

INSIGHTS

Sci-tech Advance Needs Collaboration, No Decoupling

Opinion

By QI Liming & LONG Yun

What are the key issues that stand out when international scholars review the China-U.S. sci-tech agenda for 2022: The China Initiative, *The CHIPS and Science Act (The Chip Act)* or sci-tech decoupling between the two countries?

"We need to evolve into a win-win framework to ensure both sides can benefit from the collaboration. China and the U.S. need to find an intermediate point, where both sides can be accommodated," said Professor Dennis Simon, the senior adviser to the President for China Affairs at Duke University, during a wide-ranging interview with *Science and Technology Daily* on November 10.

A new agreement to be expected

Over the last 40 years, the China-U.S. collaboration involving universities, research institutes, think tank, and researchers has far surpassed what the government to government agreement ever imagined, Simon said.

"We must come back to the table as soon as possible and restore the discussions about what we specifically need to fix or improve," he noted.

Public diplomacy in sci-tech or people-to-people diplomacy in sci-tech is something both the two countries ought to pursue because of the potential synergies and mutual benefit. For this purpose, Simon gives two suggestions.

Firstly, the Chinese universities and the American universities ought to build a consortium so they can discuss problematic areas. Under this consortium, they can define the rules of going forward and preempt new problems before they occur.

Secondly, we need an entirely new sci-tech agreement, one that can address prevailing concerns upfront. Let's call it, "Sino-U.S. S&T Cooperation, 2.0".



Professor Dennis Simon is interviewed by Science and Technology Daily. (PHOTO: SCIENCE AND TECHNOLOGY DAILY)

The proposed new agreement should include reference to the critical issues and problems that emerged over the last 40 years and provide correctives for them.

The two countries could make new explicit commitments so that there would be reciprocal guarantees about maintaining the integrity of the agreement. The new agreement could reflect a new set of targets for cooperation reflecting the current agenda, for example, dealing with major global challenges.

"If the two countries come to that agreement together, I think both the two countries would have a new era of 40 years of very fruitful collaboration," said Simon, adding that looking forward is needed and no looking back.

Damage outweighs benefits

The Chip Act has some punitive aspects to restrict access of China not just to chips, but also the production equipment that is used to make semiconductors.

"I believe very firmly that this kind of policy is going to be more damaging than beneficial to the U.S.," said Simon.

We live in a globalized world, and new knowledge and information are generated today through cross border collaboration and trans-national knowledge networks, he said, adding that China is

now an established player in terms of these transnational networks, such as the numbers of co-authored articles which Chinese and international scholars have produced.

"So I think the benefits of collaboration and cooperation outweigh the damages," he said, noting that the whole logic of the so called "China threat" doesn't make much sense as one of the principal elements shaping U.S. foreign policy.

First of all, China is the largest market for semiconductors in the world, and it will continue to be the largest semiconductor market for the next five to 10 years at least. There are major profits of tens or hundreds of millions USD that U.S. semiconductor industry is going to be earned from China's growth in the semiconductor industry.

Secondly, China is very good at technology application. It has already shown some innovative capabilities regarding chip technology that are used in electric and autonomous vehicles. The world can benefit from China's innovation. By restricting China's access to technology, we are limiting the overall innovation potential as well.

Finally, something the U.S. has to realize is that it can benefit more from cooperation with China than it can from

trying to contain China through the current array of restrictive policies and regulations.

The lingering impact of The China Initiative

When talking about the restrictiveness, Simon said at present we can already see that Sino-American university collaboration has been damaged by the events of the last four or five years.

The most typical U.S. government policy, of course, has been The China Initiative released by the U.S. Department of the Justice.

Even though The China Initiative was terminated in early 2022, its lingering effects continue to be felt throughout the U.S. academic community and in particular among Chinese-American scientists.

It continues to be felt in China as well. Many Chinese scientists who might want to come to the U.S. now have some trepidation: will they be safe, will they be accused of being a spy, etc.

So, it has chilled U.S.-China academic collaboration. In fact, Simon stated, "the American academic community does not want to curtail engagement with China."

