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SCIENCE & TECHNOLOGY

GLOBAL

Breakthrough Towards Cleaner Hydrogen Energy

Researchers at University of Kansas have made a breakthrough towards splitting hydrogen and oxygen molecules to make pure hydrogen -- without using fossil fuels. They made the discovery by studying a catalyst that is based on a pentamethylcyclopentadienyl rhodium complex, which is called [Cp*Rh] for short. They focused on the Cp* (pronounced C-P-"star") ligand paired with the rare metal rhodium because of hints from prior work showing that this combination would be suitable for the work. It could lead to improvements in other catalysts and systems that rely on Cp* ligands. The team is now working on applying techniques to the development of new approaches to recycling of nuclear fuels and handling of actinide species.

MIT Engineers Design ‘Smart Sutures’ that can Deliver Drugs or Sense Inflammation

Massachusetts Institute of Technology engineers have designed tissue-derived 'smart' sutures that can hold tissue in place, and detect inflammation and release drugs. The sutures are coated with hydrogels that can be embedded with sensors, drugs, or cells that release therapeutic molecules. The sutures could also be adapted for use to heal wounds or surgical incisions elsewhere in the body. The researchers created their new sutures from pig tissue, which they "decellularized" using detergents, to reduce the chances of inducing inflammation in the host tissue. After dehydrating the tissue and twisting it into strands, the researchers evaluated its tensile strength and found that it was comparable to commercially available catgut sutures. They also found that the De-gut sutures induce much less immune response from surrounding tissue than traditional catgut. These smart sutures could also be used to deliver therapeutic cells such as stem cells. Researchers are working on further testing each of these possible applications, and on scaling up the manufacturing process for the sutures. They will explore the possibility of using the sutures in parts of the body other than the gastrointestinal tract.

Gene Editing Tool Could Help Reduce Spread of Antimicrobial Resistance

The University of Exeter developed a new tool which could help reduce the spread of antimicrobial resistance, by exploiting a bacterial immune system as a gene editing tool. The team harnessed the CRISPR-Cas9 gene editing system, and engineered a plasmid which can specifically target the resistance gene for Gentamicin -- a commonly used antibiotic. They found that the plasmid protected its host cell from developing resistance. Furthermore, researchers found that the plasmid effectively targeted antimicrobial resistant genes in hosts to which it was transferred, reversing their resistance. The technology shows early promise to eliminate resistance in a wide range of different bacteria. Their next step is to conduct experiments in more complex microbial communities. It could be a way to reduce the spread of antimicrobial resistance in environments such as sewage treatment plants, which we know are breeding grounds for resistance.

Stretchable Knee Wearable Offers Insights into Improving e-textiles for Healthcare

Researchers at the Singapore University of Technology and Design developed a fully knitted, circuit-embedded knee wearable for wireless sensing of joint motion in real-time. It was a highly stretchable, fully functional sensing circuit made from a single fabric. To develop this single-fabric circuit, the team mechanically coupled an electrically conductive yarn with a dielectric yarn of high elasticity in various stitch patterns. Dimensions were customised according to the subject's leg. The functional components -- sensors, interconnects, and resistors -- formed a stretchable circuit on the fully knitted wearable that allowed real-time data to be obtained. The potential impact of such a device in the medical field is huge. Long-term continuous monitoring of joint motion is important to track mobility-related conditions. Wearable technology solves this problem by assessing a user's mobility directly in real-time.

