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International Cooperation

60 Years of Flourishing China-France Relations

By LIN Yuchen

As the 60th anniversary of diplomatic relations between China and France is commemorated in 2024, a tapestry of cultural exchange, economic cooperation and mutual understanding is unfolding. The tie established six decades ago has evolved into a robust partnership, contributing to global harmony and progress.

At the heart of this milestone lies cultural exchange. The exchange of gifts between the leaders of the two countries symbolizes the deep-rooted friendship between the two nations. A treasured French edition of *An Introduction to the Analects of Confucius*, dating back to 1688, was gifted to Chinese President Xi Jinping by his French counterpart, President Emmanuel Macron, in 2019. The symbolic gesture underscored the enduring resonance of Confucian philosophy across continents and the fusion of ancient Chinese wisdom with the Age of Enlightenment in France in the 18th century.

Bilateral economic ties have also thrived, exemplified by the fruitful collaboration showcased at events like the China International Import Expo (CIIE) in Shanghai. France, renowned for its culinary delights and wine culture, has found a receptive market in China, while Chinese products, from agricultural produce to technological innovations, find their way into French markets. This synergy not only enriches bilateral trade but also fosters a deeper appreciation of each other's heritage.

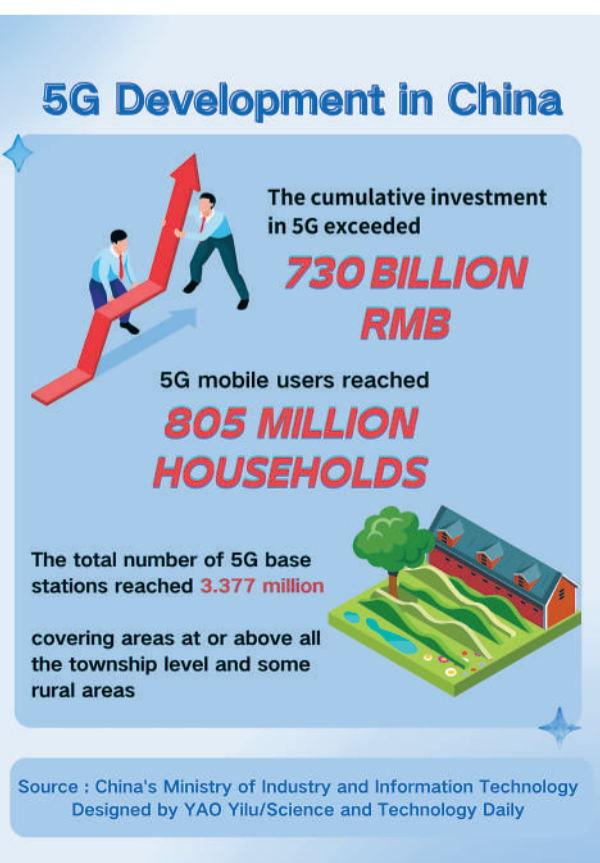
Cultural immersion has transcended borders, with initiatives like the Phoenix Bookstore in Paris showcasing Chinese literature, and Chinese students eagerly gearing up to volunteer at the Paris Olympics that will kick off in July. These exchanges of language, literature and sports embody the spirit of mutual learning and respect.

Furthermore, diplomatic engagements at the highest level reflect a commitment to global cooperation. President Xi and President Macron's exchange of congratulatory messages on January 27 on the 60th anniversary of diplomatic ties emphasizes their shared vision of a peaceful, prosperous world. Their pledge to enhance strategic partnership underscores the pivotal role China and France play in addressing global challenges, from climate change to economic development.

Looking ahead, the 60th anniversary marks not just a milestone but a springboard for deeper collaboration.

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New Graphic



China's research icebreaker Xuelong 2 holds an open day at the Lyttelton Port in Christchurch, New Zealand, on January 28. About 400 local people board the ship for a visit. (PHOTO: VCG)

Editor's Pick

'Zhifei' Revolutionizes Smart Shipping

By CUI Shuang & LIANG Yilian

China's first autonomous 300 TEU containership, the Zhifei, steered itself effortlessly into the harbour near the Aoshan Bay in Qingdao, Shandong province, much to the amazement of onlookers recently. The Zhifei, which made its maiden voyage in April 2022, was completing a phased docking demonstration using one of its three driving modes. It has three driving modes — manned driving, remote driving, and unmanned driving. These modes enable the containership to have intelligent perception of its navigation environment, plan routes independently, avoid collisions intelligently, and be driven via remote control.

Breaking the data barrier

An advanced radar system is important to developing an intelligent driving system. Due to the fact that some well-known foreign radar brands are not avail-

able to China, the R&D team decided to develop and improve domestic radars with relevant enterprises.

Over a year, the R&D team and radar enterprise technicians were able to improve the effectiveness of data through continuous sea test measurements and equipment parameter adjustments.

"The team also specially developed a series of wave active suppression algorithms to clean out the wrong data caused by its error or electromagnetic interference, and make up for the lack of radar measurement accuracy," said Gao Jie, an official of Navigation Brilliance, a Qingdao-based smart ship technology company and one of the vessel's developers.

Finding a way to secure communication

For intelligent driving, reliable communication is paramount. However, the R&D team found that due to the com-

plexities of the marine environment, there was no single solution to avoiding signal loss.

"Just like you are making a phone call in a moving car, there are multiple base stations serving you continuously. But this is difficult to do on a mobile ship, because telecom operators have many blind spots in nearshore base station coverage, and signal delays, interruptions and losses can occur when base stations switch," said Yang Zongwei, deputy general manager of Navigation Brilliance.

Three major operators, China Telecom, China Mobile and China Unicom were consulted to work with the team to improve the base station coverage, adjust the antenna orientation, and optimize the network signal, to ensure that each part of the route is covered by an operator's base station.

