



CAST Newsletter

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Headlines

The awards ceremony for the 2022-2023 Project Award of the Invention and Entrepreneurship Award - Belt & Road and BRICS Skills Development & Technology Innovation Competition held in Beijing



Recipient representatives of the Invention and Entrepreneurship Award
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

On January 29, 2024, the awards ceremony for the 2022-2023 Project Award of the Invention and Entrepreneurship Award - Belt & Road and BRICS Skills Development & Technology Innovation Competition was held at the National Science and Technology Communication Center in Beijing. CAST President Wan Gang attended, delivered a speech, and presented awards to winners.

A total of 2,774 projects vied for the 2022-2023 Invention and Entrepreneurship Award, with 674 emerging victorious. Among them, 101 received gold awards, 236 secured silver, and 337 earned bronze.

Six projects received special awards including WIPO's special awards for Best Inventor, Best Woman Inventor, and Best Youth Inventor as well as the China Instrumentation Invention Award, the Macao Foundation Invention Award, and the Ali

Homer Award. The ceremony also honored outstanding organizations and commended contributions to the Invention and Entrepreneurship Award and praised the exceptional participation in the Belt & Road and BRICS Skills Development & Technology Innovation Competition.

The ceremony played a crucial role in fostering an environment conducive to innovation and promoting a culture that values knowledge and innovation.

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

CAST and AAAS discuss cooperation opportunities for their partner journal *Research*

On January 26, 2024, Luo Hui, Director General of the CAST Department of Interna-

tional Affairs, met with Bill Moran, publisher of the *Science* family of journals from the American Association for the Advancement of Science (AAAS), and his delegation in Beijing.

During the meeting, both parties reviewed and affirmed collaboration between CAST and AAAS in the realm of scientific journals. They also exchanged views on jointly supporting young scientists in China and the United States to enhance the quality of their research papers. In 2018, the two organizations co-established *Research*, an open-access scientific journal recognized for its international reach, significant influence, broad scope, and high standards. The first journal in the Science Partner Journal (SPJ) program since *Science's* inception in 1880, *Research* has been indexed in numerous journal databases, and its impact factor reached 11.0 in 2023. It publishes

original studies across 11 interdisciplinary fields including advanced energy, manufacturing, materials, artificial intelligence, environmental science, flexible electronics, health science, information science, micro/nanotechnology, quantum information, and space science.



Cover of the science partner journal *Research* compiled by CAST and AAAS
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

Following the meeting, Moran and his delegation visited the CAST History Gallery. Upon seeing a congratulatory letter from Thomas Edison to Chinese students who established the *Science* journal in 1905 while studying in the United

States, Moran noted Edison's past presidency of AAAS and his financial support for *Science's* establishment, highlighting the historical ties between the scientific communities of both nations. Both sides also reviewed their successful collaboration in science popularization and scientific education including joint seminars on scientific ethics and integrity building between China and the United States. They agreed to explore new areas and models of cooperation to build on their strong existing foundation of collaboration.

***Research* establishes a youth editorial board**

On January 1, 2024, *Research* announced its youth editorial board featuring 84 young scientists from around the world. On January 28, the board convened its first seminar which was attended by all members, colleagues

from *Science & Technology Review*, and editors from the *Research* editorial team.

