



中国科学技术协会  
China Association for Science and Technology

# CAST Newsletter

NO.26

## Steady Impact Factor Rise for CAST and AAAS Journal *Research*



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## Headlines

### CAST President Wan Gang attends the 14th Annual Meeting of the New Champions



Opening ceremony of the 14th Annual Meeting of the New Champions  
Photo credit: Xinhua News Agency

On June 27 and 28, 2023, Wan Gang, President of the China Association for Science and Technology (CAST) attended the 14th Annual Meeting of the New Champions (also known as the “Summer Davos Forum”) in Tianjin, China, upon an invitation from Professor Klaus Schwab, Executive Chairman of the World Economic Forum (WEF).

On June 27, Wan met with Professor Schwab and expounded on China’s dedication to fostering an atmosphere of openness and innovation. Wan also voiced China’s willingness to work with other countries to build a global community of shared future and intent to contribute significantly to sustainable global development. Both parties exchanged views on potential avenues for future cooperation.

The next day, Wan Gang participated in the Annual WEF Economic Leaders’ Meetings. He presented an overview of China’s efforts to form a new energy system that prioritizes renewable energy. Under-

lining China’s resolve to encourage research, development, and industrialization of new energy vehicles (NEVs), Wan highlighted the country’s efforts to tackle global climate change and its ongoing commitment to international cooperation on carbon emission policies and standards.

(Source: Official website of CAST)

### Steady impact factor rise for CAST and AAAS journal *Research*

On June 28, 2023, Science Citation Index Expanded, a subsidiary of Clarivate, released its 2022 annual impact factors. Among 73 comprehensive natural science journals worldwide, *Research*, a *Science* partner journal, achieved an impressive impact factor of 11.0, securing the 9th position. *Research* is currently included in 10 prominent Chinese and international databases

such as SCIE, EI, DOAJ, INSPEC, and Scopus.

Established in 2018 by the China Association for Science and Technology (CAST) and the American Association for the Advancement of Science (AAAS), *Research* is a comprehensive open-access journal committed to publishing high-quality research. Its editorial board consists of 196 experts from China and around the world including 71 members of academies of sciences of different countries. The journal has published over 600 influential papers online covering 11 cross-disciplinary areas including advanced energy, advanced manufacturing, advanced materials, and artificial intelligence. The papers were submitted by esteemed authors affiliated with top universities and renowned research institutions worldwide. Since its launch, the official website of *Research* has attracted over 1.5 million visits from around the globe.

**Research**  
研究 OFFICIAL JOURNAL OF CAST



Covers of *Research* issues

Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

## Upholding rigorous standards in academic research

*Research* follows a meticulous solicitation system. The Editor-in-Chief and editorial board actively seek manuscripts from highly cited authors in SCIE and Scopus, renowned experts, and esteemed scholars across diverse disciplines. The journal maintains stringent quality control measures for publication. Authors submitting manuscripts are expected to meet academic excellence standards comparable to those of esteemed journals like *Science Advances* to ensure their work has a significant impact across multiple fields and reaches a broad readership.

Furthermore, *Research* initiatives have gained substantial recognition. The journal publishes the annual “Top 10 scientific issues concerning human development,” a highly anticipated report that

receives widespread coverage in mainstream media. Additionally, it organizes regular Editor-in-Chief Global Forums to drive advancements in cutting-edge disciplines.

(Source: Official WeChat account of the China Centre for International Science and Technology Exchange)

## CAST Department of International Affairs discusses opportunities for cooperation with the Frontiers Research Foundation



Meeting with the delegation from the Frontiers Research Foundation  
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

On June 30, 2023, officials from the CAST Department of International Affairs, the China Centre for International Science and Technology Exchange, and the Chinese Geophysical Society welcomed a delegation led by Dr. Frederick Fenter, an Executive Board member of the Frontiers Research Foundation (FRF) and the Chief Executive Editor of *Frontiers* journals, to Beijing.

Wang Qinglin, a Senior Inspector of the CAST Department of International Affairs and Vice President of the China Committee for the International Science Council (ISC-CHINA), underscored CAST's commitment to promoting openness, trust, and collab-

oration within the global scientific community. As an official ISC member, CAST's participation in the Frontiers Planet Prize demonstrates its dedication to collaboration with the ISC. CAST is highly motivated to work with international partners, advocate scientific progress for individuals worldwide, and contribute to the United Nations 2030 Agenda for Sustainable Development.

