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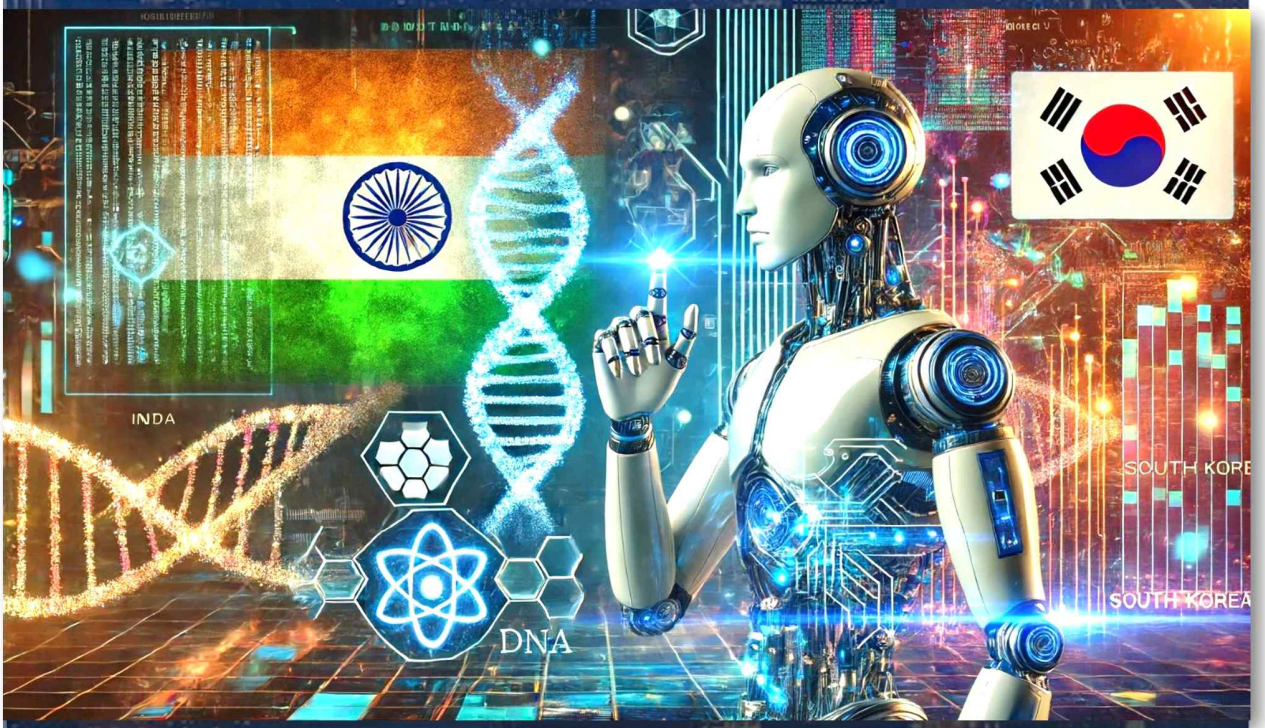
India-Korea Sci News



한-인도 연구혁신센터

India Korea Center for Research and Innovation

IKCRI
भारत कोरिया अनुसंधान तथा नवोन्मेष
한국인도연구혁신센터
India Korea Center for Research and Innovation

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◎ Intro...

Greetings from IKCRI.

I am Young Ho Kim, the Director of the India-Korea Center for Research and Innovation (IKCRI).

IKCRI is a public institution established to promote scientific and technological exchange and cooperation between South Korea and India. In 2018, during the Korea-India Summit meeting, both countries agreed to establish the center to enhance bilateral scientific and technological collaboration. Consequently, the Ministry of Science and ICT (National Research Foundation) of South Korea established IKCRI in New Delhi, India, in 2020.

In this era of global technological competition, countries are intensifying their efforts in advanced scientific and technological fields, including semiconductors. The government is strengthening global scientific and technological cooperation to achieve its goal of becoming a strong scientific and technological nation. India, in particular, possesses excellent capabilities in advanced scientific and technological fields, especially in space and IT sectors, and is investing heavily in fostering fields such as biohealth and digital technologies.