During the seminar, board members outlined their research fields

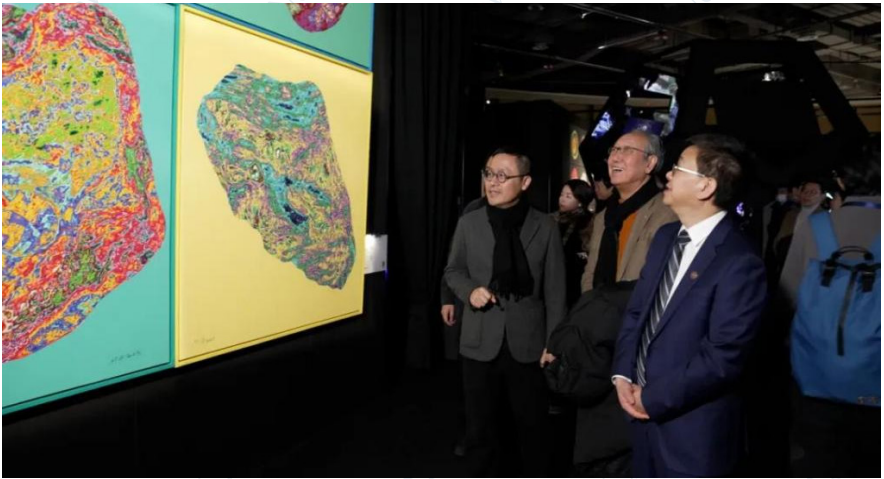
and conducted in-depth discussions on strategies to attract high-quality manuscripts and boost the journal's academic influence. They shared insights and suggestions and unanimously agreed

to stay dedicated to their roles, contribute to the journal's development, and strive to elevate its academic standing.

(Source: Official website of CAST)

Academic Exchange

6th Art and Science International Exhibition and Symposium

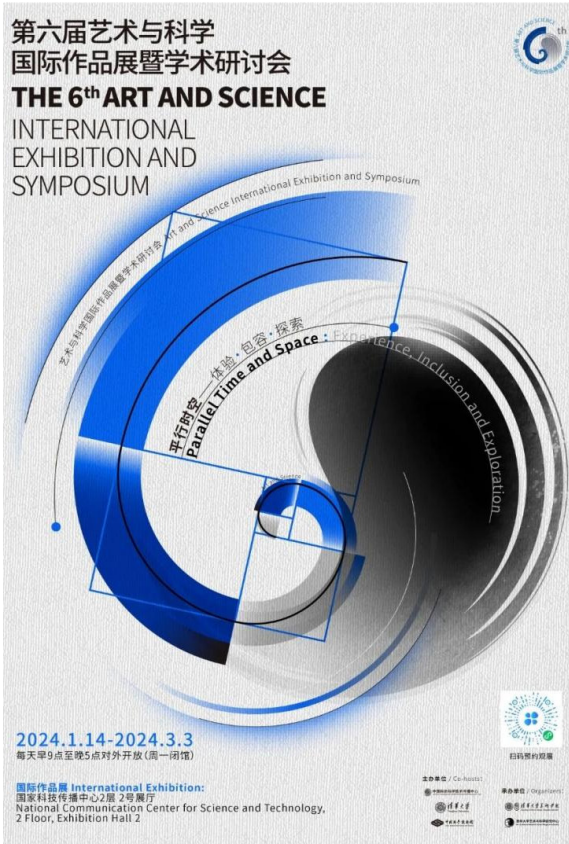


Visitors at the 6th Art and Science International Exhibition and Symposium
Photo credit: Official WeChat account of the Academy of Arts & Design of Tsinghua University

On January 14, 2024, the 6th Art and Science International Exhibition and Symposium kicked off at the CAST National Communication

Center for Science and Technology. This year's event, themed "Parallel Time and Space: Experience, Inclusion, and Exploration," brought

nearly a hundred works from globally acclaimed artists, scientists, engineers, and designers together. Through interactive experiences, light



Poster for the 6th Art and Science International Exhibition and Symposium
Photo credit: Official WeChat account of the Academy of Arts & Design of Tsinghua University

displays, immersive installations, paintings, and various other forms, it showcased the infinite possibilities arising from the fusion of art and science.

Launched jointly by Nobel laureate physicist Professor Tsung-Dao Lee and art master Professor Wu Guanzhong, the Art and Science International Exhibition and Symposium seeks to integrate art and science and promote innovation by exhibiting cutting-edge

global explorations in both fields and fostering academic discussion.