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China's Shipbuilding Industry Tops for 14 Years Straight

By WANG Xiaoxia

China's shipbuilding industry has ranked first in the world for 14 consecutive years in terms of three major indicators, according to the latest data released by the Ministry of Industry and Information Technology (MIIT).

In 2023, China was the only country to achieve comprehensive growth of the three major indicators, namely, shipbuilding output increased 11.8 percent year-on-year to 42.3 million deadweight tonnes (dwt), new orders surged 56.4 percent year-on-year to 71.2 million dwt, and holding orders expanded 32 percent year-on-year to 139.39 million dwt, said the MIIT.

It is notable that China's shipbuilding industry has been upgraded through

continuous technological innovation, and made breakthroughs in homegrown large ship building, including large cruise ships, large LNG carriers and aircraft carriers.

China's first domestically-built large cruise ship, the Adora Magic City, was delivered in Shanghai on November 4, 2023, after five years' design and construction. The cruise ship, 323.6 meters in length, with a gross weight of 135,500 tonnes and a total of 2,125 guest rooms, can accommodate up to 5,246 passengers. On January 7 this year, it completed its commercial maiden voyage.

Dubbed a "super freezer truck at sea," constructing a large LNG carrier is globally recognized as a challenging project. China delivered its first large LNG carriers in 2008, the Dapeng Sun, breaking the duopoly of Japan and South Korea in

LNG carrier manufacturing. Since then, Chinese shipbuilders have continued to update technologies and increase the localization rate.

As of June 2023, it has safely carried 257 cargo shipments with a cumulative delivery of approximately 16.7 million tons of LNG. From January to July 2023, China undertook orders for 18 large LNG carriers, accounting for 35 percent of the global total.

In 2017, the first domestically built aircraft carrier, the Shandong, was launched and in December, 2019, the Shandong officially entered service. In June 2022, China launched its third aircraft carrier, the Fujian, which has a displacement of more than 80,000 tons and is the first catapult aircraft carrier designed and built completely by China.

Digital Code Facilitates Medical Services

By WANG Xiaoxia

The medical insurance code is an electronic certificate and information identification for medical insurance participants. Since the digital tool was launched in November 2019, it has seen more than 1.08 billion people register and brought great convenience to its users, according to the National Healthcare Security Administration (NHSA).

Those covered by basic medical insurance can view the digital code on the national government service platform, WeChat, Alipay and bank apps. It can be used to make hospital appointments, see doctors, undergo tests and examinations, collect reports and buy medicines.

Thirty-one provinces (autonomous regions or municipalities) directly under the central government and the Xinjiang Production and Construction Corps support the purchase of drugs using medical insurance codes, with access to more than 800,000 designated medical institutions nationwide.

As for the activation rate, Zhejiang and Qinghai provinces take the lead, achieving full coverage of their enrollees. More than half the provinces have an activation rate of more than 75 percent.

According to Tencent Health estimates, medical insurance code-related services save an average of 43 minutes for each patient. The code not only makes healthcare convenient for patients, but also improves hospitals' efficiency.

The medical insurance department will continue to optimize and improve the application scenario of the medical insurance code, simplify service procedures, and develop more functions, according to Xie Zhangshu, an official at the NHSA.

WEEKLY REVIEW

AES100 Aircraft Engine Passes Ice Test with Flying Colors

China has successfully completed rigorous ice formation testing for its developed AES100 advanced civil turbohaft engine, marking a major breakthrough in aircraft engine certification technology, according to the Aero Engine Corporation of China on January 29.

CNOOC's Breakthrough Valve Boosts Oil Flow Control
On January 29, CNOOC's first HAILONG TOOLS hollow motor type underground flow control valve successfully passed various functional tests which lasted 72 consecutive hours. It marks a breakthrough in China's offshore underground flow control technology, and speeds up the intelligent completion process of the company's offshore oil fields.

Hydrogen Combustion Aircraft Makes Maiden Flight

The first four-seat hydrogen internal combustion aircraft prototype successfully completed its maiden flight at the Faku Caihu Airport in Shenyang, Liaoning province, on January 29. The test flight data indicated adequate aircraft power, minimal vibration and exceptional handling performance.

First Zero-subsidy Offshore Wind Project Connected to Grid

On January 28, the first batch of the Fangchenggang Offshore Wind Power Demonstration Project's units were successfully connected to the grid. The Fangchenggang project, an offshore wind power scheme under construction in Guangxi, is the largest single installed capacity and the first zero-subsidy affordable offshore wind power project in China.

WECHAT ACCOUNT

E-PAPER



Policy

Pudong New Area to Embrace Wider Reform, Opening-up

By ZHONG Jianli

There are new changes coming to Shanghai's Pudong New Area, as the already vibrant and innovative hub in China's reform and opening-up endeavor gears up to spearhead the country's surge to modernize.

The general offices of the Communist Party of China Central Committee and the State Council recently issued an implementation plan for pilot comprehensive reform in Pudong New Area until 2027.

This visionary move grants greater autonomy to Pudong in its high-level reform and opening-up efforts to become a leading area for China's modernization drive.

The plan emphasizes perfecting a high-standard market regulatory system. Based on the national unified market access negative list, special measures will be formulated and implemented in Pudong New Area to create a high-level market access system. It involves exploring a gradual relaxation of foreign access restrictions in sectors such as telecommunications and health-care services.

Focused on improving the sci-tech innovation system, the plan calls for improving the management systems and resources allocated to sci-tech innovation, including ensuring ongoing input for basic research. It encourages joint high-level research by Chinese and foreign scientists on global technological



The landmark buildings in Pudong New Area, Shanghai. (PHOTO: VCG)

frontier issues.