"Collaborative research has turned out to be very beneficial and increasingly beneficial over time," he said, adding that, "China is able to be a contributor as a fully-fledged member and the benefits to be shared are potentially significant. So we must figure out a way on how to rebuild the trust and confidence and improve communication about how we can work up together."

Moreover, Simon pointed out, it simply does not make sense for the U.S. to disengage from China precisely at a time when China's advancing S&T capabilities could add a great deal of value-giving real meaning to the concept of mutual benefit.

This article is contributed by Chinese Academy of Science and Technology for Development.

Chinese Solution Strives to Promote Global Development

Voice of the World

Edited by TANG Zhexiong

Themed "Recover Together, Recover Stronger," the 17th Group of 20 (G20) Summit held on November 15 and 16, focused on three priority issues, namely, global health architecture, sustainable energy transition and digital transformation.

Speaking on the eve of the G20 Summit, UN Secretary-General Antonio Guterres called for joint global efforts to address global challenges such as climate change and sustainable development.

The world is going through momentous changes unseen in a century, which are consequential to the world, to our times, and to history.

The global community not only expects the G20 to build consensus, and promote open, inclusive, and mutually beneficial cooperation, but also expects China to continue playing an active role in solving the global development dilemma.

But development for what and what kind of development do we need? More and more people are now thinking about such issues as the impact of the pandemic continues to impede the global economy.

Promoting global development means all countries need to work together to face the challenges. Major countries need to act like major countries. They should provide more global public goods, take up their due responsibilities and live up to people's expectations.

"The modernization of a small number of Western countries was based on the exploitation, oppression and colonization of almost the entire world. China is not developing by exploiting any other country; China is developing itself and modernizing itself, and at the same time helping other countries to develop and modernize," said Keith Bennett, British business leader and vice

chair of the 48 Group Club.

From deepening international cooperation in the fight against the COVID-19, to promoting digital economy, green transformation, and ensuring food and energy security, China has always stood by the developing countries, making its contribution to global development.

Marzuki Alie, former speaker of the People's Representative Council of Indonesia, said China has become essential in improving global governance and can help developing countries have a stronger voice on the international stage.

The concept of building a community with a shared future for mankind shows China is willing to work with other countries to create a peaceful and secure world with openness and inclusiveness, said Marzuki.

The latest World Bank report shows that from 2013 to 2021, China contributed up to 38.6 percent on average to world economic growth, becoming a major trading partner of more than 140 countries and regions, with its total trade in goods ranking first in the world.

The Chinese path to modernization aims to seek a balance and leave no one behind, which will lead to peaceful global development, according to former Bolivian President Evo Morales.

China always supports multilateralism and shares its development with the rest of the world, said Morales, adding that China is profoundly different from some Western countries, which set conditions when they invest, "such as privatization."

Guterres noted that while global development remains highly unequal and imbalanced, the UN commends China's commitment to multilateralism. When it comes to helping developing countries realize common development, China's efforts have been unmatched. The UN wishes to continue to work closely with China and looks forward to China playing an even more important role in upholding world peace and development.

U.S. Chip Giants Confident in China's Potential

Comment

By GONG Qian

The U.S. has been steadily tightening its grip on China's technological advance, especially in the semi-conductor industry. The latest move, announced by the Biden administration earlier in October, was to prohibit the delivery of high-end semiconductor and chip-making equipment to China.

Under such circumstances, some U.S. chip and semiconductor giants, including AMD, Qualcomm, Intel, Texas Instruments (TI) and Lam Research, still partici-

pated in the fifth China International Import Expo (CIIE), held from November 5 to 10 in Shanghai. They expressed strong confidence in China's market.

The U.S. should hold a more objective and rational attitude toward the fact that these companies are benefiting from China's policy and development. The move of forcing them to cut ties with China is harming their interests, which in turn damages the U.S. interest.

Hou Mingjuan, vice president of Qualcomm said that the company sees China not just as a market, but as an opportunity to build strong partnerships. Her words are echoed by her colleague, Meng Pu, the chairman of Qualcomm

China. "Qualcomm has been increasing its investment in China in the past five years," Meng told Yicai Global.

