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CAST Newsletter

China Association of Inventions
attends 14th International Invention
Fair in the Middle East



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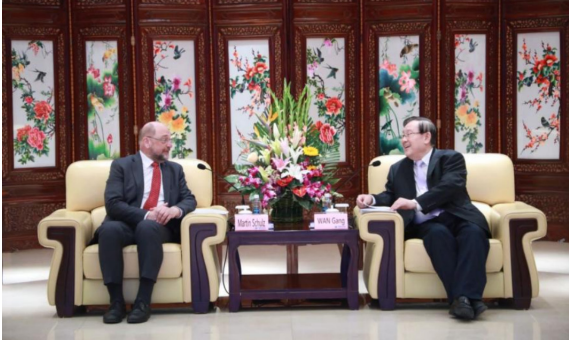
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Headlines

CAST President Wan Gang meets with the Friedrich Ebert Foundation President Martin Schulz



CAST President Wan Gang meeting with the Friedrich Ebert Foundation President Martin Schulz
Photo credit: Official website of CAST

On February 6, 2024, CAST President Wan Gang met with Martin Schulz, President of the Friedrich Ebert Foundation and former President of the European Parliament, in Beijing. They discussed strategies to enhance China-Germany cooperation in science and technology as well as China's work with Europe as a whole.

Wan Gang expressed a desire for closer collaboration between China and Germany, particularly to address important issues such as climate change, renewable energy, biodiversity, and infrastructure for new energy vehicles. He stressed the importance of achieving mutual benefits and fostering win-win outcomes to promote shared development.

Schulz praised China's significant achievements in areas like new energy vehicles and photovoltaic power generation, calling them valuable examples to

learn from. He expressed a keen interest in deepening exchange in science and the humanities between China and Germany and facilitating dialogue among professionals from both countries. Schulz also emphasized the significance of building mutual trust and friendship to promote cooperation and mutual benefit while respecting differences to find common ground.

(Source: Official website of CAST)

CAST Vice President He Junke sits with winner of 2023 Chinese Government Friendship Award

On February 5, 2024, He Junke, CAST Vice President in charge of daily work and Chief Executive Secretary of the CAST Secretariat, met in Beijing with Professor Yvon Le Maho, winner of the 2023 Chinese Government Friendship Award,

Executive Member of the International Society of Zoological Sciences (ISZS), and member of the French Academy of Sciences.

He Junke congratulated Professor Le Maho on receiving the award and expressed gratitude for his efforts to foster cooperation between China and France. He highlighted the significance of the 60th anniversary of diplomatic relations between the two countries this year and expressed hope that Professor Le Maho would continue to promote academic exchange and collaboration between scientific communities in China and France to enhance the friendship.

In response, Professor Le Maho thanked China for the honor and briefly discussed his work in biodiversity conservation. He acknowledged China's growing role in addressing global challenges hindering sustain-

able development and emphasized the importance of cooperation between the two countries. He pledged to continue actively participating in and promoting science exchange between China and France.

Following the meeting, ISZS hosted a reception to celebrate Professor Le Maho's honor as recipient of the Chinese Government Friendship Award.

(Source: Official website of CAST)

Academic Exchange

The China Association of Inventions attends the 14th International Invention Fair in the Middle East



CAI Vice President He Zhenfu exchanging views with the Kuwait Science Club Chairman Talal Jassem Alkharafi at the opening ceremony
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

From February 4 to 7, 2024, the 14th International Invention Fair in the Middle East (IIFME) was held in Kuwait City, capital of Kuwait. The China Association of Inventions (CAI) made its debut appearance, leading a delegation to showcase 10 invention projects spanning energy storage, drones, simulation management for offshore operations, healthcare, and construction.



Members of the Chinese delegation interact with exhibition visitors
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

The Chinese delegation achieved significant recognition at the fair, receiving one Jury's Special Award, five gold medals, and four silver medals. Among these, China's "Low-cost Zinc-Nickel Aqueous Flow Battery New Energy Storage Technology" won both the Jury's Special Award and the International Federation of Inventors' Associations (IFIA) Best Invention Award.