Engineers Create Bacteria that can Synthesize an Unnatural Amino Acid

University of Delaware researchers have engineered bacteria to synthesize an amino acid that contains a rare functional group that others have shown to have implications in the regulation of our immune system. The researchers also taught a single bacterial strain to create the amino acid and place it at specific sites within target proteins. These findings may help in developing unique vaccines and immunotherapies in the future. The researchers focused on para-nitro-L-phenylalanine (pN-Phe), a non-standard amino acid that is neither one of the twenty standard amino acids nor been observed in nature. pN-Phe has been used by other research groups to help the immune system mount a response to proteins. They demonstrated synthesis of pN-Phe in *Escherichia coli* and is a case of an organism designed to autonomously create and harness an expanded genetic code. Genetic code expansion methods allowed the researchers to increase the "alphabet" of available amino acids encoded by DNA. The long-term goal is to further refine this platform for applications related to vaccines or immunotherapies

New Potential Drug Target for Alzheimer's Disease

Researchers at Rensselaer Polytechnic Institute studied the interactions between Apolipoprotein E (ApoE), and heparan sulfate (HS). ApoE is a protein that combines with fats to transport cholesterol throughout the body. Heparan sulfate is a sugar molecule present on cell surfaces that plays a key role in cellular communication. A variant of ApoE, ApoE4, is the most significant genetic risk for late-onset Alzheimer's disease. The team investigated not only ApoE4, but ApoE3, the most common ApoE genotype and two protective isoforms ApoE2 and

ApoE Christchurch, as well. They discovered that a modification of HS (3-O-S) was important for ApoE/HS interactions. All isoforms of ApoE recognized 3-O-S, but the differences in their strength of interactions correlated with Alzheimer's disease risk. This offers a new potential drug target to slow the progress of the disease: the enzymes responsible for sulfation called heparan sulfate 3-O transferases. The team plans to take a deeper look at ApoE/HS interactions.

INDIA

[New Cathode Material for Next Generation Energy Storage Systems](#)

Indian Scientists have found an avenue that can simultaneously address the air/water-instability and structural-cum-electrochemical instability of Sodium–transition-metal–oxide-based cathode materials for Sodium-ion batteries and, accordingly, have developed new air/water-stable stable and high-performance cathode materials. The newly developed materials exhibit high electrochemical cyclic stability and stability upon exposure to air/water, thus, facilitating the development of systems that are expected to serve as cost-effective and sustainable energy storage systems for a range of applications, including consumer electronic devices, grid energy storage, storage of energy harvested from renewables and, eventually, electric vehicles. They evolved a universal design criterion, paving the way towards successful design and widespread development of environmentally stable and high-performance cathodes for the sustainable Na-ion battery system and beyond. The researchers have suggested a change in the alternate slab layered structure of the Na-TM-oxide structure of the Na-ion battery cathode by introducing “interslab” spacing by tuning the TM-O bond covalency.

[New Artificial Light-harvesting System for Solar Cells](#)

Scientists at IISER, Kolkata have developed a new method of harvesting artificial light using organic nanotubes, which can be utilized in solar cells, photocatalysis, optical sensors, and tunable multi-color light-emitting materials. They carried out experimental and computational investigations on artificial light-harvesting in organic nanotubes derived from the union of an organic fluorescent molecule and a therapeutically important biopolymer. In the presence of heparin, the cationic cyano stilbenes employed in this study formed nanotubes with bright greenish-yellow emission through an electrostatically driven co-assembly process. Due to the temperature responsiveness of the FRET process in these systems, they were further employed as ratiometric emission thermometers (that sense temperature based on the variation in emission intensity at two different wavelengths) in the temperature range 20–90 °C, and this highlighted a practical application of these artificial light-harvesting systems.

[Diagnostic Test for Sickle Cell](#)

Molbio Diagnostics and ShanMukha Innovations (an Indian Institute of Science (IISc) spin-off) have collaborated to design, develop and commercialise point-of-care diagnostic devices to diagnose haemoglobin-related diseases. It has developed SickleCert, a first-of-its-kind indigenous point-of-care confirmatory test in the country for quantitative detection and differentiation of sickle cell disease/trait. The platform will also be able to soon test for Anemia and Thalassemia. Molbio will help ShanMukha with the development, manufacturing, and commercialisation of the platform. The diagnostic tool uses technology based on High-Performance Optical Spectroscopy (HPOS) and demonstrates high accuracy in clinical evaluations. The test had been approved by the Indian Council of Medical Research, and

recommended by the Department of Health Research as a cost-effective field solution for National Health Mission programs.

