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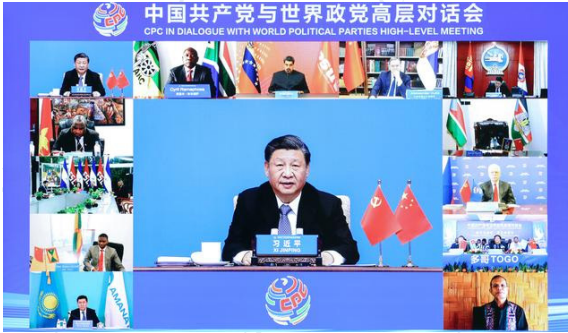
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Headlines

China's Global Civilization Initiative represents a significant step towards civilizational progress



Chinese President Xi Jinping makes a keynote speech at the CPC in Dialogue with World Political Parties High-Level Meeting
Photo credit: Xinhua News Agency

On March 15, 2023, Chinese President Xi Jinping proposed the Global Civilization Initiative (GCI) in his keynote speech at the opening ceremony of the CPC in Dialogue with World Political Parties High-Level Meeting.

The initiative, released publicly following the 20th National Congress of the Communist Party of China (CPC), calls for political parties to respect the diversity of civilizations, uphold humanity's shared values, value the inheritance and innovation of civilizations, and encourage robust international cooperation and people-to-people exchange. It represents a significant public good for the world. The initiative places significant emphasis on humanity's shared values and highlights the importance of keeping an open mind to the values of different civilizations and seeking the greatest common denominator. It also stresses the importance of understanding the inheritance and innovation of civilizations and encourages countries to

explore the history and legacy of different civilizations to make them more relevant. Furthermore, it calls on countries to establish a global network for inter-civilization dialogue and cooperation and adopt action plans and practices to help build a global community of shared future.

In the video address, President Xi emphasized the importance of promoting mutual understanding and trust among all nations as well as strengthening the cultural foundations that form the basis of a global community of shared future. He asked for joint efforts to advance the progress of human civilizations and achieve common prosperity.

(Sources: people.cn and cctv.com)

CAST releases 2023 International Science and Technology Conference Agenda Guidelines

After consulting the

CAST International Cooperation and External Liaison Committee, the Department of International Affairs of CAST recently released agenda guidelines for the upcoming international science and technology conferences scheduled for 2023.

CAST recognizes the significance of international science and technology conferences as vital platforms for researchers to share discoveries and establish professional networks. Such conferences play a crucial role in cultivating transparency, trust and cooperation within the international scientific community and are instrumental in promoting open science, encouraging knowledge sharing, and establishing standards. In alignment with China's vision of building a global community of shared future, the guidelines emphasize the ideals of technology for the greater good, academic innovation,

confidence in innovation, and mutual learning and exchange. The aim is to bring all stakeholders together and promote more exchange hubs.

The guidelines for 2023 cover 55 topics ranging from green low-carbon technologies and cutting-edge technologies in green agriculture to future seeds and biotechnology, large-scale energy storage, artificial intelligence algorithms, and computing power. They are divided into four groups.

(Source: Official website of CAST)

Local Updates

China launches 2023 national museum joint science popularization campaign



Launch ceremony of the 2023 national museum joint science popularization campaign

Photo credit: Official website of CAST

In collaboration with the Chinese Association of Natural Science Museums (CANSM), the China Science and Technology Museum recently announced the launch of a national Museum joint science popularization campaign aimed at promoting resource sharing and high-quality development of a modern

science and technology museum system in China.

As part of the campaign, eight themed joint exhibitions and four industry exchange seminars will be held alongside regular conferences throughout the year to empower participants to share high-quality science education resources and progress reviews. Organizers expect the campaign to serve as a powerful tool for Chinese museums to engage with wider audiences, expand their reach, and highlight the importance of science in society.