The plan also aims to promote cross-border sci-tech innovation cooperation, supporting overseas top universities and research institutions in setting up major forward-looking innovation bases in the area, and encouraging multinational enterprises to establish R&D centers there.

Meanwhile, Chinese sci-tech enterprises are supported to establish R&D laboratories overseas, including jointly building R&D centers and laboratories with the Belt and Road Initiative

partner countries.

This comprehensive plan further seeks to facilitate financial support for technological innovation, by perfecting the institutional arrangements for capital market financing, IPOs, mergers and acquisitions for high-tech companies, and providing financial services facilitating cross-border technology transactions, including settlement in both Chinese and foreign currencies.

In addition, the plan enhances the protection and utilization of in-

tellectual property rights (IPRs). It stresses the need to advance reforms in IPR adjudication and inspection systems, explore the improvement of IPR protection mechanisms for small and medium-sized enterprises, and foster innovation in commercial secrecy protection rules and guidelines. The plan allows overseas IPR service institutions to establish permanent representative offices in Pudong New Area and engage in cross-border IPR-related business activities.

To attract and gather outstanding talent from around the world, the plan gives Pudong New Area the authority to issue confirmation letters for top foreign experts.

This initiative includes supporting eligible foreign professionals to take positions as legal representatives in institutions and enterprises in China (Shanghai) Pilot Free Trade Zone and its Lingang section, and Zhangjiang Science City.

It also allows foreign scientists with permanent residency to lead national sci-tech projects and assume the legal representative role in new-type R&D institutions in Pudong New Area.

In terms of entry and residence convenience for foreign experts, the plan allows invited foreign individuals conducting significant research, exchange, commercial and trade activities in Pudong New Area, to apply for long-term multiple-entry visas.

China-Africa Economic Cooperation Deepens

By LI Linxu

To enhance China-Africa cooperation in trade, industry, finance and people-to-people exchanges, China has recently approved the Overall Plan for Building a Pilot Zone for In-depth Economic and Trade Cooperation Between China and Africa, submitted by the People's Government of Hunan province and the Ministry of Commerce.

While implementing the plan, the principles of sincerity, real results, amity and good faith for China's relations with Africa should be upheld, according to a circular released by the State Council.

The principles of wide consultation, joint contribution and shared benefits should also be followed.

Practical measures under the framework of the Forum on China-Africa Cooperation will play a leading role in aligning the two sides' respective development strategies.

Efforts will be made to innovate the Sino-African economic and trade cooperation mechanism and improve the two parties' modern industrial chain and supply chain systems.

More coordinated cooperation will be conducted in trade, industries, finance and culture exchanges so as to advance the high-quality development of Belt and Road Initiative, and build a high-level China-Africa community with a shared future.

Among the pilot free trade zones that have been approved to be set up in China, the Hunan Pilot Free Trade Zone is the only reform and innovation experimental field positioned as the pilot zone for in-depth economic and trade cooperation between China and Africa.

In 2023, Hunan's import and export to Africa reached 55.67 billion RMB, with an average annual growth rate of 23.1 percent in the past three years.

Hunan province is urged to speed up the formulation of supporting policies and concrete implementation plans, to push forward the construction and development of the pilot zone in a steady and orderly way.

Building a pilot zone for in-depth China-Africa economic and trade cooperation in China is an important component of the "Trade Promotion Program" put forward by China in 2021.



African foods and agricultural products exhibited at the third China-Africa Economic and Trade Expo in Changsha, Hunan province. (PHOTO: XINHUA)

Benchmark for Building Beautiful Courtyards Released

By ZHONG Jianli

China's Standardization Administration recently issued a national standard for building "Beautiful Courtyards" in the countryside, marking a significant milestone in the nation's ongoing efforts to promote rural revitalization and build a "Beautiful China."

Drawing from the successful experiences of Anji, a county in Zhejiang province, east China, in building beautiful courtyards, the standard aims to advance new models and pathways for rural development. It is a bench-

mark for the construction, renovation and management of "Beautiful Courtyards" across the country.

The standard combines relevant policy documents to specify requirements for the layout, appearance, environmental hygiene, family ethics and long-term management of the courtyards. It is also meant to facilitate a courtyard economy.

Regarding courtyards' aesthetic environment, the standard advocates efficient land use. It emphasizes rational planning of space for living, production, leisure and culture, as well as designs that integrate local customs

and household needs, harmonizing them with village planning, and the surrounding landscapes and ecological environments.

The standard also highlights the cultural essence of "Beautiful Courtyards," calling for courtyard owners to uphold social ethics, and encouraging environment-friendly practices while promoting good family culture and fostering harmonious neighborly relations.

To develop a courtyard economy, the standard calls for the cultivation of cash plants, flowers and trees in courtyards. It also promotes the development

of specialty handicrafts and intangible cultural heritage workshops, and the establishment of distinctive rural inns or leisure farms.

Furthermore, it encourages the use of courtyards for the promotion of new business models, such as e-commerce, livestreaming sales and express delivery agencies.

By fostering economic growth and cultural enrichment across the nation's countryside, the standard will be a key instrument for a more prosperous, harmonious and visually appealing rural landscape across China.

Case Study

Digital Economy Booming in Guizhou

By LI Linxu

Digital economy has become a major growth engine in southwest China's Guizhou province, injecting new momentum into local economic development and industrial upgrading.

In 2023, digital economy accounted for 42 percent of the province's gross domestic product (GDP), according to the latest statistics released at a news briefing hosted by the Information Office of Guizhou Provincial People's Government.

This year, the province is striving to grow its digital economy to surpass a milestone of one trillion RMB, accounting for 45 percent of its GDP.

Now, it is seizing the development opportunities of emerging digital industries, such as artificial intelligence, cloud computing and data centers.

