

'AI+' Initiative to Reshape Economy and Society

Policy Express

By LIN Yuchen

The State Council of China released a policy document on deeply implementing the "AI+" Initiative, for embedding AI across all sectors of the economy and society on August 26. The policy envisions AI as a transformative force to revolutionize productivity, reshape social relations, and establish a new paradigm of human-machine collaboration, cross-boundary integration, and shared creation.

The overall target is to accelerate the rise of an intelligent economy and intelligent society. By 2027, AI applications in six priority areas will have more than 70 percent adoption, with new intelligent terminals and agents becoming widely popularized.

By 2030, this penetration rate is projected to surpass 90 percent, making AI a central growth engine of the Chinese economy.

By 2035, China aims to enter a new stage of fully developed intelligent economy and society, providing strong support for the country's modernization.



AI-driven robots are used in manufacturing. (PHOTO: XINHUA)

The document outlines concrete actions in six major domains: science and technology, industry, consumption, public welfare, governance and global cooperation.

In science, AI will drive new research paradigms, accelerate breakthroughs from "0 to 1," and advance scientific data sharing and cross-disciplinary innovation. Industry will see intelli-

gent-native enterprises emerge, traditional sectors upgraded, and agriculture transformed through smart equipment and digital tools. Service industries are expected to evolve from digital to intelligent modes, creating entirely new business models.

On the social front, AI is expected to create smarter jobs, personalized education, accessible healthcare, and richer

cultural production, while also enhancing companionship, elder care, and social inclusion. Governance will be modernized through intelligent infrastructure, smart urban planning, and enhanced public security capabilities, while environmental management will benefit from AI-driven monitoring and prediction.

Internationally, China pledges to treat AI as a global public good, narrowing the "intelligence gap" through inclusive cooperation, promoting open-source ecosystems, and supporting the United Nations in building a fair and secure global AI governance system.

To ensure implementation, the policy emphasizes strengthening fundamental capabilities in models, data and computing power, expanding application platforms, cultivating talent, improving regulatory frameworks, and reinforcing AI safety.

By mobilizing government, industry, academia and global partnerships, China seeks to accelerate the formation of new quality productive forces and ensure that the benefits of AI are shared widely.



Global Journal Observatory

EES: Addressing Challenges in Energy, Environmental Science

By Jenny Nelson

The Royal Society of Chemistry published its first issue of *Energy & Environmental Science (EES)* in 2008 with the ambition to become home for exceptional, insightful research into sustainable energy conversion and storage and associated global environmental impacts.

Since its launch, *EES* has gone from strength to strength with high growth in submissions and citations while also providing a highly visible forum for research globally. The journal's metrics have, for a long time, placed it among the top of Q1 (Energy & Fuels) and Q1 (Environmental Sciences) for Best Impact Factor Quartile (Journal Citation Reports™, Clarivate).

Interdisciplinary convergence breaks research boundaries

EES's scope is intentionally broad, covering all aspects of energy conversion and storage, alternative fuel technologies and the science of environmental impacts that are related to energy technologies, such as global atmospheric science, climate change and carbon capture. A further aim was to bridge traditional subject boundaries and encourage different communities to work together on important problems.

EES has been supported by world-class scientists serving on its international editorial and advisory boards. The journal's founding editorial board chair was Professor Nathan Lewis from the California Institute of Technology, who was succeeded in 2018 by Professor Joe Hupp from the Northwestern University.

I was appointed to the role at the start of 2023. I am proud to lead the *EES* editorial board. Both the editorial and advisory boards work hard to ensure the published papers are of exceptionally high quality and of interest to our broad readership.

Chinese research dominates highly cited list

EES has benefited consistently by association with members of the Chinese research community. I am glad to share that *EES* has published highly cited work over the years from Chinese scientists.

Among cutting-edge advances, breakthroughs in energy storage technologies stand out as particularly exemplary. This is demonstrated by our most cited research paper of 2024 so far, which is "Unlocking the local structure of hard carbon to grasp sodium-ion diffusion behaviour for advanced sodium-ion batteries" by Li Yu, Wu Chuan and Bai Ying et al. from Beijing Institute of Technology.

The "story" here is around the essential development of sodium-ion batteries (SIB) due to their far superior sustainability credentials as opposed to more common lithium-ion batteries. The challenge is that the performance of these batteries degrades quickly over time. This study



Jenny Nelson. (COURTESY PHOTO)

addresses these phenomena, thus forging a path for SIBs to gain widespread commercial use in the near future.

Technical pathways under global carbon goals

I think this decade will be critical for both climate change and sustainable development and our collective future rests on finding ways to make these changes in time.