Navigation Satellite NVS-01 Successfully Placed by ISRO GSLV-F12

The Indian Space Research Organisation (ISRO) on 29 May successfully placed NVS-01, the first of the second-generation satellite series, into geosynchronous transfer orbit. A Geosynchronous Satellite Launch Vehicle (GSLV) placed the satellite, which will ensure continuity of navigational (NavIC) services and also provide new service in L1 band. NVS-01 is the first in the series of five satellites. It carries navigation payloads operating in L1, L5, and S bands. The satellite is powered by two solar arrays, capable of generating power upto 2.4kW and a lithium-ion battery supporting payload and bus load during eclipse. The mission life of NVS-01 is expected to be more than 12 years.

G-20 AND GLOBAL CHALLENGES

Scientific Challenges Discussed at G20 RIIG Conference at Diu

G20 Research Innovation and Initiative Gathering (RIIG) Conference on Scientific Challenges and Opportunities for a Sustainable blue-economy meeting in Diu discussed the need for sharing of nations' best practices and policy models for sustainable blue economy. The blue economy sectors and opportunities; ocean observation, data, and information services; marine ecosystems & pollution; blue economy management and perspectives; coastal and marine spatial planning; marine living resources and biodiversity; deep sea ocean technology; and blue economy policy perspectives were also discussed at the meeting. A total of 35 foreign delegates and 40 Indian experts and invitees from various Indian scientific institutions participated in the conference. The Indian Presidency also presented the first draft of the Research Ministers declaration for discussion during the meeting. The Ministerial Declaration shall be adopted at the Research Ministers meeting scheduled to take place in Mumbai on 5th July 2023. The G20 countries, guests and International Organisations which participated in the conference are Brazil, Indonesia, Australia, Japan, Italy, France, Germany, Russia, Saudi Arabia, United Kingdom, Netherlands, France, Republic of Korea, United States of America, European Union, Spain, Singapore, UAE, Netherlands, Norway and International Solar Alliance (ISA). The Research Innovation Initiative Gathering (RIIG) is a new initiative of the G20 Forum, which was initiated during the Indonesian Presidency in 2022. India is taking the RIIG initiative forward during its G20 Presidency in 2023 under the main theme of "Research and Innovation for Equitable Society".

G20's Startup20 Engagement Group Releases Draft Communiqué

The Startup20 Engagement Group under India's G20 presidency has released the first draft of the core [Recommendation and Policy Directives of the Policy Communiqué](#) for public comments. Stakeholders from around the world are invited to provide valuable feedback. It outlines five key areas of policy and action - Foundation, Alliances, Finance, Inclusion, and Sustainability. The public comment period will remain open until May 27, 2023 during which the Engagement Group will closely evaluate the feedback received. The final version of the Policy Communiqué will incorporate the valuable inputs received from stakeholders across nations. The Startup20 Engagement Group is a dedicated platform within the G20 framework that focuses on facilitating dialogue, promoting innovation, and fostering growth in the startup

ecosystem. Composed of representatives from various countries, the group strives to develop and implement policies that support startups, entrepreneurs, and ecosystem builders worldwide.

G20 Third Energy Transitions Working Group (ETWG) Meeting

The Third Energy Transitions Working Group Meeting (ETWG) under India's G20 Presidency concluded in Mumbai on May 17, 2023. The three-days' meeting witnessed participation of over 100 delegates from G20 member countries, special invitee countries and International Organisations. The primary agenda of the 3rd ETWG meeting was the detailed discussions on the draft Ministerial Communique and entailed constructive discussions and deliberations on priority areas. Member countries presented their respective viewpoints. There has been consensus on the proposals in the areas of energy transitions under India's G20 Presidency. Most notable is the consensus on giving high priority to ensure universal access to modern and sustainable energy to all. The meeting was complemented by eight side events. The discussions and progress on the draft Ministerial Communique will be taken forward in the 4th Energy Transitions Working Group Meeting, scheduled to take place in Goa from July 19-20, 2023.