A non-profit organization, the Frontiers Research Foundation has pioneered two public initiatives: the Frontiers Planet Prize and the popular science journal *Frontiers for Young Minds*. Dr. Fenter acknowledged the programs' commitment to increasing research output, expanding the visibility of participating scientists, fostering scientific literacy among young people, and nurturing interest in learning science. He conveyed optimism for CAST's ongoing

involvement in nominating scientists for the prize and extended a warm invitation to Chinese scientists and young individuals to contribute to the journal.

(Source: Official WeChat account of the China Centre for International Science and Technology Exchange)

## Global Digital Economy Conference 2023 launches the *Global Digital Economy Partner City Cooperation Initiative*



Launch ceremony of the *Global Digital Economy Partner City Cooperation Initiative*  
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

The Global Digital Economy Conference 2023, organized by the Beijing Municipal Government and CAST, opened on July 4 at the China National Convention Center in Beijing. Themed “Data Drives Development, Intelligence Leads the Future,” the conference invited Singapore as the first Country-of-Honor. It included a grand opening ceremony, a main forum, six summit forums, six special events, and various thematic forums and events focused on establishing a global network of partner cities in the digital economy.

At the opening ceremony, representatives from 18 partner cities jointly launched the *Global Digital Economy Partner City Cooperation Initiative*. The Initiative focuses on promoting global city exchange and cooperation, creating a mutually beneficial market environment, fostering a conducive ecosystem for digital-tech innovation, accelerating urban digital transformation, supporting green development through digital technologies, and driving inclusive cooperation in the global digital sector. Its goal is to develop an open innovative network for the digital economy in various global cities that fit within international multilateral and bilateral frameworks.

The Global Digital Economy Conference, held twice since 2021, has emerged as a leading platform for international exchange and cooperation. It serves as a catalyst for digi-

tal empowerment and creates new drivers for digital consumption. It also actively promotes an open and mutually beneficial cooperation pattern in the digital realm.

As China's hub for technological innovation and international collaboration, Beijing has been actively fostering partnerships with numerous

cities worldwide, aiming to enhance global cooperation on the digital economy. Looking ahead, the Global Digital Economy Conference is committed to further expanding its network of partner cities and promoting development of the digital economy. By strengthening intercity collaboration and leveraging the conference's platform, it aims to create more opportu-

nities for all participating parties to collectively build and benefit from advancements in digital economic development, explore the potential of the digital economy, and invigorate global economic growth.

(Source: Official WeChat account of the China Centre for International Science and Technology Exchange)

### Academic Exchange

## The Secretary General of IHFCA attended the Executive Board Meeting of CEET



Executive Board of the United Nations CEET  
Photo credit: Official WeChat account of IHFCA

Ms. Wang Ju, Secretary General of the International Hydrogen Fuel Cell Association (IHFCA) and expert member of Executive Board of the Council of Engineers for the Energy Transition (CEET), attended the Executive Board Meeting of CEET from July 12 to 14. During the meeting, she offered technological and development suggestions on carbon neutrality and energy transition.

As the co-leader of the working group developed by the CEET focusing on the transportation sector, Ms. Wang proposed a three-dimensional development pathway of new energies and new energy vehicles. Additionally, she analyzed the core parts of hydrogen fuel cell vehicle technology pathway, thereby helping to reach a consensus among the Executive Board members regarding the role played by hydrogen in carbon reduction and

carbon neutrality.

Ms. Wang pointed out that automotive electrification holds immense potential to revolutionize the transportation sector and drive the global energy transition. China will continue to promote energy transition with a sound industry framework, supportive regulatory environment and technological innovation to build a sustainable future with the rest of the world.

The CEET was launched in September 2021 by the United Nations Industrial Development Organization (UNIDO) and the United Nations Sustainable Development Solutions Network (SDSN). It is a global, high-level body of engineers and energy systems experts to contribute to the UN Secretary General's goal to build a coalition to achieve net zero emissions by 2050, and to the UN generally on engineering pathways to achieve comprehen-

sive decarbonization by mid-century.