As one of eight national computing hub nodes, Guizhou currently has 39 major data centers in operation or under construction, among which there are more than 20 large-scale data centers. It has become one of the leading provinces in China in terms of its number of large-scale data centers.

The province saw breakthrough growth in its computing power in 2023, with over 70,000 intelligent computing chips in use, a frontrunner in the country, said an official from the Guizhou Provincial Development and Reform Commission.

Last year, it also reached a milestone in 5G infrastructure construction, deploying 35,000 new base stations across key areas, industrial parks and transport hubs.

Thanks to such construction efforts in digital infrastructure, the province has attracted a large number of overseas and domestic tech giants, including Apple, Huawei, Tencent and China Mobile, to set up data centers there.

Of particular note is that one of the province's data centers has been entered as one of 21 model cases of the 2022 National New-type Large-scale Data Centers.

Going forward, more efforts will be made to accelerate the development of digital economy, build a national computing highland, cultivate digital industrial clusters, and promote digital empowerment across various sectors, as per the province's government work report.

Speeding up Digital Transformation of Raw Materials Industry

By LI Linxu

As part of efforts to build a manufacturing powerhouse, China has unveiled a three-year work plan to promote the digital transformation of its raw materials industry.

The plan was recently released by nine government bodies including the Ministry of Industry and Information Technology (MIIT) and the National Development and Reform Commission.

Raw materials industry, the foundation of real economy, is character-

ized by high resource and energy intensity, complex processes, and strong continuity of production, said an official from MIIT, adding that the plan aims to advance the sector's high-quality development through digital transformation.

The industrial value added of raw materials industry accounted for about 30 percent of the country's value added of industrial enterprises above designated size, according to the official statistics.

By 2026, significant progress is expected to be made in the digital transfor-

mation of raw materials industry, according to the plan. Digital technologies will be deeply integrated into the industry's processes, such as R&D, design, manufacturing, production, management and market service.

Specific digital transformation targets for the run-up to 2026 have also been set.

More than 120 typical scenarios, over 60 model factories and a batch of model enterprises will be cultivated for digital transformation.

A new big data center for new materials, four manufacturing innovation cen-

ters, and six industrial internet platforms at industry level will be built.

A batch of key technologies will be tackled and a slew of standards will be formulated.

To achieve these goals, the plan has laid out a series of measures, such as strengthening digitalization foundation, improving networking infrastructure, and cultivating digital transformation models.

Supporting green development, advancing the construction of smart industrial parks, and promoting AI applications are also in the plan.

'Zhifei' Revolutionizes Smart Shipping

From page 1

For nearly four years, technicians tried to integrate various communication methods to find the optimal ratio of communication link data volume and cost.

At present, the Zhifei can receive stable and efficient signals and autonomously enter or leave a port in about 10 minutes, after the integrated communication system was perfected.

Exploring battery technology

"Using pure electric propulsion has

multiple advantages, especially when it comes to ship intelligence," said Zhu Shenchao, deputy general manager of Navigation Brilliance.

Zhu said that pure electricity can further shorten the response time of equipment and improve the accuracy of ship control, which is of great significance for intelligent driving.

The R&D team chooses to use the on-board generator for charging which is both flexible and convenient,

and can recycle excess power while sailing.

Battery expansion is one of the challenges the team encountered. After repeated trials and continuous optimization, they finally found an exclusive solution — through the right ratio of positive and negative battery materials, electrolytes, diaphragms and other raw materials, to increase the capacity of the battery unit to 80 and 90 amp hours, far beyond the traditional 50

amp hours.

"This alone is expected to save 10,000 RMB a day in operating costs for Zhifei," said Zhu.

Meanwhile, Zhang Baochen, executive vice chairman of the China Institute of Navigation told *Science and Technology Daily* that the intelligent and green innovation practice of the "Zhifei" will propel China's intelligent ships to navigate confidently through future challenges.

60 Years of Flourishing China-France Relations

From page 1

As France is slated to be one of the guest countries at the CIIE in November, and cultural events like the Yu Garden Lantern Festival illuminates Parisian streets to celebrate the Chinese New Year, the future brims with possibilities for closer ties.

In essence, the 60th anniversary of

China-France diplomatic relations encapsulates a journey of friendship, mutual respect and shared aspirations. As the torchbearers of civilizations, these two nations illuminate the path to a harmonious, interconnected world, where diversity is celebrated, dialogue prevails, and cooperation knows no bounds.

INSIGHTS

Broad Prospects for China's Robotics Future

Voice of the World

Edited by QI Liming

China climbed to fifth place in robot density data (RDD) in 2021 and maintained this position in 2022. Driven by the country's massive investment in automation technology, the country now has an impressive high robot density of 392 robots per 10,000 employees.

This was revealed in a RDD report by the International Federation of Robotics (IFR) on January 10, which showed that Asia leads the way in the shift to automated processes, with China in particular installing industrial robots at break-neck speed.

In 2022, the country accounted for more than 50 percent of newly installed industrial robots worldwide and is the largest market in absolute terms and in terms of growth, which has been driving the intelligent transformation and upgrading of China's manufacturing companies and helps raise total factor productivity.

Exciting trends of robotics and automation

According to Georg Stieler, managing director, Asia, of Stieler Technology & Marketing Consultants, who has implemented over 40 market entry and expansion projects in China with his local team, "The situation in robotics and automation in China has never been as exciting as [it is] today."

In the first half of 2023, the upward trend of installing industrial robots continued. "According to our calcu-



College students from across the country participate in the 25th China Robot and Artificial Intelligence Competition on June 13, 2023. (PHOTO: VCG)

lations, the number of industrial robots sold during this period was 144,288 units, an increase of 17.1 percent compared to the previous year," said Stieler.