"China's improving business environment is boosting foreign enterprises' confidence in operations in the country," said Meng. In the past five years, Qualcomm has annually increased its number of employees in China by at least 20 percent. Meanwhile, the number of Chinese startups that have received Qualcomm Venture's investment has increased about 70 percent to near 90, Meng added.

Meng said the company has participated in CIIE for five consecutive years, adding that thanks to CIIE, Qualcomm has expanded its cooperation with Chinese counterparts in different sectors, ranging from mobile phones, autos and Internet of Things, to artificial intelligence and extended reality.

Apart from Qualcomm, other U.S. leading chip companies are also taking actions to expand investment in China.

At this year's CIIE, TI announced the installation of equipment inside its second assembly and test factory in Chengdu, CDAT2, to prepare for future production. The factory is expected to become operational in the next few months. In addition, it also announced an expansion and automation update for its Shanghai product distribution center.

This demonstrated the company's belief to deeply invest in China and serve customers, said Jiang Han, vice president of TI and president of TI China. "Over the past 10 years, China's

worldwide semiconductor market share has nearly doubled from four to seven percent ... Now, China is the world's largest consumer of electronics and the largest market for the world's chip makers," said John Neuffer, President and CEO of SIA, in a video speech at the opening of 2022 World Conference on Integrated Circuits on November 17.

China's semiconductor sales totalled 192.5 billion USD last year, up 27.1 percent year-on-year, according to data from the China Semiconductor Industry Association (CSIA). Its imports of ICs amounted to 432 billion USD in 2021, a 23.6 percent increase from the previous year, according to data released by the General Administration of Customs of China in January.

On the other hand, China has been implementing proactive policies to improve the business environment for foreign investment. China released the Catalogue of Encouraged Industries for Foreign Investment (2022 Version) on October 28, just days after the conclusion of the 20th CPC National Congress. It will come into force on January 1, 2023. This demonstrates China's firm standing on its opening-up policy, a key statement emphasized during the 20th CPC National Congress.

Global industry cooperation has been essential to build the complex and sophisticated semiconductor ecosystem, and this level of global industry cooperation is more important than ever, given the unique and formidable challenges facing our industry, said Neuffer.



A hot-running test is carried out on a section of the Jakarta-Bandung High-Speed Railway in Bandung, Indonesia. Built with Chinese technology, it is a flagship project that combines the China-proposed Belt and Road Initiative with Indonesia's Global Maritime Fulcrum strategy. (PHOTO: XINHUA)

Magic Travel Tool for Motion Sick Passengers

Hi! Tech

By QI Liming

A motion sickness bracelet could help travelers ease carsickness and similar symptoms. This magic travel tool, designed exclusively for carsick, seasick and airsick passengers, was displayed recently at the 2022 CIIE.

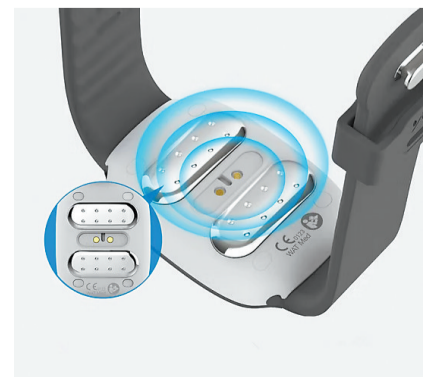
Where the mystery of the bracelet lies is in its precise electrical pulses. By stimulating the median nerve in the wrist with a precise electrical pulse, then sending the signal to the vagus nerve, the nausea and vomiting signal sent by the brain could be blocked.

The bump electrode against the skin on the bracelet works efficiently, reducing the discomfort caused by motion sickness. The one-button control simplifies the operation procedure. Motion sickness passengers simply need to press a button on the bracelet and wait

for the operating light to switch on.

Compared with taking medicines, the bracelet has no side effects. It is light in weight, rechargeable and recyclable, with a simple and waterproof design, making it easy for passengers to carry.

The bracelet can also help relieve dizziness and vomiting caused by the smell of fuel, perfume, leather, etc. and also inhibits these discomforts when caused by VR glasses and playing video games.



The bump electrode against the skin on the bracelet. (PHOTO: SCREENSHOT)



Texas Instruments displays its integrated circuits products at the 5th CIIE. (PHOTO: XINHUA)