jena has created a miniature optical lens, just a few millimeters in diameter that alters its refractive properties when exposed to gas. The study highlights how this micro-lens exhibits "intelligent" behavior, achieved through a novel hybrid glass material. The lens's molecular structure features a three-dimensional lattice with cavities capable of trapping gas molecules, influencing the material's optical characteristics. The discovery of a miniature optical lens



with gas-detecting abilities holds promise for future advancements in several key areas. It could revolutionize environmental monitoring by enabling portable and sensitive gas detection devices, crucial for early pollutant detection. Overall, this innovation promises improved health outcomes, environmental stewardship, and technological advancements across multiple fields.

Making Multiple Material Types through Single Machine

Researchers at the University of Missouri have devised a method to produce intricate devices using a single machine capable of incorporating multiple materials such as plastics, metals, and semiconductors. The new research introduces a pioneering 3D printing and laser process for producing multi-material, multi-layered sensors, circuit boards, and electronic textiles. Known as the Freeform Multi-material Assembly Process, it holds the potential to transform the manufacturing of innovative products. A key advantage is that innovators can concentrate on designing new products without the burden of prototyping concerns.



This opens up opportunities for entirely new markets, with broad impacts expected in wearable sensors, customizable robots, medical devices, and beyond. The team's method employs unique techniques with a machine featuring three distinct nozzles, one for depositing ink-like material, another for laser carving shapes and materials, and a third for adding additional functional materials to enhance product capabilities. Initially, it constructs a basic structure using standard 3D printing filament like polycarbonate and a transparent thermoplastic. Then, it switches to laser technology to transform specific areas into laser-induced graphene, precisely applied as required. Finally, additional materials are incorporated to further enhance the functional properties of the final product.

UK Girl Regains Hearing through Pioneering Gene Therapy

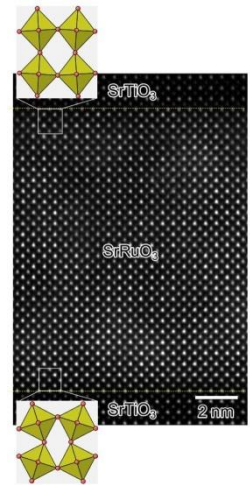
An 18-month-old British girl, Opal Sandy, has regained almost perfect hearing after becoming the first person worldwide to participate in a revolutionary gene therapy trial. Born completely deaf due to auditory neuropathy caused by disrupted nerve impulses, Opal received treatment at Addenbrooke's



Hospital in Oxfordshire. The therapy, developed by biotech firm Regeneron, delivers a functional copy of the Otof gene responsible for producing otoferlin, a crucial protein for ear cell communication with the hearing nerve. Following surgery in September, Opal received the gene infusion in her right ear, and by February, tests in Cambridge confirmed her ability to hear soft sounds like whispers.

Scientists Innovate Highly Efficient Memory Materials with Atom-level Control

Researchers at Pohang University of Science and Technology (POSTECH) have developed a next-generation DRAM memory material known as "Spin-orbit torque (SOT)." SOT utilizes the interaction between electron spin (magnetic property) and motion (electrical property), allowing for control of the magnetic state through current-induced spin movement. This approach reduces power consumption by utilizing magnetic rather than electrical information, making it ideal for non-volatile memory that retains data when powered off. The team focused on materials exhibiting both magnetism and the "Spin-Hall effect," particularly strontium ruthenate (SrRuO_3). They modified the atomic lattice structure of SrRuO_3 to create asymmetric Spin-Hall effects on its surface layers, enabling precise control of magnetization direction without external magnetic fields. By integrating SOT into a SrRuO_3 -based device, they could manipulate the magnetic domain solely using electric current for data writing and reading.