To provide important scientific and technological news, and information on key research institutions and experts from both South Korea and India, IKCRI has started publishing a regular booklet called 'India Korea Sci News.'

I hope for your keen interest in our booklet. We will work diligently to facilitate and promote active scientific and technological exchange and cooperation between South Korea and India, aiming to achieve fruitful outcomes.

Thank you.

Director/Dr. Young Ho Kim 김 영 호

1 India-Korea S&T News

▣ (S. Korea) SCIENCE & TECHNOLOGY NEWS

○ KRICT Develops Novel Electrode Material Extends the Lifespan of Next-Generation Lithium-Ion Batteries Threefold

The research team led by Dr. Kim Do-Yup, Principal Researcher at the Advanced Materials Division of Korea Research Institute of Chemical Technology (KRICT), has developed next-generation lithium-ion battery technology that can extend the lifespan by more than three times compared to conventional batteries.

Conventional lithium-ion batteries primarily use graphite as an anode material, but they face limitations such as low energy density and small theoretical capacity. Lithium metal has been considered an ideal electrode material to overcome these limitations, but its low stability and explosion risk have been problematic.

The KRICT research team has developed a new composite material by mixing lithium metal with a lithium-ion transfer material (Al-LLZO). This development not only significantly reduces the growth of problematic lithium dendrites but also extends the lifespan of lithium-ion batteries by more than three times.[1]

○ KAIST Develops Core Technology for Stretchable Displays

A joint research team from Korea Advanced Institute of Science & Technology (KAIST), Dong-A University, and Electronics and Telecommunications Research Institute (ETRI) has developed core display technology that maintains high resolution even when stretched. While there has been significant interest in developing stretchable display technology beyond conventional flat or curved monitors, existing stretchable displays often use fixed and rigid light-emitting parts with low light-emitting area ratios.

The research team has developed an ultra-thin OLED with excellent

flexibility, successfully achieving stretchability and high light-emitting density by hiding some light-emitting areas between two adjacent isolated regions. Furthermore, the team has confirmed that this technology can be used as a stable light source for wearable devices and free-form display on curved surfaces, such as spherical objects or human body parts.[2]

○ KRISS Successfully controls 'Skyrmion' at 2D Room Temperature for Next-Generation Semiconductor Devices

The Korea Research Institute of Standards and Science (KRISS) has developed technology to control 'skyrmions', a crucial advancement for next-generation semiconductor device, at two-dimensional (2D) room temperature. A 'skyrmion' refers to a helical structure with magnetism due to electron spin. While previous skyrmion research was conducted only in three-dimensional (3D) magnets, the first study using 2D magnets was reported in 2017.

The KRISS research team succeeded in generating and controlling skyrmions in 2D room temperature magnets. This technology not only significantly reduces power consumption by about one-thousandth compared to using 3D magnets but also demonstrates high stability and fast speed. The developed technology can be applied to AI semiconductors and room-temperature quantum computers in the future.[3]

○ Merck Bioprocessing Production Center to be Established in Daejeon, South Korea

The global healthcare and life sciences company Merck is establishing a bioprocessing production center in the International Science Business Belt located in Daejeon city, South Korea. For this purpose, Merck signed a Memorandum of Understanding (MoU) with the Ministry of Trade, Industry and Energy of Korea and Daejeon Metropolitan City in May 2023.

On May 29, 2024, a groundbreaking ceremony was held for the Merck bioprocessing production center in the International Science Business Belt hub zone in Daejeon. Merck has decided to invest 300 million EUR (430 billion KRW) for the construction of the bioprocessing production center,

which will cover an area of 43,000 square meters and is expected to be completed by the end of 2026. This bioprocessing production center will support the entire process from biopharmaceutical development to clinical stages and manufacturing, targeting biopharmaceutical companies throughout the Asia-Pacific region.[4]

▣ (India) SCIENCE & TECHNOLOGY NEWS

○ ISRO's Gaganyaan Program: Launch of Humanoid Robot Vyommitra in 2024, Manned Mission in 2025