(Source: Official WeChat account of the Academy of Arts & Design of Tsinghua University)

The Chinese and European Materials Conference held in Beijing

From January 25 to 26, 2024, the Chinese Materials Research Society (C-MRS) and the European Materials Research Society (E-MRS) co-hosted the Chinese and European Materials Conference at Beijing Hotel. A prominent platform for academic exchange and collaboration between C-MRS and E-MRS, the conference attracted over a hundred distinguished experts, university presidents, leaders from prestigious academic institutions, society executives, organizers of academic events, and doctoral students from both China and Europe.

On the sidelines of the conference, C-MRS and E-MRS convened a bilateral cooperation meeting. Five representatives from each side engaged in extensive exchange and communication, leading to the signing of a long-term cooperation agreement. The agreement, which outlined the scope of cooperation between the two organizations and established a mechanism for daily operations, was geared towards spearheading global advancements in new materials, with profound implications for worldwide material research and application.



C-MRS representative Xie Jianxin and E-MRS President Tony Kenyon sign the cooperation agreement
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

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

International Awards

Associate Professor Nie Bingbing of Tsinghua University elected council member of IRCOBI

In September 2023, Associate Professor Nie Bing-

bing from Tsinghua University's School of Vehicle and Mobility was elected to the International Research Council on Biomechanics of Injury (IRCOBI). On January 11 and 12, 2024, Nie attended the biennial plenary council meeting in Munich, Germany, officially assuming her duties. She also joined the Editorial Committee and the Asia Committee of the council.

Established in 1971, IRCOBI is a leading academic organization in automotive safety and human collision injury research. It focuses on advancing research on injury mechanisms and protective system development and has secured a significant academic reputation and influence globally. The IRCOBI council is composed of prominent scholars in the field of human injury biomechanics worldwide, selected through a rigorous nomination and voting process for a five-year term. Currently, the



Associate Professor Nie Bingbing

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

council has 23 members.

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

Chinese scientists Liu Qing and Xin Zicheng win the World Golden Scientist Grand Award and the World Science & Technology Grand Award

The International Federation of Inventors' Associations (IFIA) recently hosted the 10th World Scientist Grand Awards (WSA) and the 9th World Invention Innovation Contest (WIC) in cooperation with Korea Invention Newspaper (KINEWS). Professor Liu Qing and postdoctoral fellow Xin Zicheng were honored with the World Golden Scientist Grand Award as well as the World Science & Technology Grand Award at the event. They were also appointed visiting profes-

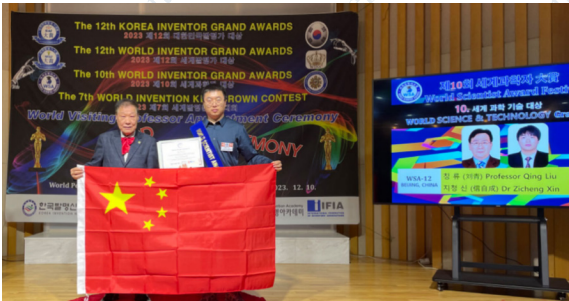
sors at Korean Invention Academy (KIA).

Their achievement involved developing an integrated manufacturing technology for the steel-making-continuous casting process. This technology leverages precise process control driven by both mechanism models and data models as well as collaborative operation across multiple processes. By implementing hierarchical vertical coordination and horizontal coordination across various processes, they successfully achieved collaborative operation and control of steelmaking plants.

Notably, their invention offers a method and system for predicting the amount of slagging lime during LF refining along with an optimized LF refining method. This innovation allows for the calculation of actual sulfur distribution ratios and final slag quality based on real-time steel and slag composition

and quality data. Consequently, it enables rapid and accurate determination of the lime required in the LF refining process.