The Chinese market is now setting essential trends in industrial automation. What initially emerged in the manufacture of electronic products is continuing in electric cars, batteries, and photovoltaics. Since the country is leading in these areas, local companies benefit from corresponding economies of scale and learning effects, he said.

"In the robotics technology, we expect a similar development. China will remain the largest market for robotics and automation products for the foreseeable future. We have already mentioned the strengths in major sales markets. The

country now has a powerful supply chain for most key robotics components," said Stieler.

According to the IFR report, while more and more consumers enjoy the convenience of having a robot vacuum their home or take care of the lawn, it is in industrial applications that robotics have made the biggest impact. State-of-the-art manufacturing processes are unthinkable without industrial robots handling part of the workload, whether it's handling, welding or assembling, which are the three most common applications of newly installed industrial robots in 2022.

Based on data from the IFR, the operational stock of industrial robots has tripled over the past decade, with almost four million robots in use across various

industries by the end of 2022.

Multitudinous application scenarios of robots

In addition to the market and growth of industrial robots, the application scenarios of robots continue to expand in China. The increasing prevalence of robots in China highlights the continuous expansion of their application scenarios and the country's rapid advancements in robotics technology.

With robots being extensively used in increasingly diverse and complex ways across different sectors, relevant application scenarios have already covered 65 major industry categories and 206 medium industry categories.

Robots are playing important roles in traditional industries and emerging industries, as well as public wellbeing-related areas and major projects in China. Their 10 major application scenarios include manufacturing, agriculture, construction, energy, commerce and trade logistics, health care, elderly care, education, commercial services for communities, security and emergency response (including in extreme environments), said an action plan on the use of robotics jointly issued by China's 16 government departments.

At the World Robot Conference 2023, humanoid robots with the appearance of Chinese Tang Dynasty poets Li Bai and Du Fu recited poems, wowing visitors because of their quick wit and vivid expressions. Various other types of humanoid robots, such as robot baristas, tactile-sensing robots and giant panda robots, also attracted great attention at the event.

Opinion

Canada's Myopic Policy Hinders Sci-tech Exchanges

By GONG Qian

The Canadian government recently unveiled new restrictions on research grants and funding to prevent the sharing of its advanced technologies with 103 "Named Research Organizations" from China, Russia and Iran, citing national security concerns.

The restrictions, released on January 23, include a long list of sensitive research it does not want to share, including artificial intelligence, quantum science, robotics, biotechnology, advanced weapons, space and satellite technology and human-machine integration.

Under the circumstances, applicants won't get federal funding if they conduct research in these fields by partnering with the institutions on the security blacklist.

Such repeated trickery is once again politicizing sci-tech cooperation issues, and would not only impair the normal global academic exchanges, but also further impede the benefits of sci-tech advancement from global cooperation.

In February 2023, the Canadian government rolled out a similar policy, but the new restrictions still took many academics by surprise.

On the one hand, sensitive technologies on the list are very broad. "It's almost everything under the sun," Philip Landon, interim president and CEO of Universities Canada, told *Science Business*.

On the other hand, "The scope [of the rules] is significant," Ian Milligan, an associate vice president at the University of Waterloo, one of Canada's top tech universities, told *Science Business*. "It will affect many of our researchers."

The new rules would put chains on many Canadian universities, considering they are decrying the fact that

Canada's R&D spending is among the lowest of major Western economies. In addition, the new rules could possibly burden them with extra security expenses.

The Canadian Association of University Teachers (CAUT) said it worries Ottawa might have gone too far, according to Canadian newspaper the *Free Press*.

CAUT is concerned about limiting the global exchange of scientific research, the negative impact on academic freedom and an overall chilling effect on certain research areas of importance to Canadians, the group's Executive Director David Robinson said in a statement.

"Moreover, serious concerns remain about security agencies targeting academics from or of descent from the countries of concern," said CAUT.

Meanwhile, the federal officials are also concerned about a chill within the research community (e.g. ethnic communities may be targeted), and are wary that listing specific institutions as risks "will have an impact on Canada's bilateral relations," according to official documents reported on by the Canadian Press.

However, "it fails to acknowledge that knowledge is exchanged and there are mutual benefits derived from collaborations," Tamer Özsu, professor at the Chertion School of Computer Science at the University of Waterloo, wrote in his article published on Policy Options.

"Canada shouldn't be a leader in restricting research," said Özsu.

"Sci-tech exchanges and cooperation between China and Canada are two-way and mutually beneficial. The relevant policy of Canada is short-sighted and unwise and hurts others as well as itself," said China's Foreign Ministry spokeswoman Mao Ning.

Comment

Practical AI Without Hype Helps Consumers

By YAO Yilu

In recent years, AI has flourished in the consumable electronic product market, being used in everything from smartphones and smart homes, to intelligent robots, and intelligent cars. AI has become the catalyst for innovation in the consumable electronics industry, and has led to the industry's rallying cry of "All in AI."

The widespread growth of consumer electronics can be attributed to several key factors.

Advancements in AI technology have led to the development of more sophisticated and capable products such as smartphones, smart home devices, wearables, and entertainment systems. These products are now more in-

tuitive, efficient, and personalized thanks to AI.

Moreover, the increasing availability of data and big data analytics has enabled companies to harness AI for consumer insights, product optimization, and targeted marketing. This has resulted in the creation of more tailored and appealing electronic products based on a better understanding of consumer behavior and preferences.

In the meanwhile, the growing demand for automation and smart solutions has driven the integration of AI into consumer electronics through virtual assistants that offer hands-free control over devices, as well as access to a wide range of services.

However, powerful as it may be, AI

technology is not a panacea for modern life. Its current strengths lie primarily in specific areas such as data analysis, speech recognition, and natural language processing. For hardware products, AI can enhance their intelligence, but cannot completely replace their inherent functionality.