In a significant development, the Indian Space Research Organisation (ISRO) is set to launch the humanoid robot Vyommitra into space in the third quarter of 2024, as announced Union Minister of Science and Technology, Dr. Jitendra Singh. Vyommitra, derived from the Sanskrit words "Vyoma" meaning space and "Mitra" meaning friend, is designed to monitor module parameters, issue alerts, and execute life support operations in space. This mission is part of ISRO's uncrewed flight tests for the Gaganyaan program, with the first crewed mission scheduled for 2025. The successful launch of Vyommitra signifies India's progress in space exploration and its commitment to advancing scientific innovation.[5]

○ Indian Researchers Develop AI Tool for Accurate Reading of Pregnancy Scans

Doctors in six Indian hospitals may soon utilize an AI tool, Garbhini-GA2, developed by IIT Madras and THSTI, to improve the diagnosis of fetal abnormalities and accurately determine gestational age, particularly for women attending late-stage pregnancy check-ups. This tool, installed in ultrasound machines, addresses the issue of inaccurate due dates often resulting from second-trimester scans. Garbhini-GA2 aims to reduce infant and maternal mortality rates by providing precise pregnancy dating, enabling timely scans and tests to manage complications and determine optimal delivery windows.

According to the National Family Health Survey, 30-40% of pregnant women in India only receive their first scans in the second trimester, making accurate dating challenging. The tool's initial implementation will be studied in hospitals across NCR, Assam, Gujarat, Telangana, and Puducherry.[6]

○ India's New Hypervelocity Facility at IIT Kanpur: Advancing Aerospace Capabilities

The Hypervelocity Expansion Tunnel Test Facility, dubbed S2, at IIT Kanpur is a groundbreaking achievement for India's aerospace capabilities. This facility, developed over three years with support from various organizations, enables the simulation of extreme hypersonic conditions, crucial for aerospace research and defense applications. With the ability to generate speeds ranging from 3 to 10 kilometers per second, S2 puts India in an elite group of countries with advanced hypersonic testing capabilities.[7]

○ Scientists at MNNIT Generate Electricity from Dirty water

Scientists at Motilal Nehru National Institute of Technology (MNNIT) have developed a groundbreaking method to generate electricity from polluted water using microbial fuel cells. Led by Assistant Professor Radharani, the team's research not only produces electricity but also purifies water for various uses. This development, awarded a 10-year patent by the Government of India, offers promising solutions for environmental sustainability and energy access, with potential applications in remote areas and industries. Additionally, a previous achievement by a research scholar at MNNIT, Jeetendra Prasad, who harnessed electricity from soil, demonstrates the institute's commitment to technological advancements for societal benefit.[8]

2 India-Korea Policy News

▣ (S. Korea) S&T POLICY NEWS

○ Establishment of the Korea AeroSpace Administration, Overseeing South Korea's Aerospace Sector

The Korea AeroSpace Administration (KASA), under the Ministry of Science and ICT, was inaugurated in Sanam-myeon, Sacheon city, Gyeongsangnam-do, South Korea on May 27, 2024. The newly established KASA serves as the control tower for South Korea's aerospace policies, R&D, and related industrial promotion. The Korea Aerospace Industries (KAI) in Sacheon city has led the aerospace industry for the past 40 years.

With this inauguration, government-funded research institutions, including the Korea Aerospace Research Institute and the Korea Astronomy and Space Science Institute, have been transferred to be under the jurisdiction of KASA. These research institutes will continue their existing projects and directly conduct R&D.[9]

○ Ministry of Science and ICT Expands Support for 'Global R&D'

The Ministry of Science and ICT (MSIT) in South Korea has announced the major policy implementation plan for this year aiming to become a 'global science and technology powerhouse and leap to a digital role model country'. The four major strategies for achieving this goal: (1) Establishing South Korea as the world's top R&D hub, (2) Driving innovation through challenging R&D, (3) Leading AI and digital transformation, and (4) Promoting warm AI and digital technologies with the public.

