

If you can't see this message, [view it in your browser.](#)

SCIENCE DIPLOMACY NEWS ALERT | 1-15 OCTOBER 2022| ISSUE 95

www.fisd.in

NEWS ALERT

Forum for Indian Science Diplomacy

RIS Science Diplomacy News Alert is your fortnightly update on Indian and global developments in scientific research, technological advancements, science diplomacy, policy, and governance. The archives of this news alert are available at <http://fisd.in>. Please email your valuable feedback and comments to science.diplomacy@ris.org.in

CONTENTS

GLOBAL

[Converting Polyethylene Bags, Plastics to Polymer Building Blocks](#)

[Novel Solar Harvesting System](#)

[Link Between Fast-Melting Arctic Ice and Ocean Acidification](#)

[Newly Designed Nanomaterials Conduct Heat in Specific Ways](#)

[Cobalt-based Catalysts Could Enable Efficient Plastics Recycling](#)

[Precise DNA Cleavage Using New CRISPR-Cas Approach](#)

[Diverting Asteroids to Protect the Earth](#)

COVID-19 (WORLD)

[New Coronavirus Subvariant BA.2.75.2 Causes Concerns](#)

[New COVID-19 Subvariant is Highly Contagious](#)

COVID-19 (INDIA)

[Coronavirus-Bursting Antibody Developed](#)

INDIA– SCIENCE & TECHNOLOGY

[Gold Nanoparticles Drug Delivery Method to Improve Cancer Management and Treatment](#)

[Quantum Entanglement to be Harnessed for Energy Storage Technology](#)

[IISc-Power Grid Corporation Tie Up to Tackle Cyber-Security Challenges](#)

IN BRIEF

[Creating a Mouse Embryo from Stem Cells](#)

[New Technology in Plastics Recycling](#)

[New Technique that Charges EV Battery in 10 Minutes](#)

[Fast 3D Microprinting with Two Lasers](#)

[Smart Plastic Material for Soft, Flexible Robotics and Electronics](#)

RESOURCES AND EVENTS

[World's Largest Flow Battery Connected to the Grid in China](#)

[Menace of Short Lived Climate Pollutants](#)

[US Releases New Arctic Strategy as Climate Threat Grows](#)

[New US Executive Order on Data Privacy Framework](#)

[China Attacks US for Chip Export Ban](#)

SCIENCE POLICY AND DIPLOMACY

[\\$500 Million International Project for Brain Mapping](#)

[IPCC Prepares for Seventh Assessment Cycle](#)

[US Plans to Police Misuses of Artificial Intelligence](#)

[Towards a Science-Policy Panel on Chemicals](#)

GLOBAL

Converting Polyethylene Bags, Plastics to Polymer Building Blocks

Researchers from the University of California, Berkeley, and Lawrence Berkeley National Laboratory (Berkeley Lab) have developed catalysts to break long polyethylene (PE) polymers into uniform chunks -- the three-carbon molecule propylene -- that are the feedstocks for making other types of high-value plastic, such as polypropylene. The process would turn a waste product into a major product in high demand, lower the need for fossil fuel production of propylene, often called propene, but also help fill a currently unmet need by the plastics industry for more propylene. The team used a catalyst to create a reactive carbon-carbon double bond, which could then unravel the polymer chain by a reaction called olefin metathesis with ethylene and two additional catalysts that react cooperatively. 80 per cent of the polyethylene was reduced to propylene. The reactions were conducted in a liquid solution with soluble, or "homogeneous," catalysts. The researchers are currently working on a process using non-soluble, or "heterogeneous," catalysts to achieve the same result, since solid catalysts can be reused more easily. The group demonstrated that the process works with a variety of PE plastics, including translucent milk bottles, opaque shampoo bottles, PE packaging and the hard black plastic tops that link aluminum can four-packs. All were efficiently reduced to propylene, with only coloring agents having to be removed.