Currently, many home appliance manufacturers have incorporated traditional products such as refrigerators and washing machines into their AI innovations.

However, consumers have shown a lack of enthusiasm towards these products. AI should not be merely a fancy feature in consumable electronics or an excuse to increase prices arbitrarily.

Its true value lies in its ability to

enhance product functionality and performance, while providing a better user experience. If the actual needs of users and practicality are ignored, and AI is added solely as window-dressing, then such products will struggle to gain market recognition or user loyalty.

Promoting innovative development within the consumable electronic industry through AI is undoubtedly a general trend. In essence, when AI is seamlessly integrated into physical products without the hype and strategic approach to pricing, it not only benefits the business but also cultivates a landscape where appreciation for AI products prevails over skepticism, creating a win-win scenario for both enterprises and consumers.



The Consulate-General of China in Toronto holds a gathering of the Canadian alumni of Chinese institutions, on November 11, 2023. (PHOTO: VCG)

Exploring Space Needs Partners, Not Opponents

By TANG Zhexiao

At a hearing about the new Artemis plan held by the U.S. House of Representatives' Committee on Science, Space and Technology on January 17, members voiced concern and urged the U.S. to beat China in returning to the moon, according to Space.com.

It's no secret that China has a goal to surpass the United States by 2045 as a global leader in space. "We can't allow this to happen," representative Rich McCormick said during the hearing.

For a long time, the U.S. has pursued a strategy for dominance in space, and treating other countries as imaginary enemies in the process.

The Wolf Amendment explains why China and the U.S. didn't work together in space. Passed by the US Congress in 2011, the law banned the U.S. government agencies such as National Aeronau-

tics and Space Administration (NASA) from engaging in direct, bilateral cooperation with Chinese governmental or commercial agencies.

This law has generated much debate in the space community, said *The Wall Street Journal*. "It's not a total ban but it functionally serves the ban collaboration."

Then U.S. representative Frank Wolf said, "We don't want to give them the opportunity to take advantage of our technology, and we have nothing to gain from dealing with them."

Things have since changed. China's aerospace industry has made rapid advancements since 2016.

The missions of the Shenzhou series of rockets highlights the reality of China's technological breakthroughs, and the completion of China's Tiangong Space Station marks the country's space program capabilities.

As the international space station is set to be retired before 2030, Victoria Samson, Washington director of Secure World Foundation, said, "The international space station is going down, and the Chinese space station is going up. It indicates that things are changing and evolution of space is changing."

Welcoming foreign astronauts, the Chinese space station is the first project of its kind that is open to all UN member states and has already selected nine projects from 17 countries and 23 institutions for research purposes.

Actually, China has always adopted an open and cooperative attitude towards U.S. space cooperation.

In 2019, China exchanged data with NASA on its mission to land the Chang'e 4 spacecraft on the far side of the moon. "In what was reportedly the first such collaboration since an American law banned joint space projects

with China that do not have prior congressional approval," according to VOA news.

In November 2023, NASA-funded researchers were granted permission to apply for access to China's Chang'e-5 lunar samples in an exception to a prohibition on bilateral activities, which the space community sees as a potential window to cooperate on future missions including the 2024 Chang'e-6 mission.

Space is the common property of all mankind, not the private property of the Americans, said Chinese foreign ministry spokeswoman Hua Chunying.

So has this Wolf Amendment helped or hurt NASA? If the U.S. really cares about the exploration of space and uses its achievements for peaceful purposes, it should partner with other countries in the world to jointly promote space technology.

Super-compliant Microbots for Precision Medicine

Hi! Tech

By TANG Zhexiao

A Chinese research team has developed a software microbot with super sensitivity, which is expected to perform biomedical tasks such as assessing tissue and cell biomechanics, as well as transporting and releasing cells or therapeutic cargo.

According to researchers, the "pico-spring" integrated into these microbots is a super-compliant nanostructured spring system with exceptionally high sensitivity to forces at the piconewton scale. Its quantifiable compliance is sensitive to 0.5 pN (10-15N), equivalent to one-thousandth of the gravity of a single cell.

Thus, the picosprings perform mi-

cro-meter-scale deformations that can be directly used to govern intricate actions of micromachines at the single-cell level within biological conditions.

In common with traditional springs, such as a bow or hairspring, the present picosprings can also power machines through the deliberate release of stored energy.

Additionally, it can be customized and processed into any shape for the preparation of various soft microbots and flexible micro-devices by 3D nanofabrication.

Based on this research, new minimal-invasive or even non-invasive soft microbotic instruments will further provide effective assistance for medical tasks, such as cell mechanics research, internal fertilization, thrombus removal, and neural intervention, according to the research team.

Giving Hope to Cancer Patients

Dialogue

By Staff Reporters

In the Radiation Therapy Center at the Sichuan Cancer Hospital (SCH), Lucia Clara Orlandini, a medical physicist from Italy, always greets people with her warm smile, which gives her patients hope.