The Ministry of Science and ICT stated that the government investment in global R&D will expand from 500 billion KRW last year to 1.8 trillion KRW this year. Additionally, to attract foreign talent, comprehensive support services covering the entire settlement process (entry, living, and citizenship acquisition) will be provided. Furthermore, to elevate S. Korea as a technological powerhouse, the Ministry is focusing on achieving breakthroughs

in three key areas: 'quantum,' 'AI,' and 'advanced biotechnology.'

The Ministry also announced the focused development of three globally leading technologies: next-generation semiconductors (AI semiconductors, compound semiconductors, advanced packaging), next-generation networks, and space. Particularly in the space sector, the government plans to establish a space industry cluster centered around Daejeon, Jeonnam, and Gyeongnam, in conjunction with the launch of the Korea AeroSpace Administration this year.[10]

○ South Korea-US-India Critical and Emerging Technology (CET) Dialogue: Collaboration in Bio, Space, and Other Technologies

The governments of South Korea, the United States, and India held a Critical and Emerging Technology (CET) Dialogue meeting on March 12, 2024, in Seoul to discuss cooperation in key emerging technology fields. During the meeting, specific cooperation plans were discussed in areas such as 'bio and pharmaceuticals,' 'semiconductor supply chains,' 'clean energy and critical minerals,' 'artificial intelligence,' 'space,' 'quantum,' and 'advanced materials.'

The three countries are promoting cooperation in these crucial emerging technology fields such as bio, space, and quantum. The next meeting is scheduled to be held later this year.[11]

○ Ministry of Science and ICT Strengthens Support for Digital Bio R&D

The Ministry of Science and ICT (MSIT) in South Korea has announced its commitment to overcoming the high cost, long duration, and complexity of traditional bio R&D by integrating biotechnology with digital technologies such as artificial intelligence (AI) and big data. Minister Lee Jong-ho of MSIT visited LG Chem's AI-based drug development site in March and stated that the S. Korean government plans to strengthen support for 'Digital Bio' initiatives that incorporate digital technologies.

The MSIT established the '4th Basic Plan for the Advancement of Biotechnology' in June last year, which prioritizes 'biotechnology innovation through digital convergence' as a key task.[12]

▣ (India) S&T POLICY NEWS

○ Space Science Roadmap Formulation Meeting

The Space Science Roadmap Formulation (SSRF) meeting, held at the U R Rao Satellite Centre (URSC)/ISRO in Bengaluru on April 22-23, 2024, gathered over 200 scientists to discuss India's future space science program. Organized by URSC and ISRO's Space Science program office, the meeting focused on six themes: Astronomy & Astrophysics, Cosmology and Gravitation, Astrobiology, Heliophysics, Solar System Exploration, and Near-Earth Space Exploration. Key ISRO leaders and experts provided direction and insights, emphasizing collaboration with industries and engaging youth.

Plenary talks and focused discussions identified significant scientific problems for short-term (2030), mid-term (2031-2035), and long-term (2035-2045) exploration. Positive feedback highlighted the need to identify scientific overlaps and enhance capacity for the space science program's sustainability. The meeting's outcomes, to be documented and reviewed, aim to position India at the forefront of space science research and exploration.[13]

○ An Indian Success Story in Science and Technology over the Past Decade

India has made significant strides in science and technology (S&T) under Prime Minister Narendra Modi, despite criticism from Left-liberal circles. Over the past decade, substantial investments have doubled gross R&D expenditure from ₹60,000 crore in 2010-11 to ₹1.2 lakh crore in the last year, and the Council of Scientific and Industrial Research's (CSIR) budget has increased from ₹3,200 crore in 2013-14 to ₹6,700 crore in 2021-22. These investments have enhanced both the quality and quantity of scientific outcomes, with India's ranking in scientific publications has risen from 7th in 2010 to 3rd in 2023, and its position in the Global Innovation Index improving from 81 in 2013-14 to 40 in 2023.[14]