Novel Solar Harvesting System

A Professor at the University of Houston reported on a new type of solar energy harvesting system that breaks the efficiency record of all existing technologies, which could clear the way for using solar power 24/7. The thermodynamic limit is the absolute maximum theoretically possible conversion efficiency of sunlight into electricity. The thermodynamic efficiency limit of STPVs, which has long been understood to be the blackbody limit (85.4 per cent). Besides improved efficiency, STPVs promise compactness and dispatchability (electricity that can be programmed on demand based on market needs). In one important application scenario, STPVs can be coupled with an economical thermal energy storage unit to generate electricity 24/7. The proposed system offers a new pathway to improve the performance of STPV systems significantly. It may pave the way for nonreciprocal systems to be implemented in practical STPV systems currently used in power plants.

Link Between Fast-Melting Arctic Ice and Ocean Acidification

Scientists have identified a strong correlation between the accelerated rate of melting ice in the region and the rate of ocean acidification, a perilous combination that threatens the survival of marine life and biological processes throughout the planet's ecosystem. It is the first analysis of Arctic acidification that includes data from more than two decades, spanning the period from 1994 to 2020. They have predicted that by 2050 -- if not sooner -- Arctic Sea ice in this region will no longer survive the increasingly warm summer seasons. As a result of this sea-ice retreat

each summer, the ocean's chemistry will grow more acidic, with no persistent ice cover to slow or otherwise mitigate the advance. It creates life-threatening problems for the enormously diverse population of sea creatures, plants and other living things that depend on a healthy ocean for survival.

Newly Designed Nanomaterials Conduct Heat in Specific Ways

Researchers at MIT developed an algorithm and software system that can automatically design a nanoscale material that can conduct heat in a specific manner, such as channeling heat in only one direction. They developed their system by taking computational techniques that have been traditionally used to develop large structures and adapting them to create nanoscale materials with defined thermal properties. They designed a material that can conduct heat along a preferred direction (an effect known as thermal anisotropy) and a material that can efficiently convert heat into electricity. They are using the latter design to fabricate a nanostructured silicon device for waste heat recovery. By inputting the desired thermal properties into their software system and a design that can achieve those properties, and that can realistically be fabricated. In addition to creating computer chips that can dissipate heat, the technique could be used to develop materials that can efficiently convert heat into electricity, known as thermoelectric materials. These materials could capture waste heat from a rocket's engines, for instance, and use it to help power the spacecraft.

Cobalt-based Catalysts Could Enable Efficient Plastics Recycling

Researchers from MIT have found a chemical process using a catalyst based on cobalt that is very effective at breaking down a variety of plastics, such as polyethylene (PET) and polypropylene (PP), the two most widely produced forms of plastic, into a single product, propane. Propane can then be used as a fuel for stoves, heaters, and vehicles, or as a feedstock to produce a wide variety of products — including new plastics, thus potentially providing at least a partial closed-loop recycling system. The researchers tested their system on a real example of mixed recycled plastic, producing promising results. But more testing will be needed on a greater variety of mixed waste streams to determine how much fouling takes place from various contaminants in the material — such as inks, glues, and labels attached to the plastic containers, or other nonplastic materials that get mixed in with the waste — and how that affects the long-term stability of the process.

Precise DNA Cleavage Using New CRISPR-Cas Approach

Researchers at Massachusetts General Hospital (MGH) has overcome a major constraint for cutting and editing DNA by CRISPR-Cas enzymes and other technologies which could simplify and expedite molecular cloning approaches and expand their utility. Although CRISPR-Cas tools can be programmed to target and cut virtually any DNA sequence, a major constraint in their targeting is the requirement to first recognize a short sequence flanking the target called a protospacer adjacent motif (PAM). Therefore, DNA could previously only be cut at sites flanking this specific motif. In this latest research, the team engineered a nearly PAMless CRISPR-Cas9 variant, named SpRY, and tested its utility to serve as a universal DNA cleavage tool. By designing SpRY and guide RNA (gRNA) complexes that targeted more than 130 DNA sequences in laboratory experiments, the scientists discovered that SpRY is PAMless in vitro and can effectively cleave DNA at any sequence programmed by the gRNA. The investigators also showed that their technology can overcome limitations of restriction enzymes. This method permits researchers to cut DNA in a test tube at any DNA location of choice. The new

capabilities will accelerate and reduce the cost of various basic research applications, including for studies that could have eventual clinical implications.

