Issue 180 | 15-30 April 2026

Forum for Indian Science Diplomacy

Science Diplomacy Alert

A Fortnightly newsletter on S&T, Science Policy and Diplomacy

Focus

India-Republic of Korea Scientific Cooperation

The India-Korea bilateral partnership aims for a shift from economic ties to a comprehensive strategic partnership spanning Indo-Pacific security, emerging technologies, defence, and climate cooperation, as envisioned in The India-Republic of Korea (ROK) Joint Strategic Vision (2026-2030). Its success depends on addressing trade imbalances, deepening defence and tech collaboration, and aligning geopolitical priorities to fully realise the partnership's potential. Sanjeev K. Varshney writes.

Read More

SCIENCE POLICY & DIPLOMACY

International S&T Cooperation

Indonesia and Austria to Strengthen Higher Education and Research Cooperation

Indonesia and Austria aim to strengthen cooperation in higher education and research, including student exchange programmes, scholarships and university partnerships. Both countries will explore integrated programmes and large-scale joint projects, including government-to-government financing, to support innovation-driven development.

Permanent Working Group on Scientific and Technical Cooperation of the Shanghai Cooperation Organization (SCO) Member States Hold Virtual Meeting

The meeting chaired by the Kyrgyz Republic, discussed the progress of preparations for the upcoming meeting of the Head of Ministries and Agencies of Science and Technology of the SCO member states.

Latvia and Jordan Join the Artemis Accord

Latvia and Jordan signed the Artemis Accords on 20 and 23 April 2026 respectively, as NASA works to attract more countries to its lunar exploration efforts. In a ceremony at the NASA Headquarters, Dina Kawar, Jordan's Ambassador to the United States, signed the Accords becoming the 63rd country to sign the Accords.

Federal Chancellor of the Republic of Austria on a State Visit to India

Leaders emphasized high-technology cooperation as a core pillar of the India–Austria partnership, highlighting joint R&D in fields like quantum tech, AI, materials science, and wastewater treatment. They called for stronger collaboration among research institutions, universities, and industry. They also noted growing ties between AIT and Indian partners, especially in electrical equipment, with advanced innovations offering strong potential for expanded joint research.

India to Host the Fourth India-Africa Forum Summit

India will host the 4th India–Africa Forum Summit (IAFS-IV) on 31 May 2026 in New Delhi with the African Union Commission, bringing together leaders to strengthen ties and set a future cooperation roadmap. The External Affairs Minister, Dr. S. Jaishankar unveiled the logo, theme and website of the IAFS-IV. The Summit will be held under the theme 'IA SPIRIT: India Africa Strategic Partnership for Innovation, Resilience, and Inclusive Transformation', and will be preceded by senior officials and foreign ministers' meetings, with its logo, theme, and website unveiled on 23 April 2026.

South Korea and Quebec Discuss AI and Science Cooperation

As both countries discuss cooperation, it was noted that combining Canada's advanced AI with South Korea's strength in AI chips and manufacturing can boost both countries' industrial competitiveness. As submarine project talks continue, South Korea aims to expand cooperation with Canada in AI and science technology to create stronger synergy.

Masaryk University Faculty of Science Expands Antarctica & Space Research Cooperation with Chilean Antarctic Institute

The Faculty of Science at Masaryk University is strengthening international partnerships in Antarctic and space research through new agreements and joint projects. It includes collaboration with Chile's Antarctic institute and participation in advanced space instrumentation initiatives.

Emerging Tech & Governance

India's First Advanced 3D Semiconductor Packaging Unit Launched in Odisha

India has laid the foundation for its first advanced 3D semiconductor packaging facility at Info Valley, Bhubaneswar, a step towards strengthening the domestic chip manufacturing ecosystem to boost self-reliance in semiconductors and high-end electronics. With an investment of about ₹1,943 crore by 3D Glass Solutions, the facility will support AI, 5G/6G, defence, aerospace, and next-generation digital technologies.

Perovskite Quantum Dots Overcome Key Barriers

Researchers from LMU Munich and collaborating institutions overcame key challenges in perovskite quantum dots, enhancing stability in polar solvents and achieving atomic-level growth control. The breakthrough enables precise tuning of optical properties, advancing applications in LEDs, optoelectronics, and quantum technologies.

AI Model 'Reads' Protein Pairs for Drug Discovery

Researchers at the National University of Singapore developed an AI model that can 'read' protein pairs, improving how scientists predict protein interactions. The paired protein language model learns from interacting proteins together, boosting prediction accuracy and insights into diseases like cancer. This breakthrough could accelerate drug discovery and enable more precise, AI-driven therapeutic design.

IIT Madras SWAYAM Plus Launches Three AI Courses

IIT Madras SWAYAM Plus launched three new AI courses, strengthening accessible, industry-aligned digital education. The initiative marked a significant step toward building future-ready skills and expanding India's AI talent ecosystem.

Events & Meetings

John Hopkins Science Diplomacy Summit 2026

Held at the Johns Hopkins University Bloomberg Center in Washington, D.C., the summit brought together over 500 global experts to highlight how science diplomacy is becoming essential to tackle complex challenges from AI governance to health and climate through international cooperation. The discussions highlighted that cross-border scientific partnerships and shared frameworks are critical to

building trust, accelerating innovation, and addressing global issues collectively.

Conference on Transitioning Away from Fossil Fuels

Held in Santa Marta, Colombia from 24–29 April 2026, the conference brought together representatives from around 50 countries to advance global efforts on phasing out fossil fuels. Discussions focused on coordinated energy transition strategies, climate diplomacy, and strengthening international cooperation for a low-carbon future.