○ India Creates Non-Tariff Barrier for Chinese Solar Products

India's Ministry of New and Renewable Energy (MNRE) has brought back the Approved List of Models and Manufacturers (ALMM) mandate, effective April 1, 2024. This policy requires government-backed solar projects to use MNRE-approved products, protecting the domestic solar industry from Chinese competition and creating a significant market for Indian manufacturers. Industry leaders note that the mandate boosts local production and innovation, with companies like Goldi Solar planning major investments in manufacturing. The shift towards meeting domestic demand reduces dependence on Chinese components and aligns with government efforts to support local production.[15]

○ IISc, In Partnership With Lam Research, Successfully Concludes Pilot To Upskill Engineers In Semiconductor Fabrication Technology

The Indian Institute of Science (IISc) has successfully concluded a pilot program to upskill engineers in semiconductor fabrication technology, in partnership with Lam Research. Launched during Prime Minister Narendra Modi's state visit to Washington D.C. in July 2023, the program trained 32 MTech and PhD students using Lam's Semiverse Solutions□at IISc's Center for Nano Science and Engineering (CeNSE). Three students have secured placements at leading global semiconductor companies.

Following this success, IISc and Lam Research have signed an MoU with the India Semiconductor Mission to scale the program nationally, aiming to upskill 60,000 engineers over the next decade. The training included the use of SEMulator3D®, a 3D semiconductor process modeling software, enabling students to conduct virtual experiments at lower costs and with reduced environmental impact. Lam Research India, a longtime partner of CeNSE, continues to collaborate on advancing semiconductor technologies.[16]

3 Introduction to Research Institutions: IITs

▣ 23 Indian Institutes of Technology (IITs)

□ IIT overview

○ Background and Objectives

- Established as institutions focusing on engineering and technology for higher education
- Founded to provide skilled manpower for nurturing scientists and engineers

○ Establishment of IIT

- Most IIT were established during the 1950s and 1960s through special acts of the Indian Parliament
- Currently, there are 23 IITs (such as Delhi, Bombay, Kanpur, Madras, etc.) (refer to the below list and rankings)

○ Degree Programs and Major Fields of Study

- Specialization in fundamental, applied, and interdisciplinary areas in various fields of science and engineering
- Various degree programs are offered, including undergraduate programs, postgraduate programs, and master's and Ph.D. programs

○ Core Research Areas

- R&D Capabilities, Manufacturing Enhancement, and Cultivation of Successful Startup Culture
- Top 10 Technology Areas: Healthcare, Energy, Sustainable Habitat, Nanotechnology Hardware, Water Resources and River Systems, Advanced Materials, Information and Communication Technology, Manufacturing, Safety and Defense, and Environmental Science and Climate Change

[IIT Delhi Campus (Source: IITD)]

☐ The List and Rankings of IIT (Total 23 Universities)

No.	Name	National Institutional Ranking Framework NIRF 2023 Rank	Abbreviation	State/UT	Founded in (Established as IIT in)
1	**IIT Kharagpur**	6	IITKGP	West Bengal	1951(1951)
2	**IIT Bombay**	3	IITB	Maharashtra	1958(1958)
3	**IIT Madras**	1	IITM	Tamil Nadu	1959(1959)
4	**IIT Kanpur**	4	IITK	Uttar Pradesh	1959(1959)
5	**IIT Delhi**	2	IITD	Delhi	1961(1961)
6	**IIT Guwahati**	7	IITG	Assam	1994(1995)
7	**IIT Roorkee**	5	IITR	Uttarakhand	1847(2001)
8	**IIT Ropar**	22	IITRPR	Punjab	2008(2008)
9	**IIT Bhubaneswar**	47	IITBBS	Odisha	2008(2008)
10	**IIT Gandhinagar**	18	IITGN	Gujarat	2008(2008)
11	**IIT Hyderabad**	8	IITH	Telangana	2008(2008)
12	**IIT Jodhpur**	30	IITJ	Rajasthan	2008(2008)
13	**IIT Patna**	41	IITP	Bihar	2008(2008)
14	**IIT Indore**	14	IITI	Madhya Pradesh	2009(2009)
15	**IIT Mandi**	33	IITMD	Himachal Pradesh	2009(2009)
16	**IIT Varanasi**	15	IIT BHU	Uttar Pradesh	1919(2012)
17	**IIT Palakkad**	69	IITPKD	Kerala	2015(2015)
18	**IIT Tirupati**	59	IITTP	Andhra Pradesh	2015(2015)
19	**IIT Dhanbad**	17	IIT ISM	Jharkhand	1926(2016)
20	**IIT Bhilai**	81	IITBH	Chhattisgarh	2016(2016)
21	**IIT Dharwad**	93	IITDH	Karnataka	2016(2016)
22	**IIT Jammu**	67	IITJMU	Jammu and Kashmir	2016(2016)
23	**IIT Goa**	Un ranked	IIT GOA	Goa	2016(2016)