Diverting Asteroids to Protect the Earth

A NASA spacecraft on 26 September collided with an asteroid and succeeded in altering its orbit around another asteroid, with better-than-expected results. The Double Asteroid Redirection Test (DART) spacecraft moved the asteroid Dimorphos closer to its partner, Didymos, and cut its orbit time around that rock by around 32 minutes. The agency tested the maneuver on them to prove that humanity could, in principle, deflect a worrisome space rock heading for Earth. More than a half dozen telescopes around the world were used to observe Didymos and Dimorphos, which are millions of kilometres from Earth and only a few hundred metres across. Observations agreed that DART's impact knocked Dimorphos tens of metres closer to its companion and cut its cycle time to around 11 hours and 23 minutes. For now, the results indicate that the US\$330-million DART mission was a success. But defending Earth from future asteroid impacts requires launches years in advance to deflect it safely.

COVID-19

COVID-19 (WORLD)

New Coronavirus Subvariant BA.2.75.2 Causes Concerns

The growth of several new emerging sub variants of Covid-19 is causing concern as winter approaches. Among them is BA.2.75.2, which might start to evolve as a challenging variant. BA.2.75.2 can escape antibodies from vaccination or previous disease. Another subvariant, BA.2.3.20, could potentially be even worse because it has lots of mutations, and a fourth subvariant worth watching is known as XBB. Another subvariant, BF.7, also known as BA.5.2.1.7, has been contributing to a significant share of cases in Belgium and other European countries. It is hoped that updated bivalent boosters formulated specifically to target BA.5 and BA.4 — will also afford extra protection against those subvariants' descendants, such as BF.7 and BA.4.6. However, the new strains could begin a new surge and potentially reinfect people who have recovered even recently. People at higher risk, require more frequent booster shots to keep them better protected.

New COVID-19 Subvariant is Highly Contagious

Infections from a highly mutated subvariant called BQ.1.1 are doubling every week in the UK—a rate of growth that far exceeds other leading subvariants. In the U.S., BQ.1.1 is spreading twice as fast as its cousin subvariant BA.2.75.2. BQ.1.1 is very contagious and it also evades certain antibodies. Antibody therapies—evusheld and bebtelovimab, for example are ineffective. However, the latest “bivalent” messenger-RNA boosters are effective against this subvariant. Highly contagious and immune-evasive, BQ.1.1 is poised to take advantage of an increasingly vulnerable global population as antibodies from vaccinations and past infection gradually wear off in the coming months. BQ.1.1 has three major mutations on its spike protein—N460K, K444T, and R346T— that make it more contagious.

COVID-19 (INDIA)

Coronavirus-bursting Antibody Developed

Indian scientists have developed a coronavirus-busting antibody that counters a wide range of COVID-19 variants, a breakthrough which paves the way for new treatments and vaccines for the virus. They have tagged the antibody 002-S21F2. The novel Ab (antibody) has excellent potential as a therapeutic agent against a broad range of SARS-CoV-2 variants. The antibody has been tested against SARS-CoV-2 variants including Alpha, Beta, Gamma, Delhi, and the different Omicron sub-lineages including, BA.1, BA.2 and others. The results showed that 002-S2-1F2 maintains its neutralization potency against all these variants of concern. What makes this new antibody effective against different strains is that it targets a portion of the virus that remains the same, whatever the variant. This means that the antibody can be applied to a diverse spectrum of the emerging SARS-CoV-2 variants. Scientists at ICGEB believe the development of human monoclonal antibody 002-S21F2 is the answer to the problem of mutations in the virus.