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



Professor Liu Qing and postdoctoral fellow Xin Zicheng honored with the World Golden Scientist Grand Award and the World Science & Technology Grand Award
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

Professor Yue Peng of Wuhan University elected WG4 Convenor of ISO/TC211



Professor Yue Peng of Wuhan University after being elected WG4 convenor of ISO/TC211
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

Professor Yue Peng from the School of Remote Sensing and Information Engineering of Wuhan University was recently appointed WG4 convenor on Geographic Information/Geomatics by the International Organization for Standardization (ISO) Technical Committee 211 (ISO/TC211) in recognition of his outstanding contributions in the field of geographic information services and OGC open standards.

The primary objective of ISO/TC 211 WG4 is to advance global standards in geographic information services including network map services, geographic feature services, remote sensing image services, location services, tile map services, geographic markup languages, data visualization, and catalog services. Professor Yue's election is expected to facilitate integration of ISO and Open Geospatial Consortium (OGC) standards.

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

New organic mineral named after Chinese scientist Lian Bin from Nanjing Normal University



Lianbinite in hand specimen (indicated by the blue arrow)
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

In May 2023, the Commission on New Minerals, Nomenclature, and Classification of the International Mineralogical Association (IMA-CNMNC) granted approval for a novel mineral proposed by Dr. Hexiong Yang from the University of Arizona and Professor Gu Xiangping from Central South University. The mineral, named “Lianbinite,” was assigned the identifier IMA-2023-016. The official announcement was posted on the IMA’s official website in July 2023 and the CNMNC Newsletter 73 and Volume 35 of *Eur. J. Mineral.*

This new organic mineral, recorded as “Lianbinite” in the annals of mineralogy, is named after Professor Lian Bin from Nanjing Normal University in recognition of his outstanding contributions to the field of geological microbiology research. Its chemical formula is $(\text{NH}_4)(\text{C}_2\text{H}_3\text{O}_3)(\text{C}_2\text{H}_4\text{O}_3)$.

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

Professor Ming Li honored with the 2024 IEEE Computer Society W. Wallace McDowell Award

The IEEE Computer Society recently honored Professor Ming Li with the prestigious 2024 W. Wallace McDowell Award, in recognition of his groundbreaking and lasting contributions to modern information theory and bioinformatics. Professor Li is a distinguished expert

on the Proteomic Navigator of the Human Body (π -HuB) project and a professor at the University of Waterloo in Canada.

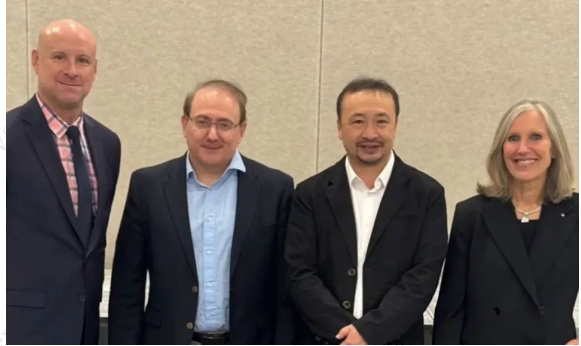


Professor Ming Li
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

The W. Wallace McDowell Award, established by the esteemed IEEE Computer Society, is the highest technical accolade awarded to individuals who have made outstanding contributions to computer science theory, practice, and application.

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

SUSTech Chair Professor Perry Ping Shum appointed 37th President of the IEEE Photonics Society



SUSTech Chair Professor Perry Ping Shum (middle right) after being appointed 37th President of the IEEE Photonics Society
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

Professor Perry Ping Shum, chair of the Department of Electronics and Electrical Engineering at the Southern University of Science and Technology (SUSTech), was recently appointed 37th President of the IEEE Photonics Society for the 2024-2025 term.

The Institute of Electrical and Electronics Engineers (IEEE) is a global association of engineers specializing in electronic technology and information science and the world's largest non-profit professional technical society. Within IEEE, the Photonics Society acts as a hub for scientists, engineers, and professionals working in fields of lasers, optoelectronics, and optics worldwide. The society is committed to fostering a diverse and inclusive environment within the photonics and optics disciplines.