☐ The Location of IIT (Total 23 Cities)

4 Focus Interview

▣ Mr. Jin Young Yang (President, K-MEDIhub)

□ Mr. Jin-young Yang, could you introduce yourself?

Hello, I am Jin-young Yang, the president of K-MEDIhub. I was born in Geumsan, Chungcheongnam-do, South Korea in 1968. I worked for a long time at the the Ministry of Helath and Welfare and the Ministry of Food and Drug Safety after passing the administrative examination in 1992. I held positions including Director of Medical Device Safety Division and Director General for Planning and Coordination before assuming the position of director at K-MEDIhub in 2021.

□ What is your vision and key achievements for the medical industrial promotion?

K-MEDIhub is a public institution established by the Korean government for the research and development of new drugs and medical devices. It consists of four core research centers: New Drug Development Center, Medical Device Development Center, Preclinical Research Center and Clinical Drug Manufacturing Center. Over 450 researchers collaborate with industry, academia, research institutions, and hospitals to develop innovative new drugs and advanced medical technologies.

K-MEDIhub has successfully developed and transferred technology for therapeutic agents such as liver cancer, brain cancer, ovarian cancer and ADHD etc. Furthermore, we've developed the smart glasses that can be

attached to eyeglass frames by successed in miniaturizing biosignal measurement device.

Since its establishment in 2010, K-MEDIhub has actively supported research and development for over a decade and has achieved great results. However, we have seen several cases where companies that succeeded in developing new products failed in market entry and eventually collapsed due to challenges in securing sales channels by meeting with healthcare professeinals. Therefore, K-MEDIhub is expanding its business to include not only the development of advanced technologies but also commercialization and marketing efforts.

For the past 2 years, K-MEDIhub has been selecting seven domestic companies and supporting their participation fees to operate joint booths at international medical exhibitions such as MEDICA in Germany and the Arab Health Exhibition in Dubai.

We are also engaging in exchanges with countries such as India, the Dominican Republic, Thailand and Indonesia. We are introducing excellent products each other and enhancing technological capabilities by collaborating with outstanding researchers.

Every summer, an international medical exhibition called 'KOAMEX' is held in Daegu city, where medical companies create opportunities for exchange.

□ You visited major institutions and universities in New Delhi a month ago. What were the main point and outcomes of this visit?

The medical industry in South Korea naturally has an interest in India, given that India is an attractive market with the world's largest population. In fact, several of our resident companies realized the potential and sought advice on entering the Indian market.

On May 2024, K-MEDIhub visited India and signed a Memorandum of Understanding (MOU) with the India Korea Center for Research and Innovation (IKCRI), committing to mutual cooperation for the exchange of pharmaceutical, medical device, scientific technology and industrial collaboration between South Korea and India. This agreement was significant in two aspects: firstly, it established a foothold for Korean companies to enter

the Indian market. Additionally, it is important as it laid the foundation for sharing expertise with Indian scientists and advanced technologies, enabling collaborative research.

It is a significant achievement to have established the first link of communication with many excellent Indian scholars through the IKCRI. Indeed, the science and engineering in India are undoubtedly exceptional. The medical industry doesn't achieve immediate success solely through advancements in science. Because medical products must prove their safety for market entry, even if cutting-edge technologies have been discovered. We can share technology and resources to uncover innovative new technologies, enabling South Korea or India to strive to break into a medical market dominated by the U.S. This is the reason that K-MEDIhub has visited many excellent universities in India.