INDIA–SCIENCE & TECHNOLOGY

Gold Nanoparticles Drug Delivery Method to Improve Cancer Management and Treatment

Researchers at Amity University Rajasthan, Jaipur have developed therapeutic agents with the help of nano-biotechnological approaches using a unique solution of ‘gold nanoparticles’ that helps in improving the site-specific drug delivery for cancer disease management and its effective treatment. The research covered lung cancer cells using functional silver nanoparticles and selective anti-cancer effects originating from surface chemistry of silver nanoparticles was demonstrated. Now, the team is planning clinical studies on the formulated nanoparticles. Some of the important physicochemical characterization and biological studies of gold nanoparticles were performed on Fourier-transform infrared spectroscopy (FTIR) and fluorescent microscopy facilities. The study will open new opportunities for better cancer management and treatment and pave a way for future nanomedicine even beyond cancer.

Quantum Entanglement to be Harnessed for Energy Storage Technology

Indian scientists are exploring connections between the laws of thermodynamics and Quantum Information Theory (QIT). This new concept could facilitate harnessing quantum entanglement for futuristic energy storage technology. The scientists have theorized a concept called ‘ergotropy’ that represents the amount of extractable work from a system by keeping its entropy (measure of randomness of a system) constant. The idea, if harnessed, can open pathways for putting quantum batteries to use in a way that is much more efficient than its classical counterpart. They have proposed thermodynamic quantities that capture a signature in multipartite quantum systems called ‘genuine multipartite entanglement where several particles behave like a single unit even when they are separated. Scientists have turned their attention to genuine multipartite entangled systems which have more drastic manifestations. Identification, characterization, and quantification of entanglement are of extreme practical relevance.

[IISc-Power Grid Corporation Tie Up to Tackle Cyber-Security Challenges](#)

The Power Grid Corporation of India Limited and Indian Institute of Science, and the Foundation for Science, Innovation and Development at IISc have entered a partnership to establish a centre of excellence in cybersecurity in power transmission and grid operations. This will be a nodal centre and a think-tank where cyber security experts from academia, national research and development labs, and the industry will work together to address cybersecurity concerns related to power grids. Continuous and collaborative research involving academia and industry for development of robust resilient cyber defense is significant for reliable power supply.

IN BRIEF

[Creating a Mouse Embryo from Stem Cells](#)

A team of researchers led by the California Institute of Technology, has developed a way to grow mouse embryos from three kinds of stem cells without using mouse eggs or sperm to learn more about early mammalian development. The researchers were able to grow a mouse embryo that matured to the point of having a beating heart and the beginnings of a brain. They isolated three main types of stem cells that made up the cell masses in early embryo development: pluripotent, which eventually grow to become body tissue, and two other types that grew to become the amniotic sac and placenta. They also noted the quantities of each type of stem cell. By using the three types of stem cells in a lab setting the researchers grew an embryo that matured enough to allow for study of its development. They added genetically engineered cells to see how it impacted maturation of the embryo. They found they could replicate some of the same brain development issues that have been seen in human embryos.

[New Technology in Plastics Recycling](#)

Scientists from Oregon State University have found a way for expanding the range of plastics that can be recycled. The team combined chemical and biological processes to break down mixed plastic waste into smaller, biologically friendly chemicals, and then use a biologically engineered soil microbe to process those chemicals. The team applied the process to a mix of three common plastics: polystyrene, polyethylene terephthalate, and high-density polyethylene. The oxidation process broke down the plastics into a mixture of compounds including benzoic acid, terephthalic acid, and dicarboxylic acids that, in the absence of the engineered soil microbe, would require advanced and costly separations to yield pure products. The researchers engineered the microbe, *Pseudomonas putida*, to biologically process the mixture into one of two products – polyhydroxyalkanoates, an emerging form of biodegradable bioplastics, and beta-ketoadipate, which can be used in the manufacture of performance-advantaged nylon. Testing the process with other types of plastics including polypropylene and polyvinyl chloride will be the focus of upcoming work.