Eye Tracking Enables Touch-Free Mobile Phone Usage

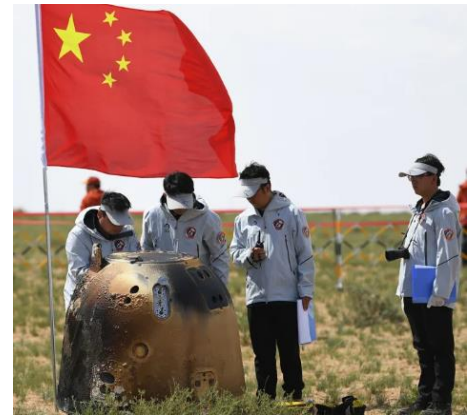
Apple has introduced revolutionary Eye Tracking technology in iOS 18 and iPadOS 18, transforming how users interact with their iPhones and iPads. Initially highlighted as part of Apple's enhanced accessibility offerings, Eye Tracking utilizes the front-facing camera and on-device machine learning to accurately monitor user's eye movements. Designed primarily for individuals facing physical challenges with touch screens, Eye Tracking enables users to control their devices simply by looking at the screen. Setting it up is straightforward, users can access it via the Settings app under Accessibility > Physical and Motor > Eye Tracking. To calibrate the system, users follow a dot that moves around the screen, a process that typically takes about a minute. Once activated, a small black dot appears on the screen, indicating the user's gaze position. This dot acts as a pointer, replacing traditional touch controls. Dwell Control is another key feature enabled with Eye Tracking, allowing users to select items by maintaining their gaze on them for a few seconds. The system offers customization options such as adjusting Dwell Control sensitivity and enabling Snap to Item, which automatically selects the nearest interface element when gazed upon. These enhancements reduce the need for precise accuracy in selecting items, thereby improving overall usability and user experience.



(Meta AI imagined image).

China's Lunar Triumph: Unearthing Moon Rocks from the Far Side

China now holds a unique treasure, the rocks and soil from the far side of the moon, a feat achieved by the successful return of the Chang'e-6 lunar mission on June 25. This scientific triumph underscores China's standing as a leading global space power, second only to the United States. Amid intensifying competition in the race to establish a lasting human presence on the moon, China's space agency is following in the footsteps of NASA's Apollo missions by sharing its lunar samples with scientists worldwide. The samples, collected using a drill and mechanical arm, comprise approximately 4.4 pounds (2 kilograms) of lunar dust and rocks from a remote crater on the moon's far side, perpetually out of sight from Earth. China achieved a significant milestone by becoming the first and only country to land a robotic spacecraft softly on the far side of the moon, accomplished initially in 2019 with the Chang'e-4 mission. Just a year later, China further solidified its place in history as only the third nation to successfully retrieve samples from the moon's near side with the Chang'e-5 mission.



Dynamic Fashion: Seams that Capture Every Move

Conductive threads stitched into garment seams allow harmless low voltages to pass through, making electrical circuits. These threads change resistance based on the wearer's body movements, paving the way for digital clothing that can sense and capture movements more precisely than current smartphones and smart-watches. The research establishes a framework for e-textile designers and clothing manufacturers to develop advanced garments. These innovations could significantly improve applications in exercise, physiotherapy, and rehabilitation. Our research demonstrates that standard over-locked seams in typical garment constructions can effectively sense movement. This design innovation eliminates the requirement for a separate power source by integrating the seam with a



charging coil, which wirelessly draws energy from a mobile phone placed in the pocket. This approach allows for the creation of advanced motion-sensing garments without the need to modify existing manufacturing processes. The researchers have also demonstrated that smartphone apps leveraging sophisticated Artificial Intelligence (AI) techniques

can utilize this movement data to accurately interpret body movements into specific postures or gestures, such as those used in physiotherapeutic exercises.

SOURCES AND IMAGE CREDITS

<https://ist.edu.pk/icube-q>

<https://www.pakistantoday.com.pk/2024/05/05/agriculture-industrial-park-in-gwadar-free-zone-usher-in-new-era-of-development-andy-liao/>

<https://www.radio.gov.pk/08-06-2024/pakistan-china-agree-to-upgrade-cpec-advance-development-in-2nd-phase>

<https://techx.pk/punjab-opens-satellite-internet-in-the-schools/>

<https://www.pta.gov.pk/en/media-center/single-media/pta-announces-unlicensed-rlan-operation-wi-fi-6e-in-6-ghz-band-in-pakistan-170524>

<https://arynews.tv/pakistans-it-exports-continue-to-break-records/>

https://thenewstoday.com.pk/thar-coal-mine-set-for-full-scale-operations-with-approved-tariff/?doing_wp_cron=1719470396.6225259304046630859375

<https://www.arabnews.pk/node/2534406/pakistan>

<https://www.arabnews.pk/node/2525641/pakistan>

<https://www.technology.org/2024/06/21/nano-immunotherapy-developed-to-improve-lung-cancer-treatment/#:~:tex>

<https://technology.inquirer.net/134195/japan-6g-device>

<https://www.technologyreview.com/2024/05/08/1092183/google-deepminds-new-alphafold-can-model-a-much-larger-slice-of-biological-life/>

<https://www.reuters.com/markets/commodities/china-approves-first-gene-edited-wheat-step-open-up-gm-tech-food-crops-2024-05-08/>