(Source: Official website of CAST)

Online seminar of the China-UK Library Forum

On March 7, 2023, the National Library of China, the Library Society of China, and the British Library jointly hosted an online seminar for the China-UK

Library Forum. The event was attended by over 200 library experts and librarians from China and the UK who exchanged views on protecting and restoring ancient books.

A series of workshops on recorded video lectures on various topics such as the rubbing and tracing of oracle bone inscriptions, scroll-binding in bookmaking, collection, compilation and protection of folk historical documents, introduction to cradle books, gold stamping techniques, and restoration of the Lotus Sutra were conducted before the forum. During the event, three Chinese and four British experts shared their insights and answered questions.

Participants applauded the timely organization of the event and asserted that it broadened their understanding of the topics and helped them develop new ideas and approaches.

The China-UK Library Forum was launched

in 2019 with an aim to promote mutual understanding and in-depth communication between the libraries of the two countries. This year's event marked their fourth consecutive collaboration, building on the success of the two previous forums in March 2019 and October 2020 as well as an online seminar in 2021 which also focused on the crucial issue of protecting and restoring ancient books.

(Source: Official website of CAST)

Academic Exchange

International Hydrogen Fuel Cell Association becomes Class A liaison organization of ISO/TC197

The International Hydrogen Fuel Cell Association (IHFCA) recently gained approval from the Technical Committee on Hydrogen Technologies

of the International Organization for Standardization (ISO/TC197) to become the first ISO/TC197 Category A liaison organization headquartered in Asia.

IHFCA was launched in July 2022 under the supervision of CAST. This recognition enables IHFCA to participate in international standard-setting activities, advance exchange and cooperation with other organizations, and contribute to the governance of hydrogen technology.

(Source: Official website of CAST)



Logo of IHFCA
Photo credit: Official website of IHFCA

Chinese Society of Engineers convenes inaugural executive council meeting of 2023

On March 16, the Chinese Society of Engineers (CSE) convened its inaugural executive council meeting of 2023 in Beijing.

CSE's priorities for 2023, as discussed during the meeting, include enhancing engineering capacity building through bilateral cooperation, implement-

ing bilateral recognition agreements, and elevating the profile of Chinese engineers. Furthermore, CSE intends to join multi-lateral agreements for engineers, leverage its role at the International Advisory Committee to promote the high-quality development of its work, and provide innovative Chinese solutions to the world.

(Source: Official website of CAST)



Inaugural executive council meeting of 2023 of the Chinese Society of Engineers
Photo credit: Official website of CAST

Chinese marine microbiologist Jiao Nianzhi's MCP theory sparks worldwide attention

The Ocean Negative Carbon Emissions (ONCE) program, led by Chinese marine micro-

biologist Jiao Nianzhi, was recently added to the United Nations Decade of Ocean Science for Sustainable Development (2021-2030) Initiative and the 10-Year Framework of Programmes on Sustainable Consumption and Production (10YFP). Jiao's microbial carbon pump (MCP) theory, which *Science* journal refers to as "the invisible hand behind a vast carbon reservoir," explains how microbes contribute to carbon sequestration in the ocean and open a new field of research on negative emission technologies.



Photo credit: Official website of CAST

The ONCE program aims to address key scientific and technological issues related to using the ocean to absorb additional atmospheric CO₂. The program's inclusion paves the way for countries around the

world to participate in this initiative, which has already garnered support from 79 universities and research institutions in 33 countries. They are calling for the establishment of an international technology organization for ocean carbon-negative emissions, with its headquarters in China, to create an internationally recognized ocean carbon-negative emissions demonstration base and establish technical specifications and international standards for ocean carbon-negative emissions.

Jiao Nianzhi is a member of the Chinese Academy of Sciences (CAS) and vice President of the Chinese Society for Microbiology (CSM). He teaches at the College of Ocean and Earth Sciences at Xiamen University and is a member of the National Committee of the Chinese People's Political Consultative Conference. Thanks to his leadership and expertise, the ONCE program is

poised to make significant contributions to global efforts towards mitigating the impacts of climate change.