In addition to the exhibition, He Zhenfu, head of the Chinese delegation and CAI Vice President, conducted discussions with Alireza Rastegar, IFIA President, regarding CAI's participation in the upcoming Silicon Valley International Inventions Festival scheduled for July. Both parties agreed to sign a long-term memorandum of understanding on exhibition coop-

eration covering aspects such as exclusive agency, exhibition scale, and costs.

He also held bilateral talks with Talal Jassem Alkharafi, Chairman of the Kuwait Science Club (KSC) with whom he expressed mutual interest in promoting innovation transformation and enhancing cooperation between both countries. KSC agreed to proceed with internal procedures to establish a partnership, and both sides exchanged gifts and took photos to capture the moment.

Several exchange activities were organized throughout the exhibition to facilitate networking and collaboration opportunities among participants.

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

China-Malaysia Aviation Forum commemorates 50th anniversary of diplomatic relations



MoU signing ceremony at the China-Malaysia Aviation Forum
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange



Vincent Tan Kee Kim presenting a certificate of appreciation to the representatives of the Chinese delegation
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

On February 19, 2024, the China-Malaysia Aviation Forum was held in Kuala Lumpur as part of the celebrations commemorating the 50th anniversary of diplomatic relations between the two countries. The event was hosted by the Malaysian Ministry of Investment, Trade, and Industry and co-organized by the Malaysian National Aerospace Industry Coordinating Office (NAICO), the Chinese Society of Aeronautics and Astronautics (CSAA) and the International Association for Green Aviation (IAGA). Over 170 representatives from both countries' aviation technology and industry sectors attended.

Several significant agreements were signed during the forum: CSAA inked cooperation deals with the Malaysian Association of Autonomous Intelligence & Robotics (MyAIRA), and Volar Air Mobility Limited

partnered with Tahira Air and the Pahang State Government. IAGA also announced intentions to appoint Vincent Tan Kee Kim, founder of Tahira Group, as Chief Representative of the IAGA Malaysia Office.

Following formal sessions, companies from both countries participated in business matchmaking sessions to explore potential collaborations.

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

International Awards

Peking University team receives ISSCC 2023 Distinguished-Technical-Paper Award

Recently, the 2024 IEEE International Solid-State Circuits Conference (ISSCC) honored Profes-

sor Huang Ru, Professor Ye Le (Research Fellow Shen Linxiao), and their team from Peking University's School of Integrated Circuits with the ISSCC 2023 Distinguished-Technical-Paper Award. This prestigious recognition, the sole best paper award at the conference, signifies the highest international acclaim in integrated circuit design. It also marked the first time a Chinese team received an award from ISSCC since its inception in 1953, underscoring Peking University's global strength in innovative circuit design.



Award ceremony for the ISSCC 2023 Distinguished-Technical-Paper Award
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

The winning research addressed the need for high-speed, high-precision capacitor digital converters and offered novel solutions at both architectural and circuitry levels. By leveraging an innovative technique based on partial correlation level establishment, they streamlined the traditional coarse gain stage, significantly boosting equivalent open-loop gain while reducing power consumption. This breakthrough enhances energy efficiency and accuracy in inter-stage amplifiers, setting a new world record for the energy efficiency of high-precision capacitor sensors at a 1fFrms noise level, all while increasing conversion rates.

ISSCC is widely recognized as the foremost academic forum in integrated circuit design, earning the title “IC Olympics” from academia and industry worldwide. The Distinguished-Technical-Paper Award, the conference’s highest annual accolade, is rigorously assessed by the ISSCC technical committees, with only one paper selected globally each year.

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

Chinese Scientist Wang Meiyun receives WIPO Special Award for Best Woman Inventor



Wang Meiyun on stage receiving the WIPO’s Special Award for Best Woman Inventor
Photo credit: Official WeChat account of the China Centre for International Science and Technology Exchange

Chinese scientist Wang Meiyun was recently honored with the World Intellectual Property Organization (WIPO)’s Special Award for Best Woman Inventor at the 2022-2023 Project Award Ceremony of the Invention and Entrepreneurship Award and the Belt & Road and BRICS Skills Development & Technology Innovation Competition in Beijing.