<https://neurosciencenews.com/nano-visual-implant-blindness-26047/>

<https://actu.epfl.ch/news/moving-objects-precisely-with-sound-2/>

<https://www.uni-jena.de/en/257235/an-optical-lens-that-senses-gas>

<https://showme.missouri.edu/2024/no-assembly-required/>

<https://www.thenationalnews.com/health/2024/05/08/british-girl-becomes-first-in-the-world-to-have-hearing-restored-in-gene-therapy-trial/>

<https://phys.org/news/2024-06-scientists-generation-highly-efficient-memory.html>

<https://arynews.tv/eye-tracking-lets-you-navigate-ios-18-without-touching-your-iphone/>

<https://edition.cnn.com/2024/07/01/science/nasa-bill-nelson-china-change-6-samples-scni/index.html>

<https://www.bristol.ac.uk/news/2024/june/clever-clothes.html>

FORTHCOMING TECH EVENTS**PAKISTAN**

- Seminar on “Understanding Optimization and Protocols Evaluation in Wi-Fi Networks”
July, 15th, Mirpur University of Science and Technology, Mirpur
<https://must.edu.pk/seminar-on-understanding-optimization-and-protocols-evaluation-in-wi-fi-networks/>
- 1st International Conference on Computational Sciences and Innovations (ICCSI)
July 22 – 23, The University of Haripur, Haripur
<http://121.52.149.157/>
- International Conference on Breakthrough in Pakistan's Economic Development through Technological Innovation in Agriculture - A Policy Approach
July 29 – 31, Bacha Khan University, Charsadda
https://docs.google.com/forms/d/e/1FAIpQLSf39yuGy8z-TgriokNHNH9Ni3GWKdczImKRTL_mImH6h-m7JA/viewform?pli=1
- Multidisciplinary Research Poster Conference 2024
July 31st, Kohat University of Science and Technology, Kohat
<https://www.kust.edu.pk/kust/index.php/exa/results/1266-notification-of-rescheduling-multidisciplinary-research-poster-conference-2024>
- 14th National Media Workshop (14th NMW)
August 5 – 9, National Defense University, Islamabad
<https://www.ndu.edu.pk/issra/download/nmw-14.jpg>
- International Conference on Emerging Technologies: Innovations for Sustainable Development Goals (ISDG)
August 19 – 21, University of Haripur, Haripur
<https://www.uoh.edu.pk/news-events.php?id=MTgwOA==#gsc.tab=0>
- 2nd International Conference on Climate-Induced Natural Disaster And Mitigation
September 11 – 12, Karakoram International University, Gilgit
<https://www.kiu.edu.pk/center/2nd-international-conference-on-climate-induced-natural-disaster-and-mitigation>
- 1st International Conference on advances in Mechanical, Materials, Mechatronics and Energy Engineering (ICAME-24)
October 17 – 18, University of Engineering and Technology, Taxila
<https://web.uettaxila.edu.pk/icame2024>
- 3rd International Conference on Contemporary issues in Management and Administrative Sciences
October – November, Lahore College for Women University, Lahore
<https://lcwu.edu.pk/news-aug2020/4125-3rd-international-conference-on-contemporary-issues-in-management-and-administrative-sciences.html>
- 18th International Conference on Emerging Technologies (ICET 2023)
November 6 – 7, National University of Computer and Emerging Sciences, Peshawar
<https://www.icet.org.pk/2023/index.php>
- 3rd International Conference of Sciences on "Revamped Scientific Outlook of 21st Century, 2024"
November 14th, Rawalpindi Women University, Rawalpindi
<https://conf-fs2023.rwu.edu.pk/>
- 3rd International Nursing Research Conference 2024
November 15 – 16, Liaquat University of Medical & Health Sciences, Jamshoro
<https://www.lumhs.edu.pk/nrcon2024/>
- Role of Artificial Intelligence in Access to Justice in Pakistan: Shaping the Future of Law, Peace, and Equality
December 3 – 4, Bahauddin Zakariya University, Multan
<https://www.iiu.edu.pk/wp-content/uploads/2024/05/iri-international-conference-02052024.pdf>