(Source: Official website of CAST)

Chinese scientist Xia Jun elected as foreign member of the Norwegian Academy of Science and Letters



Photo credit: Official website of the Geographical Society of China

On March 16, 2023, the Norwegian Academy of Science and Letters elected Chinese scientist Xia Jun as its newest foreign member. Xia is currently a professor at Wuhan University and serves as a member of the Chinese Academy of Sciences (CAS) and the vice president of the Geographical Society of China (GSC).

Xia Jun is widely recognized for his groundbreaking contributions in the field of international hydrology and water resources and has received numerous international honors and awards. He has headed several well-known international academic organizations and serves as president of the International Water Resources Association (IWRA). He has also played an instrumental role in promoting scientific and

technological exchange between China and Norway over the past two decades, fostering connections between Oslo University, Wuhan University, and the Chinese Academy of Sciences.

In his research, Xia has made innovative achievements in the temporal nonlinear theory of runoff formation and transformation, methods of watershed and urban water systems, and their integrated application in water resources, water environment, and water ecology. He has published over 180 papers in SCI-indexed journals such as *Nature Water*, *Water Resources Research*, and *Journal of Hydrology* and authored 12 books. His numerous prestigious awards include Second Prize of China's National Natural Science Award, the International Hydrological Prize - Volker Medal (HSP-VK), and the International Prize for Outstanding Contributions to Water Management (IPOCWM). He

has also been honored as a Fellow of the International Union of Geodesy and Geophysics (IUGG) and with the Lifetime

Achievement Award of the International Conference on Water Resources and Environmental Management

(ICWREM).

(Source: Official website of the Geographical Society of China)

Scientist Profile

Exploring the cutting edge of eco-friendly pest control



Guo Zhaojiang, born in March 1985, is director and doctoral supervisor at the Department of Plant Protection of the Institute of Vegetables and Flowers, Chinese Academy of Agricultural Sciences (CAAS). A passion for understanding how pests attack crops pushed him to dedicate the bulk of his career to exploring eco-friendly solutions to prevent such attacks. “Conducting agricultural research is akin to tilling the land,” as he put it. “The deeper you delve, the more likely you are to uncover something valuable.”

Photo credit: *People's Daily*

Guo Zhaojiang’s team was first to solve the polyphagous mystery of whiteflies. Their findings were published in a cover story in *Cell* in 2021, marking the first time Chinese agricultural entomology research ever appeared in such a prestigious journal. The same year, Guo’s team also reported the underlying mechanism of *Plutella xylostella*’s resistance to Bt toxins in *Nature Communications*. Their findings were swiftly recognized as a “milestone achievement” by the international agricultural community.

Solving the polyphagous mystery of super pests

According to the Food and Agriculture Organization (FAO) of the United Nations,

whiteflies are the second most destructive pest for crops worldwide and are currently considered the only known “super pest.” The tiny insects wreak havoc on over 600 different plant species including many vital vegetable crops by feeding on their sap. Additionally, whiteflies transmit more than 300 different types of plant viruses from one plant to another, further exacerbating crop damage.

Guo Zhaojiang’s team discovered that plants

produce a type of toxic secondary metabolite called phenolic glycoside when they are attacked by pests. However, when the pests leave the host plants, the plants can protect themselves by using their own detoxification gene, BtPMT1, to metabolize the phenolic glycoside within their bodies.

Guo accomplished what was once considered an impossible feat through his groundbreaking research: sequencing the genome of the whitefly.

His findings revealed that over the course of a long-term coevolution process spanning 35 to 86 million years, whiteflies acquired the detoxification gene BtPMT1 from their plant hosts. This gene enables the whitefly to neutralize phenolic glucosides in its own intestinal cells, causing the biochemical defense mechanism of the plants to fail. As a result, they can feed on an astonishing 600 or more host plants.

(Source: *People’s Daily*)

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CAST is the largest non-governmental organization of scientific and technological professionals in the world. Through its 216 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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