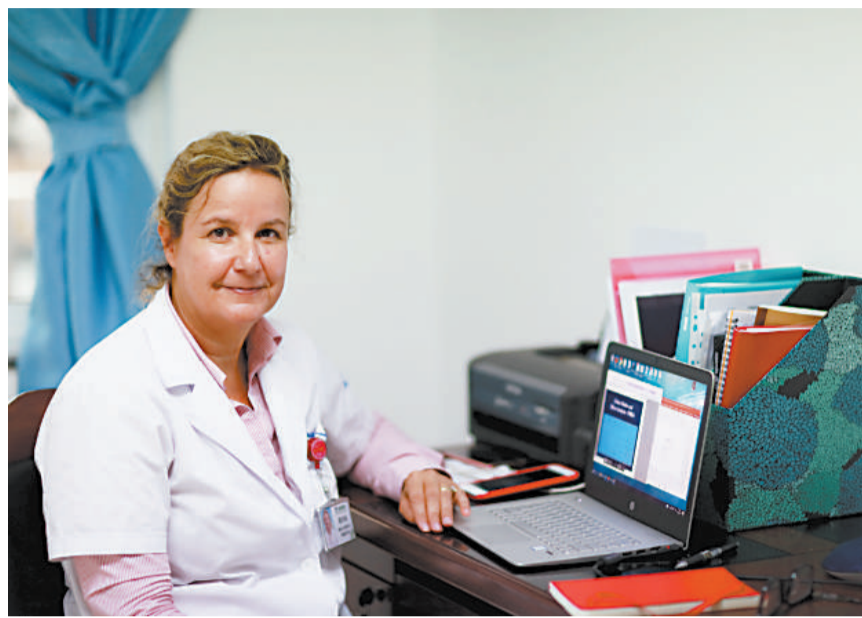
Her journey to China began in 2015 as the academic director of the Technical Engineering Department of SCH. Before coming to China, Orlandini was the director of the Medical Physics Department at the Florence Comprehensive Hospital Cancer Center in Italy. She has accumulated over two decades of clinical and research experience in the field of radiation physics.

Focusing on medical exchange

In her professional field, Orlandini's meticulous and serious approach to academic, research, and professional tasks has earned her admiration from colleagues. Leading the hospital's radiation physics technical team, she has initiated innovative applications and research, aligning many radiation therapy techniques with international standards.

Under her guidance, the hospital adopted the latest absolute dose measurement standards from the International Atomic Energy Agency (IAEA), ensuring the accuracy of accelerator operations. This groundbreaking step elevated the hospital's radiation therapy dose calibration to international standards.

In addition, Orlandini pioneered the use of patient surface positioning for radiation therapy in China, which improves the effectiveness of cancer



Dr. Lucia Clara Orlandini. (COURTESY PHOTO)

treatment.

During her tenure in China, Orlandini has not only excelled in her responsibilities as a doctor, but also emerged as a link for medical exchanges between Sichuan province and Italy, as well as Europe. She became the "International Friendship Ambassador" for the SCH, leveraging her academic influence to establish successful collaborations between the hospital and several Italian medical institutions and universities.

Since 2017, more than 13 young scholars from SCH have gone to Italy for further studies. Orlandini was concerned about her colleagues adapting to an unfamiliar environment and personally took the initiative to arrange local accommodations for these young doctors. During their study period, Orlandini remained attentive to their aca-

demical and daily life, offering all the help she could provide despite her busy schedule.

Notably, with her efforts, a famous neurosurgery expert from Azienda Ospedaliero-Universitaria, Maggiore della Carità di Novara, volunteered to work full-time at the SCH for 40 days. This expert's valuable insights benefited over 100 patients, simultaneously introducing advanced medical concepts to the hospital's neurosurgery department.

Being a part of China

In the early months of 2020, as the COVID-19 pandemic ravaged Italy, a medical team from Sichuan province rushed to provide medical support in Italy. Almost at the same time, Orlandini, who was on vacation in Italy, decided to cut short her holiday and return to Chengdu to help where she could.

"Having lived in Chengdu for five years, this has become my 'second home.' I'm not a guest in China but a part of it," she said. Orlandini and her family have fallen in love with Chengdu, a city they find hard to leave. In 2020, Orlandini even received unexpected complaints from her son, after he completed high school in Chengdu and returned to Europe for university, saying that he missed his former life in China.

In her spare time, Orlandini is interested in exploring Chengdu and its tourist attractions. She said, "Now when my friends come to Chengdu, I can treat them like locals." She likes to take them to Taikoo Li, a fashionable landmark of Chengdu. "It is the perfect blend of tradition and modernity," she said.

Orlandini has adapted well to life in Chengdu and enjoys its local cuisine. "Coming to China made me realize it's not what Westerners imagine," she said, adding that economic development is rapid, infrastructure is well-built, and life is convenient and secure. "I am very satisfied with my current work and living conditions in China, and I recommend more Italians to come here for development."

Currently, she has submitted a permanent residence application to the immigration authorities in China, expressing her hope to continue working and living in China in the future.

Orlandini's story is not just limited to her professional dedication, but is also a way to show her deep connection with China and her belief in China's potential for growth and opportunity.

This article was written in cooperation with International Talent Magazine.

Letter to the Editor

China, the Place Where My Dream Started

By Elina Kim

In 2014, a seemingly unattainable dream of studying abroad came true — I received a scholarship and came to study in China. I pursued a bachelor's degree in international economics and trade, a field that opened doors to the complex world of global commerce and economics. Alongside my academic pursuits, I immersed myself in Chinese culture and language, and even explored martial arts like tai chi.

China's commitment to investing in education is evident, and I was blessed to be part of a system that values knowledge and innovation.

I was eager to expand my horizons in China further with my bachelor's degree in hand. Guided by the recommendations of a friend, I was presented with another incredible opportunity — to study for a Master of Business Administration degree under the Talent Selection Program for representatives from countries along the Belt and Road Initiative. The degree not only deepened my understanding of global business but also provided opportunities for personal development.

I graduated in 2020 when the whole world was facing the pandemic. Yet even then, China was not short of opportunities. Under the government

program for fresh graduates, I took a leap of faith, gathered a team of like-minded individuals, opened a company and started my entrepreneurial journey. I had to learn many lessons the hard way and my start-up was not successful. However I am grateful for the valuable experience and knowledge I gained through it.

Just as one chapter was coming to an end, a new opportunity arose — a work opportunity at the Shanghai Cooperation Organisation Demonstration Area (SCO-DA).