[New Technique that Charges EV Battery in 10 Minutes](#)

Penn State researchers have found a way to enable a 10-minute charge time for a typical EV battery. The technology relies on an active method of temperature control to demand the best performance possible from the battery, by regulating the temperature from inside the battery. The researchers added an ultrathin nickel foil as the fourth component besides anode, electrolyte,

and cathode. Acting as a stimulus, the nickel foil self-regulates the battery's temperature and reactivity which allows for 10-minute fast charging on just about any EV battery.

Fast 3D Microprinting with Two Lasers

A research team led by Karlsruhe Institute of Technology (KIT), has developed a laser printing process that can rapidly print micrometer-sized parts. They used a method called light-sheet 3D printing. Blue light is projected into a container filled with a liquid resin. The blue light pre-activates the resin. In a second stage, a red laser beam provides the additional energy needed to cure the resin. They used a resin with a return time was less than 100 microseconds, which allows for high printing speeds. Researchers built a special 3D printer. In this printer, blue laser diodes are used to project images into the liquid resin using a high-resolution display with a high frame rate. The red laser is formed into a thin "light sheet" beam and crosses the blue beam vertically in the resin. With this arrangement, the team was able to 3D print micrometer-sized parts in a few hundred milliseconds. With more sensitive resins, one could use LEDs instead of lasers in our 3D printer. Ultimately, the goal is to print 3D structures that are centimeters in size, while maintaining micrometer resolution and high printing speeds.

Smart Plastic Material for Soft, Flexible Robotics and Electronics

Researchers at the University of Texas at Austin have produced a new material that is 10 times as tough as natural rubber and could lead to more flexible electronics and robotics. They started with a monomer, added a catalyst which with visible light, resulted in a semicrystalline polymer like those found in existing synthetic rubber. A harder and more rigid material was formed in the areas the light touched, while the unlit areas retained their soft, stretchy properties. Because the substance is made of one material with different properties, it was stronger and could be stretched farther than most mixed materials. The reaction takes place at room temperature, the monomer and catalyst are commercially available, and researchers used inexpensive blue LEDs as the light source in the experiment. The reaction also takes less than an hour and minimizes use of any hazardous waste, which makes the process rapid, inexpensive, energy efficient and environmentally benign. The researchers will next seek to develop more objects with the material to continue to test its usability. The material could be used as a flexible foundation to anchor electronic components in medical devices or wearable tech. In robotics, strong and flexible materials are desirable to improve movement and durability.

RESOURCES & EVENTS

World's Largest Flow Battery Connected to the Grid in China

The Chinese city of Dalian has just switched on a world-leading new energy storage system, expected to supply enough power for up to 200,000 residents each day. With an initial capacity of 400 MWh and output of 100 MW, the Dalian Flow Battery Energy Storage Peak-shaving Power Station will serve as a power bank for the city and assist in its uptake of renewable energy sources such as wind and solar. It is a vanadium flow battery, which uses massive tanks to store chemical energy in the form of liquid electrolytes and can be converted into electricity by passing the fluid through a special membrane. This lends itself well to the storage of wind and solar, which can be intermittent by nature, and could see these sources leveraged to help cities deal with spikes in energy demand. The Dalian Flow Battery Energy Storage Peak-shaving

Power Station is designed to be scaled up and eventually output 200 MW with an 800-MWh capacity.

Menace of Short Lived Climate Pollutants

The Global Methane, Climate and Clean Air Forum, 27-29 September 2022 in Washington DC, USA, gathered leaders around the theme of “a call to fast action,” to build up global ambition to rapidly reduce emissions from methane and other short-lived climate pollutants (SLCPs), such as black carbon, hydrofluorocarbons (HFCs), and tropospheric ozone. As opposed to carbon dioxide (CO₂), SLCPs only remain in the Earth’s atmosphere for a few years, but their global warming potential (GWP), can be between 80 to 1,500 times greater than that of CO₂. The meeting brought together high-level officials and actors from both government and the private sector who focused on ways to achieve fast climate action by reducing SLCPs in the atmosphere.