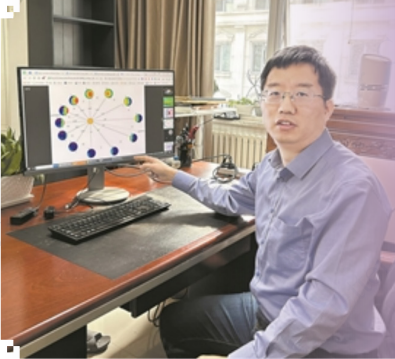
The only recipient of the award, Wang Meiyun was recognized for her groundbreaking work in developing key technologies for individualized magnetic resonance-guided focused neural modulation therapy. She specializes in diagnosing and treating neurological and mental disorders with functional and molecular imaging technologies and serves as a doctoral supervisor and postdoctoral supervisor at Zhengzhou University. She is also a member of the American Institute for Medical and Biological Engineering (AIMBE).

The team led by Professor Wang was also recognized with the Gold Medal of the “Innovation and Entrepreneurship Award” by the China Association of Inventions (CAI).

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

Scientist Profile

Rong Zhaojin breaks new ground in planetary magnetic research



Uncovering physical laws with satellite data: an enjoyable challenge

Born in 1982, Rong Zhaojin is a research fellow at the Institute of Geology and Geophysics of the Chinese Academy of Sciences. His expertise is exploring interactions between solar wind and Earth and other planets.

Rong Zhaojin explains variations in Mars' orbit caused by solar radiation
Photo credit: *Science and Technology Daily*

Working with international scholars, Rong Zhaojin and his team conducted a ground-breaking study. They uncovered direct evidence of Mars' crust capturing solar wind ions, a discovery detailed in a recent publication in the esteemed academic journal *Nature Communications*.

Breaking from traditional thinking

Multi-point detection, which involves the simultaneous use of

multiple satellites, is a well-established method of exploring the space around Earth with satellites. Rong Zhaojin has published extensively on the topic. However, he chose to venture into the realm of single-point detection, driven by a desire to extract more information from data collected by a single satellite, a challenge he found both intriguing and invigorating.

While devoting several months to crafting an innovative analysis

method, Rong focused on deciphering the geometric structure of spatial magnetic fields. This approach allowed his fellow researchers to determine the structural orientation of magnetic field twists in the space environment using data obtained from a lone satellite. Their findings, published in the *Journal of Geophysical Research*, marked a significant advancement in the field.

Building on this momentum, Rong and his team

achieved prominence in terrestrial planet space research. They pioneered China's inaugural global Martian rock remnant magnetization model by meticulously comparing and contrasting existing models to develop a comprehensive framework.

In recent years, Rong Zhaojin has embarked on a quest to devise novel methods for probing planetary magnetic fields. His vision encompasses utilizing a planet's external magnetic field to infer its internal structure—a concept akin to doctors detecting tumors through CT scans. This ambitious endeavor represents a new frontier in planetary

exploration, one that Rong approaches with both curiosity and determination.

Working to advance planetary science

In November 2021, the University of Chinese Academy of Sciences (UCAS) approved the establishment of a doctoral degree program in Planetary Science. To support the development of this discipline, Rong Zhaojin started translating a 500-plus-page English textbook titled *Introduction to Space Physics* into Chinese in the latter half of 2022.

In addition to translation work, Rong is involved in various social roles


including serving on academic society boards and editing journals. Despite concerns about these activities taking away from research time, Rong believes that it is important for scientists to give back to society once they've achieved a certain level in their research careers. Considering ongoing technological advancements, Rong Zhaojin believes that the future of planetary science depends on adaptation. "Those who rely solely on basic data analysis without embracing innovation risk falling behind in these rapidly changing times," he said.

(Source: *Science and Technology Daily*)

Upcoming Conferences

 **2024 World Congress on Internal Combustion Engines**

 **Dates:** April 19-23, 2024

 **Location:** Tianjin, China



Host: The Chinese Society for Internal Combustion Engines (CSICE)



The conference, themed “Green, Efficient, Intelligent and Reliable,” aims to explore technology trends and challenges, facilitate integration and innovation of internal combustion power with other power technologies, and promote the coordinated development of the entire internal combustion engine industry chain.



For more information, check out: <http://wice.en.csice.org.cn>



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Editor: Ying Wenqi

Proofreader: Wei Yumeng

Designer: Zhang Shan

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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newsletter@cast.org.cn