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

Scientist Profile

Female chief scientist Han Xiqiu's quest for black smoke



“Delving into the depths of the ocean, much like exploring outer space, is essential for future sustainable development,” said Han Xiqiu, born in 1969. Currently, she serves as a research fellow at the Second Institute of Oceanography (SIO) of the Ministry of Natural Resources (MNR). She also holds the position of Deputy Director of the China Ocean Exploration Technology and Deep-Sea Science Research and Development Base and is Principal Investigator at the Key Laboratory of Submarine Sciences. Notably, she is the first female chief scientist in the history of Chinese oceanographic expeditions.

Han Xiqiu in 2010 with a sulfide rock procured during an expedition in the southwestern Indian Ocean
Photo credit: *Beijing Sci-Tech Report*

With a career spanning three decades, Han Xiqiu has weathered both tranquil waters and turbulent storms. Through these experiences, she has forged an unspoken bond with the ocean. Having led ten expeditions as either chief scientist or team leader, Han has made many significant discoveries including identifying 12 polymetallic sulfide deposits in the international seabed area and naming 16 new geographical entities on the ocean floor.

Race against time and knowledge

“Black smokers” refers to high-temperature hydrothermal vents found on the ocean floor, where hot metal-rich fluids erupt from cracks and swiftly react with cold seawater, creating dark metal sulfide minerals that resemble billowing black smoke. These locations not only host abundant polymetallic sulfide minerals but also support extreme ecosystems.

In 2010, Han Xiqiu led the 7th leg of the 21st Chinese Ocean Expedition as the chief scientist, exploring polymetallic sulfide resources in the southwestern Indian Ocean. During the return journey, they encountered harsh sea conditions on the first night, with their research vessel battling violent waves. Han closely monitored the ship's trajectory, radioed the control laboratory on deck for updates from the deep-sea camera, and

directed the chief mate to adjust course toward her targeted areas.

After four hours of grappling with waves, they finally stumbled on red hydrothermal deposits, marking Han Xiqui's first significant discovery as chief scientist. To highlight this previously unknown seamount in the depths of the southwestern Indian Ocean with rich polymetallic sulfide deposits, Han decided to name it after Yuhuangshan, a famous hill in Hangzhou, and dubbed the newly discovered hydrothermal area "Yuhuang Hydro-

thermal Area."

Shining light on breaking gender barriers in science

As a female scientist, Han Xiqui has defied traditional gender stereotypes in deep-sea exploration. She maintains that scientific inquiry is inherently impartial to gender—she primarily identifies herself as a scientist, with her gender secondary. According to Han Xiqui, "The standards of scientific research apply equally to everyone. They remain unchanged regardless of

gender."

As she explores the depths of oceans, Han Xiqui is committed to bringing the impact of science to a wider audience. Whether popular science courses at universities or educational talks at marine museums, she participates in various science outreach initiatives. "I aim to inspire a passion for science in the hearts of children, and I hope that some of them will pursue careers in marine science."

(Sources: news.cn and *Beijing Sci-Tech Report*)

Upcoming Conferences



The 7th Global Intelligent Industry Conference




Dates: March 30 - April 1, 2024





Location: Shenzhen, Guangdong Province, China





Hosts: The Chinese Society for Optical Engineering (CSOE), the German National Academy of Science and Engineering (acatech), the Russian Academy of Sciences (PAH), the Federation of German Industries (BDI), and Commonwealth Scientific and Industrial Research Organization (CSIRO)

 The conference, themed “Innovation, Integration, Empowerment, and Leadership,” includes a main forum focused on smart sensors and industrial artificial intelligence alongside parallel events for interdisciplinary discussion and a sub-forum on industrialization. It will also feature an expo showcasing intelligent and industrialization equipment and an exhibition on technological innovations and achievements in the field.

 **For more information, check out:** https://b2b.csoe.org.cn/meeting/GIIC2024.html#515_528

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