G20 Environment and Climate Sustainability Working Group (ECSWG) meeting

The Third Environment and Climate Sustainability Working Group (ECSWG) meeting under India's G20 Presidency concluded in Mumbai on 23 May. The three day meeting witnessed a participation of 141 delegates from G20 countries and 10 invitee countries, and 14 international and regional organisations. The 3 priorities outlined for the ECSWG were arresting land degradation, promoting circular economy and giving impetus to the blue economy. All meetings focused on specific themes out of these three themes. The discussions on Blue Economy was supported by two side events – Mega Beach Clean Up Event and the Ocean 20 Dialogue on Day 1 of the meeting. The meeting discussed the draft Ministerial Communique based on the Focus Group Discussions which had been conducted over the past three weeks. The draft Communique, will be discussed at the 4th and final ECSWG meeting to be held in Chennai from 26th to 27th July, and issued at the Minister's meet on 28th July, 2023.

G20 Second Disaster Risk Reduction Working Group (DRRWG) Meeting

G-20's Second Disaster Risk Reduction Working Group (DRRWG) meeting came to an end in Mumbai on 25 May, which deliberated on Disaster Resilient Infrastructure and Financing for Disaster Risk Reduction as the central theme of any discussion on Disaster Risk Reduction. The meeting concluded that an institutional framework that supports investments in infrastructure projects, avoids fragmentation, and promotes execution of such infrastructure projects is desirable and should be encouraged in the national legal framework of G-20 countries. Additionally, the role of social protection systems in mitigating the impact of disasters on the most vulnerable population groups was a key topic of discussion. Exchange of good practices and case studies from the G-20 countries was also discussed. The meeting concluded with a side event on Eco-Based Approaches for Disaster Risk Reduction. A Round Table was held with Private Sectors focused on Financing Disaster Risk Reduction. During the technical sessions, the G20 countries discussed a roadmap for DRRWG for the next three years. The Indian Presidency aims to mainstream disaster risk reduction in the policy space, and focus financing instruments and mechanisms to anticipatory action and risk reduction. This initiative of India to include Disaster Risk Reduction in the G-20 is a part of the Sendai Framework for Disaster Risk Reduction 2015 to 2030 (Sendai Framework). This was the first major agreement that provided

Member-States with a concrete action plan to protect development gains from the Risk of Disaster.

IN BRIEF

Low-cost, Waterproof Sensors

A Penn State-led team of researchers has created an accessible, affordable, waterproof and wearable pencil-on-paper sensor to monitor multiple vital signals. The researchers used a silica hydrophobic coating. These sensors were also designed to be stretchable, making it possible to wear on the skin. The sensor is made of graphite material exfoliated from a pencil. In addition to capturing temperature and gas molecules, the sensors could capture electrical physiological action to monitor muscular motion, cardiovascular activity and brain signals. The researchers said that the device has the potential not just for sensing but also for stimulation — for example, the sensor could administer thermal therapy by sending a current to the skin. The sensor's affordability, accessibility and versatility may make it useful for public health applications, instead of solely individual health purposes.

Electric Vehicle Battery for Low Temperatures

Scientists from the U.S. Department of Energy's (DOE) Argonne and Lawrence Berkeley national laboratories have developed a fluorine-containing electrolyte that performs well even in sub-zero temperatures. This low-temperature electrolyte shows promise of working for batteries in electric vehicles, as well as in energy storage for electric grids and consumer electronics like computers and phones. In testing with laboratory cells, the team's fluorinated electrolyte retained stable energy storage capacity for 400 charge-discharge cycles at minus 20 Celsius. Even at that sub-zero temperature, the capacity was equivalent to that of a cell with a conventional carbonate-based electrolyte at room temperature. The antifreeze electrolyte has a bonus property. It is much safer than the carbonate-based electrolytes that are currently used, since it will not catch fire. The technology is being patented.