INTERNATIONAL

- TECHSPO Auckland 2024 Technology Expo
August 8 – 9, Auckland, New Zealand
<https://techsposauckland.co.nz/>
- Asia Pacific Drilling Technology Conference and Exhibition – Advancing Drilling and Well Technologies for Resilient Future
August 7 – 8, Bangkok, Thailand
https://www.spe-events.org/asia-pacific-drilling?_ga=2.42068965.1905833411.1
- 63rd Annual Conference of Metallurgists
August 19 – 22, Nova Scotia, Canada
<https://com.metsoc.org/>
- EV Charging Infrastructure Middle East 2024
August 19 – 20, Dubai, UAE
<https://www.middleeast.evcharging-infrastructure.com/>
- 11th International Conference on Civil and Urban Engineering
August 20 – 22, Rome, Italy
<https://iccue.org/>
- Global Summit on Polymer Science and Composite Materials (GSPSCM2024)
September 16 – 18, Prague, Czech Republic
<https://polymersciencesummit2024.com/>
- WATER AI 2024
September 18 – 19, California, USA
<https://www.water-ai-summit.com/>
- Intelligent Automation Conference 2024
October 1 – 2, Amsterdam, Netherlands
<https://intelligentautomation-conference.com/europe/>
- 5th International Seminar on Fundamental and Application of Chemical Engineering (ISFACHE) 2024
October 1 – 2, Surabaya, Indonesia
<https://elib.its.ac.id/conf/isfache/>
- 5th International Conference on Building Science, Technology and Sustainability (ICBSTS 2024)
October 15 – 18, Lisbon, Portugal
<https://www.icbsts.org/>
- 10th IUPAC International Conference on Green Chemistry (10th ICGC)
October 18 – 22, Beijing, China
<https://www.greeniupac2024.org/>
- Greenhouse Gas Control Technologies (GHGT) Conference
October 20 – 24, Alberta, Canada
<https://ghgt.info/>
- Optical Latin America Optics and Photonics Conference
November 10 – 14, Puerto Vallarta, Mexico
https://www.optica.org/events/topical_meetings/latin_america_optics_and_photonics_conference/
- International Congress on Engineering and Information
November 21 – 23, Taipei, Taiwan
<https://iceai.org/>
- 9th International Neonatology Association Conference
December 5 – 8, Berlin, Germany
<https://worldneonatology.com/2024/>

TECH AND TRADE OFFERS

Amna Enterprises

About Amna Enterprises

Amna Enterprises is an emerging supplier of safety equipment dedicated to providing comprehensive solutions for workplace safety across various industries. With a commitment to excellence and a focus on innovation, we offer a wide range of high-quality personal protective equipment (PPE), road safety gear, and fire safety products and provide related services to ensure the well-being of workers and the public.

Our safety equipment services encompass a wide range of provisions aimed at ensuring the safety of road users, including Traffic Signs, Rubber Speed Breakers, Road Markings, Road Cateyes etc. to reduce accidents and improve overall road safety.

If you feel that your facility roads are non-responsive and traffic needs to be managed to avoid hazards, please call us. Our specialists will visit your site and provide you best possible solutions. We offer wide range of cost effective solutions to cater all types of requirements.

Our services

- Fire safety
- Road safety
- Safety items
- Safety PPE's



Contact us

Address: 1st Floor, WSA-32, Block 14, F B Area, Karachi

Phone: 021-36336126

+92-330-2496121

Email: info@amna.pk

Web: <https://amna.pk/>

*Kidsuniform.pk***About Kidsuniform.pk**

kidsuniform.pk is Pakistan's largest online costume store providing the best quality costumes for children. We offer costumes/cosplay clothing for babies, boys and girls. We also offer school supplies, fancy clothing and much more.

Our services

- Kids costumes
- Kids clothing
- Cultural dresses
- Stationery
- Accessories
- Gloves
- Gifts
- Cosmetics

**Contact us**

Address: Warehouse, New Lalazar Near Askari-7, Rawalpindi, 44000

Phone: +92 332 5437222

Email: info@kidsuniform.pk

Web: <https://kidsuniform.pk/>

About PASTIC

PASTIC serves as a gateway for Scientific & Technological Information for R&D by catering to the information needs of researchers, entrepreneurs, industrialists, educationists, policy makers and planners through anticipatory and responsive information services.

Technology Information Section works exclusively for support and promotion of technological information on trade and industry in the country.

“Technology Roundup” is a news bulletin that provides latest and innovative technology news, and forthcoming events. It also promotes products, technologies and services globally in sectors such as Agro Industry, Bio-Technology, Building Material, Business, Chemicals, Electronics, Energy, Fisheries, Food Processing, Machinery, Packaging, Mining, Pharmaceuticals and Textiles.

Please give us your feedback and address queries to tis.pastic@gmail.com