(Source: Official WeChat account of the International Hydrogen Fuel Cell Association)

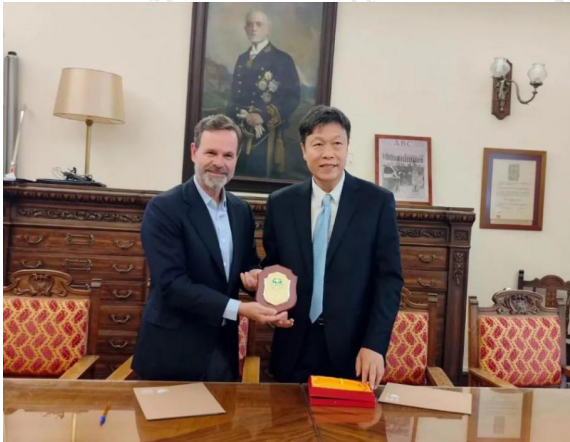
### **Geographical Society of China and Spanish Geographical Society sign cooperation agreement**

On June 21, 2023, Chen Fahu, President of the Geographical Society of China (GSC), led a delegation to visit the Spanish Geographical Society (SGE) headquarters in Madrid upon an invitation from the SGE. With representatives from both societies present, the presidents of the two organizations signed a comprehensive bilateral cooperation agreement, marking a significant milestone.

The agreement covers a wide range of joint initiatives including academic exchange



through conferences, joint publication of journals, exhibitions, protection and promotion of geographic names, exchange programs between geographical institutions in both countries, international academic internships, joint scientific expeditions, popular science events, geographical education activities, exchange of geographical literature, and mutual recognition of members. The agreement also explicitly pledged that the Spanish Association of Geographers (AGE) would provide strong support for academic exchange and cooperation to be undertaken by the two societies.



Presidents of the GSC and the SGE pose after signing the cooperation agreement  
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

Founded in 1997, SGE's primary objective is to revive and encourage Spain's exploration and discovery endeavors on a global scale, disseminate knowledge, and foster research progress in earth sciences. SGE also strives to broaden exposure to diverse cultural customs and lifestyles and serves as a catalyst for research, science, culture, exploration, and travel initiatives. SGE actively engages institutions and individuals interested in geography, travel,

and exploration, and provides them valuable opportunities for learning, communication, and collaboration.

(Source: Official WeChat account of the China Centre for International Science and Technology Exchange)

## **Belt and Road Forum on Tropical Agricultural Science and Technology Cooperation**

On June 29, the 2023 Belt and Road Forum on Tropical Agricultural Science and Technology Cooperation took place in Haikou, Hainan Province. The forum, organized by the Chinese Society for Tropical Crops, brought together 80 participants to discuss collaboration opportunities on tropical agricultural science and technology among countries along the Belt and Road. Attendees included representatives from international organizations such as

the United Nations World Food Programme (WFP), the Alliance of Biodiversity International and the International Center for Tropical Agriculture (CIAT), and the International Society for Tropical Root Crops (ISTRC) as well as delegates from 14 tropical countries and Chinese tropical scientific and educational institutions.



Opening ceremony of the 2023 Belt and Road Forum on Tropical Agricultural Science and Technology Cooperation  
Photo credit: Official WeChat account of KEXIEGAIGEJINXINGSHI

There, Chinese and international experts delivered presentations on a wide array of topics. They included the China-World Food Programme South-South Cooperation (SSC) Knowledge Sharing Platform, international cooperation in science and education as part of the Belt and Road Initiative, advancements in cassava and soil health, the plum industry, olive tree cultivation, banana farming, African tropical agriculture, tropical legumes, cultivation of tropical crops in Pacific Island nations, and cocoa production and research. Participants also engaged in in-depth

discussions on potential collaborations in these areas.

The forum served as a valuable platform for experts in tropical agricultural science and technology to exchange information and share experiences among Belt and Road countries. It facilitated cooperation, improved the quality of collaboration and development resilience, and promoted progress in global tropical agriculture.

(Source: Official WeChat account of KEXIE-GAIGEJINXINGSHI)

## Chinese scientist Niu Fujun elected to the Executive Committee of the International Permafrost Association

From June 18 to 22, 2023, the International Permafrost Association (IPA) presented the 6th European Conference on Permafrost (EUCOP6)

in Spain. A total of 449 experts and scholars from 33 countries gathered in the town of Puigcerdà to discuss global and regional permafrost issues and conduct field investigations.



Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

The conference elected new members to the IPA Executive Committee. Among them was Niu Fujun, a research fellow from the Northwest Institute of Eco-Environment and Resources (NIEER) of the Chinese Academy of Sciences (CAS). Nominated by the Geographical Society of China, he will serve on the committee until 2027.

China is home to some of the world's major high-altitude permafrost regions such as the Qinghai-Tibet Plateau and the Central Asian mountains and plateaus. As a founding member and active participant in the IPA, China has undertaken innovative research in permafrost studies and cold region engi-

neering. The Glacier and Permafrost Branch of the Geographical Society of China represents China in the IPA and actively engages in IPA activities.