IIT Delhi, the Indian Institute of Technology Delhi, is the leading engineering university in India. It is so prestigious in India that it is said that students who get into IIT Delhi can go on to study at Stanford or MIT. Director Rangan expressed a strong interest in healthcare and biotechnology, stating at a meeting with K-MEDIhub, "I am particularly interested in healthcare and biotechnology. I hope to open online and offline forums to conduct joint research with K-MEDIhub."

Symbiosis International University has 40,000 students and operates a general hospital with 950 beds. Professor Bhushan Borotikar, the head of the Medical Imaging Analysis Center, emphasized the university's significant investment in infertility research. He stated, "Infertility is a pressing social issue in India. Symbiosis International University is committed to the principle of 'The world is one family' and actively seeks collaborations with international partners. We are eager to engage in video conferencing collaborations with K-MEDIhub at any time."

Professor Padhy, the director of Malaviya National Institute of Technology Jaipur, expressed interest in collaborating with public institutions in South Korea. He mentioned, "We are intrigued by K-MEDIhub's medical technology testing and training center and are also keen on personnel exchanges."

K-MEDIhub plans to continue fostering ongoing exchanges with India through the IKCRI.

[K-MEDIhub with New Drug Development Center, Medical Device Development Center, Preclinical Research Center and Clinical Drug Manufacturing Center]

□ Please share your opinions on promoting collaboration between South Korea and India in advanced medical technology.

India holds a strong position in the global bio-market, accounting for 13% of the world's pharmaceutical market. Excluding the United States, India is the country with the most FDA-approved drugs. Over 50% of the world's vaccines are produced in India. The Indian pharmaceutical industry exports $24 billion annually and imports about $7 billion, making it a key industry for the Indian economy.

South Korea is focusing on the medical industry by establishing public institutions to support medical R&D and investing as much as 4.6 trillion won. Recognizing that economic support alone is not sufficient to foster growth in the medical industry, the government aims to support research and development to nurture the industry. K-MEDIhub, a national agency established by the Korean government to support medical research and development, currently employs over 450 researchers and boasts state-of-the-art facilities with an investment of 250 billion won.

I believe that if South Korea and India collaborate in advanced medical technology research and development, we will surely create synergies.

[MEDIVALLEY & K-MEDIhub in Daegu city, South Korea]

□ Please share your opinions on the South Korea-India collaboration in advanced medical science and technology for the future development of the domestic healthcare industry.

India has relied on imports from China for active pharmaceutical ingredients. Recently, due to border disputes with China, India is seeking changes in its medical market. In response, K-MEDIhub and the IKCRI are quickly promoting South Korea.

Pharmaceutical industry exchanges with India have a high potential for yielding good results at a low cost. In fact, Indian universities are actively collaborating on joint research with institutions in areas like Boston, where South Korea aims to expand. Establishing a presence in India also facilitates entry into the U.S. market, as well as Europe, Africa, and the Middle East.

India, with its strong biosimilar market, benefits from manufacturing experience and the advantage of rapid clinical trials. Meanwhile, South Korea, with its government-supported medical R&D, boasts advanced equipment and a highly skilled workforce. We hope that by combining these strengths, we can create significant synergy.

To this end, during the medical device exhibition KOAMEX, hosted by K-MEDIhub, a special session will be held on June 22, 2024 connecting live

to India. The session will feature a lecture by Director Young Ho Kim (IKCRI) on 'Advanced Medical Technology Cooperation between Korea and India,' as well as seminars by professors from major Indian research institutions (IIT Delhi, IIT Kanpur, MNIT Jaipur, Symbiosis Int'l University). Starting with this event, K-MEDIhub and IKCRI aim to become a bridge connecting the two countries.

□ Is there anything else you would like to add?

I recently visited 'India Gate' in New Delhi, India, and it was truly impressive for the names of the 90,000 soldiers who sacrificed for the nation. Also I could feel that they were the driving force behind India's Independence.