US Releases New Arctic Strategy as Climate Threat Grows

US President Joe Biden's administration released a new Arctic strategy on 7 October as the region suffers effects from climate change and sees increased international competition. Global warming is melting Arctic ice, opening previously closed areas to navigation, and creating new opportunities for countries such as the United States, Russia, and China to vie for resources and influence. The situation is further complicated by the tensions between Russia—a major Arctic power and the US to a level not seen since the height of the Cold War. The strategy features four main pillars: security, climate change and environmental protection, sustainable economic development, and international cooperation. The US will enhance and exercise both military and civilian capabilities in the Arctic to deter threats and to anticipate, prevent, and respond to both natural and human-made incidents. The US government will promote responsible, inclusive, and transparent economic development in Alaska and across the Arctic. It also recognizes the increased strategic competition in the Arctic in terms of Russia and China over the last decade.

New US Executive Order on Data Privacy Framework

US President Biden signed an [Executive Order on Enhancing Safeguards for United States Signals Intelligence Activities \(E.O.\)](#) directing the steps that the United States will take to implement the U.S. commitments under the European Union-U.S. Data Privacy Framework (EU-U.S. DPF). The Executive Order bolsters privacy and civil liberties safeguards for U.S. signals intelligence activities and creates an independent and binding mechanism enabling individuals to seek redress. It requires that U.S. signals intelligence activities, be conducted only in pursuit of defined national security objectives; take into consideration the privacy and civil liberties of all persons, regardless of nationality or country of residence; and be conducted only when necessary to advance a validated intelligence priority and only to the extent and in a manner proportionate to that priority. It provides for a Data Protection Review Court (“DPRC”) to provide independent and binding review of decisions and for a special advocate in each case who will advocate regarding the complainant’s interest in the matter and ensure that the DPRC is well-informed of the issues and the law about the matter. These steps will enable important, accessible, and affordable data transfer mechanisms under EU law and greater legal certainty for companies to transfer EU personal data to the United States. The order is a step in the creation of a new transatlantic data-sharing agreement that is needed for flows of data between the US and the EU. The European Commission will use the text in framing its own rules by March 2023.

China Attacks US for Chip Export Ban

The Chinese Foreign Ministry has criticized the US' tightened control as the violation of international economic and trade laws that will “isolate and backfire” on Washington. It asserted that the US ban on semiconductor chips has been imposed "to maintain US sci-tech hegemony, and to maliciously block and suppress Chinese companies, and that it will not only damage the legitimate rights and interests of Chinese companies, but also affect American companies' interests. China labeled the ban as the weaponization and politicization of technology and an attempt to create hindrances to the international tech exchanges and economic cooperation. Such bans would not stop China's tech development. The US had imposed restrictions aimed at keeping the "sensitive technologies with military applications" away from China's military, intelligence and security services and preserving the United States' own national security and foreign policy interests. Taiwan has issued a statement saying that it would abide by the US export controls. An official said that the unilateral controls on China "will lose effectiveness over time if other countries don't join us." and risks harming US technology leadership if foreign competitors are not subject to similar controls.

SCIENCE POLICY AND DIPLOMACY

\$500 Million International Project for Brain Mapping

The National Institutes of Health's BRAIN Initiative has just announced \$500 million in funding over five years for an effort to characterize and map neuronal and other types of cells across the entire human brain. The project will be spearheaded by the Allen Institute in Seattle but involves collaborations across 17 other institutions in the US, Europe, and Japan. The new project builds on a previous effort to identify and map more than 100 cell types across the motor cortex of a mouse and will borrow many of the tools and techniques developed for that effort. These include approaches like single-cell transcriptomics, which make it possible to measure the gene expression of individual cells, and spatial transcriptomics, which make it possible to map gene expression over large sections of tissue and localize gene activity to specific regions. A group from the Salk Institute in San Diego will also focus specifically on how the brain changes as we get older by measuring changes in gene expression over time—known as epigenetic changes—in brain samples from people of varying ages. The resulting cell atlas will become a powerful and freely accessible resource for neuroscientists all over the world.