Established in the United States in 1983 by China, Canada, the United States, and the Soviet Union (Russia), the IPA plays a crucial role in promoting research, exchange, and cooperation in permafrost-related fields within the global scientific and engineering communities. Its primary mission is to contribute to the study and protection of permafrost. To achieve this, the association organizes regional and international conferences to provide a platform for individuals working in permafrost and related subjects to share knowledge and exchange experiences.

(Source: Official WeChat account of the China Centre for International Science and Technology Exchange)

## Scientist Profile

### Feng Lin: Unraveling the complexity of farmed fish nutrition



Feng Lin is the Deputy Director and a Professor at the Animal Nutrition Institute of Sichuan Agricultural University. She was the laureate of the 17th Chinese Young Women in Science Award and a nominee for the National Talent Program. She is also recognized as a National Expert with Outstanding Contributions. She is a member of the Academic Committee for the World's Chinese Scientists on Nutrition and Feeding of Finfish and Shellfish in addition to serving as the Deputy Director of the Aquatic Animal Nutrition Committee within the Chinese Animal Nutrition Society.

Her research focuses on nutrition and feed regulation theory and technology with an aim to improve the health and meat quality of freshwater fish. Born in 1980, she has secured 20 international and national invention patents and authored over 150 SCI-indexed papers as the principal or corresponding author, including three ESI hot papers. Elsevier acknowledged her as a highly cited scholar in 2020 and 2021.

Photo credit: *Science and Technology Daily*

For over two decades, Feng Lin has been dedicated to the theoretical and technological research required to pinpoint the intricacies of freshwater fish meat nutrition. Her extensive exploration of the effects of diverse nutrients and functional substances on the health and quality of fish meat, particularly in species like grass carp, has led

to considerable breakthroughs. Her research has created essential nutritional and technological backing for the sustainable development of freshwater aquaculture and has positively influenced the livelihoods of fishermen by improving their income. Reflecting on her journey, Feng Lin expressed gratitude. “I am incredibly fortunate

to have pursued my passion in this field for over two decades,” she said. “Everything fell into place perfectly.”

#### Finding breakthroughs in fish feed

Fish play a vital role in the Chinese diet as an essential source of protein. In 2020, China witnessed a remarkable

milestone in its aquatic product industry, with a total output of 65.49 million tons and a fishery output value of 1.35 trillion yuan. This remarkable growth was in large part facilitated by the widespread adoption of feed-based farming techniques.

To address concerns regarding the potential impact of feed-based farming on the quality of freshwater fish, Feng Lin and her team embarked on an extensive literature review to explore promising research avenues. Their objective was clear: to leverage nutritional regulation to simultaneously ensure optimal breeding outcomes for freshwater fish and enhance the quality of their meat.

### **Solid groundwork for scientific innovation**

Fish consumed by humans is primarily derived from muscle. To enhance the taste and nutritional value of

freshwater fish meat, Feng and her team actively screened for nutrients and functional substances that may affect its quality. They have conducted in vivo studies such as animal breeding experiments to assess the impact of these substances on freshwater fish muscle quality. Moreover, they perform in vitro studies including tissue culture and muscle cell culture to investigate how nutrients govern the growth, development, and quality-related traits of freshwater fish muscle.

Given the complexity of freshwater fish muscle tissue and the wide range of substances that can influence its quality, Feng and her team have been committed to carrying out extensive foundational work. For example, proteins have a substantial impact on the quality of freshwater fish meat and contain 10 essential amino acids crucial for muscle growth. As such, the

team endeavors to study the distinct effects of each of these 10 essential amino acids on the quality of freshwater fish meat.

“To investigate these variables, we conducted at least 10 animal experiments and countless cell experiments,” Feng Lin explained. Only after finishing these essential studies were they able to suggest a nutritional regulation plan to enhance fish meat quality.

After years of unwavering research, Feng Lin and her team have discovered that certain nutritional substances can boost the meat quality of grass carp in terms of nutrition, health benefits, flavor, and physical attributes. They compiled a precise nutritional requirements database that encompasses 32 nutrients to promote intestinal health and improve meat quality in grass carp. They have also recommended nutritional regulation

strategies that have been adopted by feed companies, thereby trans-

forming their research accomplishments into practical application.

(Source: *Science and Technology Daily*)

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CAST is the largest non-governmental organization of scientific and technological professionals in the world. Through its 215 member societies and local branches all over the country, CAST maintains close ties with millions of Chinese scientists, engineers, and other professionals working in fields of science and technology.

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