Faster and More Accurate Detection of Parkinson's and Alzheimer's

Researchers at the University of Minnesota Twin Cities have made a significant breakthrough in the field of diagnosis by creating a revolutionary new diagnostic method that promises to rapidly and accurately detect neurodegenerative diseases. This approach holds great promise for providing earlier treatment and reducing the impact of diseases such as Alzheimer's and Parkinson's in humans, as well as similar diseases in animals like chronic wasting disease. The method, dubbed Nano-QuIC (Nanoparticle-enhanced Quaking-Induced Conversion), involves shaking a mixture of normal proteins with a small amount of misfolded protein, triggering a chain reaction that causes the proteins to multiply and allowing for the detection of these irregular proteins. Tested with samples from deer, they found that adding 50-nanometer silica nanoparticles to RT-QuIC experiments dramatically reduces detection times from about 14 hours to only four hours and increases the sensitivity by a factor of 10. The researchers believe that Nano-QuIC could eventually prove useful for detecting protein-misfolding diseases in humans, specifically Parkinson's, Creutzfeldt-Jakob Disease, Alzheimer's, and ALS.

Blood Pressure Monitoring with Smartphone Attachment

Engineers at the University of California San Diego (UCSD) have developed a simple, low-cost clip that uses a smartphone's camera and flash to monitor blood pressure at the user's fingertip.

The clip works with a custom smartphone app and currently costs about 80 cents to make. The researchers estimate that the cost could be as low as 10 cents apiece when manufactured at scale. Another key advantage of the clip is that it does not need to be calibrated to a cuff. The clip is a 3D-printed plastic attachment that fits over a smartphone's camera and flash. The researchers tested the clip on 24 volunteers and results were comparable to those taken by a blood pressure cuff. A company, Billion Labs Inc., has been set up to refine and commercialise the technology.

Solar Powered “Artificial Leaf”

University of Cambridge scientists have developed an ‘artificial leaf’, powered by sunlight, that converts CO₂ and water into ethanol and propanol. This innovation eliminates the intermediary step of producing syngas, making the technology more practical and paving the way for a sustainable, zero-carbon emission future. The researchers developed a copper and palladium-based catalyst, and optimised it in a way that allowed the artificial leaf to produce more complex chemicals, specifically the multi-carbon alcohols ethanol, and n-propanol. Both alcohols are high energy density fuels that can be easily transported and stored. At present, the device is a proof of concept and shows only modest efficiency. The researchers are working to optimise the light absorbers so that they can better absorb sunlight and optimising the catalyst so it can convert more sunlight into fuel. Further work will also be required to make the device scalable so that it can produce large volumes of fuel.

Synthetic Peptides for Inflammatory Disease Detection

A Swiss team has developed peptides as an alternative to antibodies for detecting the protein calprotectin, crucial for diagnosing and monitoring inflammatory disorders. These peptides offer a more accurate, stable, and cost-effective means for biomarker detection, enhancing the diagnostic power of calprotectin. Further tests are underway to translate this breakthrough into a practical diagnostic product. Peptides can bind to proteins with high affinity and selectivity, and can be chemically produced with high purity and homogeneity and have many advantages for detecting biomarkers. Scientists from BÜHLMANN AG and EPFL developed human calprotectin ligands based on peptides from a library of more than 500 billion different peptides. The best peptide not only binds to a large surface region of calprotectin but also to a specific form of calprotectin that is the relevant species in patient samples. The peptide was finally tested in professionally assembled lateral flow cassettes and found that it was suited for accurate detection and quantification of calprotectin.