INDIAN SCIENCE NEWS

India Launches Indigenous Silicon Photonics Technology Solutions at IIT Madras

India has launched key silicon photonics tools including a Process Design Kit and programmable photonic IC test engine developed at IIT Madras. The initiative will act as a shared national R&D facility, enabling startups, industry, and academia to design advanced photonic chips and strengthen India's semiconductor and quantum technology ecosystem.

Smart Oxide for Energy Storage and Charge Sensing

Scientists developed a novel smart oxide that stores energy and changes colour to indicate its charge level. This dual-function material marks a breakthrough in energy storage and electrochromic technology, enabling smarter, more efficient devices. Developed at CeNS, Bengaluru, it demonstrates strong stability, fast switching, and real-world potential in next-generation electronics.

High-resolution Imaging Shines Light on Nanoscale Nuclear Organisation

Researchers at IISc have developed an advanced DNA-PAINT based imaging technique to map multiple biomolecules inside a cell nucleus at nanometer-scale resolution. The study reveals how proteins involved in gene transcription and nuclear structure are spatially organised in cancer cells. This offers a detailed view of nuclear architecture and how it changes under different cellular conditions.

Achieving Wafer-scale Growth of 2D Magnetic Materials

Researchers at IISc have developed a scalable technique to grow high-quality two-dimensional magnetic materials across centimetre-scale wafers, overcoming the earlier limitation of producing only microscopic flakes. The method enables uniform, low-defect films that retain magnetic properties at atomic thickness, making them suitable for future spintronic and electronic devices. This marks an important step toward real-world integration of 2D magnetic materials in advanced technologies.

ADVANCES IN S&T

Hemp-Based Plastic Offers Sustainable Packaging Alternative

The Problem: Conventional plastics like PET rely heavily on fossil fuels and contribute to microplastic pollution and health risks. Existing bio-based alternatives often lack durability, heat resistance, and scalability, limiting their real-world use.

The Method: Researchers from University of Connecticut and Purdue University developed a hemp-derived thermoplastic using cannabidiol (CBD) as a safer alternative to bisphenol-A. The material demonstrates high stretchability (up to 1600 per cent), strong heat resistance, and melt processability, making it suitable for films, coatings, and packaging.

Future Prospects: This innovation could replace petroleum-based plastics in packaging, electronics, and medical applications, reducing environmental impact. With rising hemp

cultivation, the material has potential for scalable, cost-effective production, advancing the transition to sustainable plastics.

Self-Organizing Laser Beam Transforms Brain Imaging

The Problem: Imaging delicate brain structures like the blood-brain barrier is slow and technically limiting. Existing methods require sequential scanning and face trade-offs between speed, resolution, and depth, making real-time drug tracking difficult.

The Method: Researchers at Massachusetts Institute of Technology discovered that chaotic laser light can self-organize into a focused "pencil beam" under precise alignment and high-power conditions. This enabled 3D imaging up to 25× faster while maintaining high resolution without complex optical engineering.

Future Prospects: The technique could accelerate drug discovery for neurological diseases by tracking how therapies reach brain cells in real time. It also opens new avenues for advanced bioimaging across neuroscience and tissue engineering.

INSIGHTS & RESOURCES

NITI Aayog Launches DPI@2047 for Viksit Bharat

NITI Aayog has launched DPI@2047 for Viksit Bharat, a strategic roadmap to drive India's next phase of Digital Public Infrastructure (DPI) toward inclusive, high-productivity growth. Building on 15 years of DPI-led welfare and financial inclusion, the plan aims to transition India from basic inclusion to broad-based prosperity through scalable digital ecosystems. Key highlights include:

- DPI 1.0 Learnings
    - Enabled large-scale inclusion, service expansion, and economic activity.
    - Created a non-linear growth trajectory as more users and businesses joined digital platforms.
- Two-Phase Roadmap
    - Focus on building a capable society first, then accelerating toward inclusive prosperity through compounding digital growth.
- DPI 2.0: Eight Sectoral Transformations
    - Mass Inclusion
        - MSME market expansion via better market access and compliance simplification.
        - Digital job matching for MSMEs and local talent.
        - Improved farmer livelihoods through advisory, credit, and market linkages.
    - Human Capability Foundations
        - Learner-centric education with equitable, multilingual access.
        - Universal health coverage to protect families from financial shocks.
    - Systemic Enablers

        - Expanded access to microcredit using monetizable assets.
        - Decentralized renewable energy markets.
        - Efficient, inclusive delivery of social benefits.
    - Execution Strategy (4 Pillars)
        - District-level programs to aggregate demand and localize solutions.
        - Scaling tech entrepreneurship via incubators, R&D, and policy support.
        - Leveraging AI as a major productivity driver.
        - Cross-sector reforms: data access, AI democratization, human capacity building, and digital transactions.
    - Call to Action
        - DPI could contribute up to 4% of GDP by 2030.
        - Immediate steps include state-led execution, iterative 2-year transformation cycles, initial focus on MSMEs and agriculture (2026–27), and creating a global DPI collaboration platform.

The roadmap positions DPI as the backbone for achieving Viksit Bharat by 2047, emphasizing rapid, inclusive, and innovation-driven growth.

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

Visit us: Forum for Indian Science Diplomacy

RIS
Research and Information System
for Developing Countries
विकासशील देशो कें अनुसधांन एव सूचना प्रणाली