For me, as a representative from one of the SCO countries, it was like a dream come true. So I came to SCO-DA in Qingdao in east China, the place that transcends borders, cultures and languages to connect nations in pursuit of shared success.

Today, I am honored to serve as a foreign affairs specialist and do entrepreneurship at the SCO Youth Entrepreneurship Exchange Base.

A land that was once foreign now feels like my second home. I am grateful for every part of my journey in China and hope to continue to bring my input to the success and welfare of society.

The author is a Kazakh foreign affairs specialist at the SCO Youth Entrepreneurship Exchange Base.



Elina Kim. (COURTESY PHOTO)

Myths and Facts of 2023

Science Outreach

By BI Weizi

Recently, the China Association for Science and Technology published a list of misconceptions that did the rounds in 2023 till they were busted. *Science and Technology Daily* addresses some of these to help our readers remain well-informed and not be taken in by rumors.

Myth 1: Genetic testing can reveal a child's hidden talent within the DNA.

The fact: There is currently no scientific experiment or literature to validate any relationship between specific

genes and talent. It is impossible to determine a child's natural talent through gene testing. Hu Suwei, a researcher from the Yangzhou Medicine Genetics Center, said these so-called tests are just a gimmick.

Myth 2: Shortsighted people can't be astronauts.

The fact: The selection standards for astronauts are indeed very strict. However, people with a low degree of myopia are currently allowed to go into space. When astronauts wear glasses during the ascent phase of the mission, the glasses may fall off or break if there is a collision or other problems. But the space station environment is relatively stable and glasses can be worn inside the space station.

Myth 3: The "sudden death pre-

vention package," a new dietary fad consisting of health products like fish oil, vitamin D3 and "eye vitamin" lutein, can prevent sudden death if taken daily.

The fact: There is no standard "sudden death prevention package" in the medical community. Fish oil, vitamin D3 etc. are all dietary supplements. There is no medical prescription or consensus that taking these products can prevent sudden death.

Currently, heart diseases account for more than 80 percent of all sudden deaths. Patients with cardiovascular diseases often have hypertension, diabetes and hyperlipidemia and usually take a variety of medications. They should follow their doctor's advice before taking

any supplements.

Myth 4: Iodized salt can protect people from nuclear radiation.

The fact: Consuming iodized salt to prevent nuclear radiation is not advisable. The purpose of taking iodized table salt is to prevent and treat iodine deficiency disorders in areas with low concentrations of iodine in their water supply. Iodine deficiency is a major public health problem that can be addressed in an inexpensive way by adding small amounts of iodine to sodium chloride salt.

However, excessive iodine intake causes serious stress to various organs of the human body and can induce or aggravate cardiovascular and cerebrovascular diseases, dehydration and even death.

Traditional Eastern Wisdom

Ceramic Royalty: Blue and White Porcelain

By YAO Yilu

Blue and white porcelain is thought to have originated in the Tang Dynasty (618-907), however it didn't really flourish until the Ming and Qing Dynasties, reaching an unparalleled golden age in Chinese ceramic history.

The emergence of blue and white porcelain shattered the confines of Chinese monochrome-glazed ceramics, ushering in a new era of underglaze painting and giving rise to the distinctive style associated with Jingdezhen porcelain.

Blue and white porcelain is crafted using cobalt ore that contains cobalt oxide as its raw material. The process involves coloring and depicting intricate

patterns on the porcelain matrix, followed by the application of a layer of transparent glaze. Finally, it is fired at a high temperature of more than 1000°C.

Its composition is rich and multi-layered, yet harmoniously balanced. The brushwork is characterized by confident, smooth and powerful strokes, while the outline rendering exudes a strong and calm presence. Motifs taken from nature, such as lotus blossoms, peonies and landscape scenes, often feature on the pieces, reflecting the traditional Chinese aesthetics.

Blue and white porcelain boasts a diverse array of shapes, ranging from small bird feeders to large jars. In the past, as production increased and costs fell, blue and white decoration products

not only met the daily needs of the palace, but were also extensively exported as commodities, and given as gifts to foreign

tribute-payers, becoming a witness to cultural exchanges between the East and the West.



A blue and white 'dragon' jar on display at the National Museum of China. (PHOTO: VCG)

Service Info

Q&A on Accommodation Registration for Foreigners Online

By Staff Reporters

For foreigners who reside or stay in lodgings other than hotels, they or the persons who accommodate them shall, within 24 hours after the foreigners' check-in, go through the registration formalities with the public security organs in the places of residence online or in person.

How to file accommodation registration online?

There are four ways to register online:

(1) Go to the international version of the Beijing Municipal Government Portal. <https://english.beijing.gov.cn/livinginbeijing/>

(2) Follow the official WeChat account of "Beijing Public Security Exit and Entry" and open the "Online Accommodation Registration" module from the information guide.

(3) Go to this website: <https://zwfw.gaj.beijing.gov.cn/zsdj/zsdj-q/>

(4) Scan the QR code to apply.

Can overseas mobile phone numbers be used for registration?

No, only Chinese mobile phone numbers are accepted.

What documents are required for the registration?

A copy of the front page of the entry/exit document, a photo of the applicant and a copy of the title deed or the address information page of the lease.

What entry/exit documents are valid?

The following entry/exit identity documents are valid: foreigner's passport or permanent residence card.

Are these platforms in Chinese only?

In addition to Chinese, the online accommodation registration system is currently available in five languages: English, French, Russian, Japanese and Korean.

How to confirm the success of the registration?

After submission, the status of the registration process will be displayed in "My Records." If the registration is successful, you can enter the system to view and print the electronic registration form; if the application is not successful, you can amend it according to the prompts and resubmit it, or report to the local police station nearest to your place of residence in person.