RESOURCES & EVENTS

PM Modi addresses 76th Session of the World Health Assembly

Congratulating the WHO on completing 75 years, PM Modi said that the COVID-19 pandemic had shown the need for greater collaboration in healthcare. The pandemic highlighted many gaps in the global health architecture. Building resilience in global systems needs a collective effort. The pandemic also highlighted a need to boost global health equity. During the crisis, India showed its commitment to international cooperation sending almost 300 million doses to over 100 countries. He said that India's traditional wisdom is that the absence of illness is not the same as good health. A step forward towards wellness could be through Traditional systems such as Yoga, Ayurveda and meditation, addressing physical, mental and social aspects of health. He said that India's vision for good health is "One Earth, One Health". One can be healthy only when our whole ecosystem is healthy. In the last few years, India has worked on

availability, accessibility & affordability of healthcare including the world's biggest health insurance scheme. India is keen on supporting the WHO for similar efforts in low and middle income countries.

Prime Minister Modi at the Quad Leaders' Summit

Prime Minister, Shri Narendra Modi participated in the third in-person Quad Leaders' Summit in Hiroshima, Japan on 20 May 2023. The Leaders released a Quad Leaders' Vision Statement – "Enduring Partners for the Indo-Pacific" which included the following initiatives: (a) Clean Energy Supply Chains Initiative; (b) Quad Infrastructure Fellowships Programme; (c) Partnership for Cable Connectivity and Resilience and (d) Quad Investors' Network. The Leaders agreed to continue their regular dialogue and maintain the momentum of Quad engagement. In this context, the Prime Minister invited Quad Leaders to India for the next Quad Summit in 2024.

India's National Climate Research Agenda Released

India's National Climate Research Agenda was released at the inauguration of the two-day International Climate Research Conclave (ICRC-2023) on 26 May 2023, paving the way forward for coordinating national efforts towards understanding and addressing climate change 2030 and beyond. The Secretary, Department of Science and Technology (DST), said that addressing climate change is the collective responsibility of all individuals and sectors of society. Climate change is influenced by peripheral activities surrounding climate science, and it is the duty of scientists to identify the areas that have the most significant impact on the climate and work towards mitigating them. He emphasised the importance of understanding the cryosphere and the implications of climate change, and the need for formulating policy decisions to address various aspects such as water resources, extreme rainfall, heat waves, and marine waves. These complexities need to be quantified and communicated with reduced uncertainty to facilitate better policy decision-making. Over 200 climate scientists, students, experts, and policymakers from different parts of the country and around the globe participated in the International Climate Research Conclave (ICRC-2023) to discuss India's recent progress in climate research and its agenda and vision for 2030.

ICMR signs MoA with National Cancer Grid

The Indian Council of Medical Research (ICMR), has signed a Memorandum of Agreement (MoA) with National Cancer Grid (NCG), an initiative of the Government of India through the Department of Atomic Energy and its grant-in-aid institution, the Tata Memorial Centre. The objective of the MoA is for clinical trials, focusing on the development of novel affordable therapies for India-specific cancers and cancers common in India. The agreement covers joint funding for multicentric, multidisciplinary, interventional trials for common/unique cancers.

Zero Draft of SDG Summit Political Declaration

The political declaration of the 2023 UN High-level Political Forum on Sustainable Development (HLPF), meeting under the auspices of the UN General Assembly (UNGA) in September, is under discussion among UN Member States in "zero draft" form. The next consultation on the draft Political Declaration will convene on 24 May. [The zero draft](#) is based on inputs from delegations in writing and during meetings on 3 February and 16 March. The

zero draft contains sections on: Member States' shared resolve; progress and remaining gaps and challenges in our changed world; and a call to action to turn our world towards 2030. It outlines transformative actions for the SDGs, actions to secure a sustainable future for Our Planet, levers for SDG acceleration, and efforts around mobilizing resources, boosting investment, and building capacity. The transformative actions highlighted in the draft relate to gender equality, quality education, digitalization, sustainable food systems, renewable and clean energy, and reducing disaster risk and building resilience. Among the levers for SDG acceleration, the zero draft identifies: science, technology, and innovation (STI) and partnerships; high-quality, timely, and reliable data on SDG progress; and integration of the SDGs into national policy frameworks.