IPCC Prepares for Seventh Assessment Cycle

The 57th session of the Intergovernmental Panel on Climate Change (IPCC) was held in Geneva from 27-30 September in person for the first time since COVID-19-related disruptions set in. Participants focused on the need to prepare for a smooth transition to the next assessment cycle, including by identifying lessons learned from the challenges and successes of the current cycle. IPCC-57 was the first meeting without a report to approve since March 2021. Approval of the Synthesis Report (SYR) from the sixth assessment cycle had been postponed from IPCC-57 until IPCC-58 in March 2023, resulting in criticism about the IPCC's impact and credibility. IPCC-57 agreed that the next assessment cycle should start in July 2023 and set its length to five to seven years, keeping the door open for the Seventh Assessment Report (AR7) to feed into the second Global Stocktake in 2028.

US Plans to Police Misuses of Artificial Intelligence

The US government published a detailed plan for policing misuses of artificial intelligence sector by sector, rather than across all applications of the technology at once. The approach highlights a growing disagreement with the EU over AI regulation. The “Blueprint for an ‘AI Bill of Rights’”, released by the White House on 4 October laid out how it proposes to protect people from misuse, fraud or errors as AI systems roll out across the economy. Rather than ban any AI technology such as facial recognition across the country, each government agency will work to prevent abuses of any AI technology in its own domain – whether housing, healthcare, transport, education, procurement, or other fields. Officials called it a “whole of government” policy involving 30 or more agencies, because each agency is best placed to watch for and deal with possible abuses of the technology in its own area. The announcement comes amid growing international concern about abuses of AI – with some stark differences of opinion emerging between the US and EU on how to deal with them. At stake is an emerging global trade in AI technologies, which so far has been led by US tech companies, but with competition mounting fast from China. The US report cites several specific cases of AI abuse or error that have already harmed people. It attempts to spell out five fundamental rights that the agencies will be looking to protect. People, it says, should be protected from unsafe or ineffective systems, and from discrimination by algorithm. Further, people’s privacy must be protected, and they should be told when an AI system is being used on them. Lastly, they should have an opt out to talk to a human rather than be locked in an endless cycle of AI systems.

Towards a Science-Policy Panel on Chemicals

On 6 October delegates convened to begin deliberations on the establishment of a science-policy panel mandated in UNEA-5’s resolution earlier in 2022, which established a process for a Science Policy Panel (SPP) on chemicals, wastes, and pollution. Discussions focused on a timetable and organization of work for the Open-ended Working Group (OEWG), and on preparation of proposals for establishing an SPP. During the discussions, participants underscored: the need for a flexible, “lean” SPP that is policy relevant, not policy prescriptive; and the opportunity to leverage the experience of similar SPPs when discussing function, scope, and form. The group generally agreed that three meetings of the OEWG scheduled for 2023-2024 would be sufficient, with an intergovernmental meeting after that to consider the SPP proposal developed by the OEWG. The experiences of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Intergovernmental Panel on Climate Change (IPCC) would be considered. There was general agreement on a stepwise approach whereby scope and function of the SPP should be addressed first, while the form, policies, and procedures should be dealt with second. For details see https://enb.iisd.org/sites/default/files/2022-10/enb3701e_0.pdf.

We welcome your comments and valuable suggestions. Please write to us for receiving publications, updates and notices regarding seminars, conferences etc.

NOTE TO OUR READERS AND STAKEHOLDERS:

The Science Diplomacy Programme at RIS has been sending you the fortnightly issues of Science Diplomacy Alerts regularly. 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.