K-MEDIhub and IKCRI are positioned to become the 'Korea-India Gate'. Please keep an eye on K-MediHub, which will be the cornerstone leading the prosperity of the medical industries of India and South Korea.

[India Gate]

5 Major Activity of IKCRI

▣ MOU of IKCRI & K-MEDIhub

○ India Korea Center for Research and Innovation (IKCRI) & K-MEDIhub MOU overview

- ▶ Date & Place : April 30, 2024, 11:00 & IKCRI
- ▶ Cooperation area : Advanced medical technology R&D and industry support etc.
- ▶ India research institutes including IIT Delhi and IIT Kanpur and K-MEDIhub are progressing various collaborations.

[IKCRI & K-MEDIhub MOU, cooperation for advanced medical technology fields]

▣ '1st India-Korea Science & Technology Networking Conference 2024'

○ IKSTNC 2024 overview

- ▶ Title : 1st India-Korea Science & Technology Networking Conference 2024
- ▶ Date & time : June 22, 2024, 13:30-16:30(Korea) & 10:00-13:00(India)
- ▶ Place : KOAMEX (Daegu Exco, for Korea side) & Online (for India side)
- ▶ Subject : India-Korea Biohealth Technology
- ▶ Participant : India and Korea S&T experties
- ▶ Organization : IKCRI & KMEDIhub

○ IKSTNC 2024 Program

Time		Contents	Speaker
13:30-13:50, KST / 10:00-10:20, IND *(20 min)*		Opening	IKCRI & KMEDIhub
		Greetings	**Mr. Jin Young Yang** (President, K-MEDIhub)
		Congratulatory remarks	**Prof. N.P. Padhy** (Director, MNIT Jaipur)
13:50-14:50, KST / 10:20-11:20, IND *(60 min)*	**Session I** Advanced medical technology	(1) South Korea and India Cooperation in Advanced Medical Technology	**Dr. Young Ho Kim** (IKCRI)
		(2) Developing Translatable Droplet Microfluidic Technology for Personalized Therapy and Single Cell Analysis	**Prof. Jatin Panwar** (IIT Delhi)
		(3) Flexible and Wearable Surface-Enhanced Raman Scattering (SERS) Biosensors: An Emerging Tool in Healthcare	**Dr. Prabhat Dwivedi** (IIT Kanpur)
14:50-15:00, KST / 11:20-11:30, IND *(10 min)*	Break	(Break Time)	
15:00-16:20, KST / 11:30-12:50, IND *(80 min)*	**Session II** Healthcare technology	(4) Indian Medical Device Market and KOREA-INDIA Collaborative Research Proposal	**Dr. Jong-ryul Choi** (KMEDIhub)
		(5) Polypyrrole Nanocomposite-based Flexible Sensor for Ammonia Detection	**Prof. Kamlendra Awasthi** (MNIT Jaipur)
		(6) Advancements in ssDNA Aptamer Engineering and Loop-Mediated Isothermal Amplification for POCT Diagnostics	**Dr. Jee-Woong Park** (KMEDIhub)
		(7) Artificial Intelligence in Medical Device: Emerging Concepts and Best Practices	**Prof. Bhushan Borotikar** (Symbiosis International Univ.)
16:20-16:30, KST / 12:50-13:00, IND		Closing	

○ Invited Speakers in IKSTNC 2024

[President Jin Young Yang, KMEDIhub]

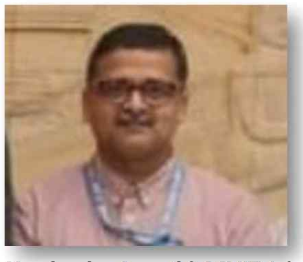
[Director N. P. Padhy, MNIT Jaipur]

[Director Young Ho Kim, IKCRI]

[Prof. Jatin Panwar, IIT Delhi]

[Dr. Prabhat Dwivedi, IIT Kanpur]

[Dr. Jong-ryul Choi, KMEDIhub]



[Prof. Kamlendra Awasthi, MNIT Jaipur]

[Dr. Jee-woong Park, KMEDIhub]

[Prof. Bhushan Borotikar, Symbiosis Univ.]

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