UNEP Report on Reducing Plastic Pollution

A new UN Environment Programme (UNEP) report argues that plastic pollution could be reduced by 80 per cent by 2040 if countries and companies adopt concrete practices, market shifts, and policies that can inform government thinking and business action. Titled, '[Turning off the Tap: How the World Can End Plastic Pollution and Create a Circular Economy](#),' the report underscores three necessary market shifts, namely reuse, recycle, and reorient and diversify, and emphasizes the need to eliminate unnecessary and problematic plastic uses, as well as deal with legacy plastics. Shifting to a circular plastics economy could result in 700,000 more jobs, with the poor in low-income countries and the informal sector being the primary beneficiaries. In addition, it would result in USD 1.27 trillion in savings, while an additional USD 3.25 trillion would be saved from avoided externalities. Policies, such as a levy on virgin plastic production, could drive this market transformation, the report argues, as could using a plastic credits system, modelled after carbon credits. Setting and implementing design and safety standards for disposing of non-recyclable plastic waste, and making manufacturers responsible for products shedding microplastics, among others, can help address issues, the report suggests. The report contains several recommendations.

SCIENCE POLICY AND DIPLOMACY

Shanghai Cooperation Organisation (SCO) nations to collaborate in Science, Technology and Innovation

Union Minister of State for Science & Technology has called upon countries of Shanghai Cooperation Organisation (SCO) nations to join hands for enhanced collaboration in the field of Science, Technology and Innovation, at the Seventh Session of the Heads of Ministries and Agencies of Science and Technology of the SCO Member States. He said that India has always expressed a deep desire to strengthen cooperation within SCO countries in this key sphere of Science, Technology and Innovation which directly impacts the welfare and progress of all our peoples. India would support SCO efforts in developing innovative and inclusive solutions to promote sustainable development within the Eurasian region. India looks forward to working closely with all the Member States to reach a consensus on these initiatives.

G7 Leaders meeting in Japan

The Group of 7 (G7) leaders from Canada, France, Germany, Italy, Japan, the UK, and the US, together with the EU, have concluded a three-day summit, in Hiroshima, Japan, from 19-21 May 2023. They expressed their "determination to meet the global challenges of this moment

and set the course for a better future.” Recognizing the linkages between poverty reduction and tackling the climate and nature crises, the leaders pledged to work to accelerate achievement of the SDGs in the [40-page G7 Hiroshima Leaders’ Communiqué](#). The leaders commit to work to “make concrete progress on this agenda” at the Summit on a New Financial Pact, the G20 Summit, the SDG Summit, the 2023 World Bank Group (WBG) and International Monetary Fund (IMF) Annual Meetings, and the UN Climate Change Conference (UNFCCC COP 28), among other key meetings. The G7 leaders also issued: several other documents on nuclear disarmament, Ukraine, Clean Energy, Economic resilience, and Food security. The G7 leaders were joined by the leaders from Australia, Brazil, Comoros, Cook Islands, India, Indonesia, the Republic of Korea, and Viet Nam, as well as representatives from several multilateral agencies.

We welcome your comments and valuable suggestions. Please write to us for receiving publications, updates and notices regarding seminars, conferences etc. Contact us at science.diplomacy@ris.org.in

NOTE TO OUR READERS AND STAKEHOLDERS:

RIS Science Diplomacy Programme (fisd.in) is glad to present a new version of Science Diplomacy News Alerts, following India’s assumption of the Presidency of the G20. A new section G20 and global challenges has been added. We request your cooperation to review the Alerts and improve its content. For this purpose, please complete the form at <https://forms.gle/o4d869FxaM9t3KNw7>, and submit it. Your support and cooperation is appreciated.