Although we have come far (in my field of solar photovoltaics we have seen global capacity rise from 13 GWp to over 1 TWp in the time since 2008), we face an unprecedented transition that needs to be faster and more disruptive than anything we have seen to date. It is my ambition that *EES* will not only continue to serve the community of energy researchers through dissemination of results but promote the most important questions, stimulate new discoveries and strategies, and attract more talent and attention to the field of energy research.

As we progress, challenges associated with implementation will develop, and other topics become more prominent. These may include the use of data science and high throughput experimentation in the search for optimum materials and strategies; integration of different technologies to meet need rather than maximize individual figures of merit; and a greater focus on energy and resource efficiency to minimize scarcity and waste.

Above all, there is a continuing need for new discoveries, ideas and methods that are simply inspired by the challenges of energy and climate change mitigation. The beauty of *EES* is that its scope allows for all these types of challenge, method and discipline to be included and combined.

I wish our readers and authors the very best success in these critical endeavors and hope that you will submit some of your best work for publication in our journal.

The author is the editorial board chair of Energy & Environmental Science and professor at the Imperial College London.

Journal Review

As a long-term researcher in energy materials, I have always viewed *EES* as a premier scholarly communication platform bridging fundamental scientific breakthroughs with the global goal of sustainable development.

In this era where "low-carbon energy transition" and "sustainable development" have become shared imperatives, *EES* has established its leading position in clean energy and environmental sciences through its forward-looking thematic focus, interdisciplinary perspectives, and profound insights into the complex "energy-environment" systems.

EES not only reports frontier advancements in solar energy, hydrogen technologies, fuel cells, and CO₂ emis-

sion reduction, but encourages cross-disciplinary innovation and paradigm shifts in energy-environment research.

Furthermore, *EES* emphasizes how these technological breakthroughs contribute to the greater themes such as "energy equity", "climate resilience" and "ecological security."

As energy-environment sciences undergo deepening innovation, I look forward to working with researchers around the globe to maintain *EES's* leadership at the cutting edge of future's sustainable energy research.

— Bao Xinhe, academician of the Chinese Academy of Sciences (CAS), and a professor at the Dalian Institute of Chemical Physics, CAS.

Zhu Kezhen's Long March for Science

80 Years On Salute to Scientists

By SUN Jin & JIANG Yun

Zhu Kezhen is a founder of China's modern meteorology. When Zhu was doing his Ph.D. at Harvard University in meteorology in 1918, China had only two weather stations and both were foreign-controlled.

After returning to China, Zhu dedicated himself to advancing the nation's meteorological capabilities and in 1928,

he established China's first national meteorological center in Nanjing.

Appointed president of Zhejiang University in 1936, Zhu confronted crippling faculty shortages and dilapidated facilities. His solution was to recruit top-notch scholars and excellent students.

During the Chinese People's War of Resistance against Japanese Aggression, it was decided to relocate Zhejiang University to protect it from Japanese attacks. Hundreds of faculty and students carried books and experimental equipment across provinces to almost 2,600

kilometers to Guizhou province in southwest China.

With an uncertain future ahead and enemy forces behind, Zhu did everything to protect the students. He prioritized restarting lectures and insisted on the library and laboratories operating alongside the university.

Remarkably, wartime Zhejiang University published breakthrough research in *Nature* magazine.

In the autumn of 1946, the university returned to Hangzhou. It had expanded from three colleges and 16 departments to seven colleges and 26

departments. The number of professors and associate professors increased from 70 to 201, while from around 600 students, there were more than 2,000. Among these students, twenty-six later became academicians of the Chinese Academy of Sciences (CAS) and the Chinese Academy of Engineering.

After the founding of the People's Republic of China in 1949, Zhu became vice president of CAS. He devoted himself to national development, establishing multiple pioneering institutions, including China's first multidisciplinary natural resource research organization.

Cultural and Technological Integration in Shanxi

Tech+Culture

By Staff Reporters

Shanxi province in north China is emerging as a beacon of innovation, with its rich cultural heritage seamlessly integrating with cutting-edge technologies.

The province has rolled out a series of initiatives to integrate AI, digital technologies, and microbial technologies to preserve, inherit and revitalize its cultural heritage. It is utilizing technological advancements to enhance both its cultural preservation efforts and the tourism industry.

One of the most remarkable achievements is the creation of a digital

portal for Shanxi's cultural tourism. The portal consolidates a vast array of data to monitor the operational status of 390 A-grade tourist sites, ensuring efficient management, real-time updates, and even unified scheduling during peak seasons.

As a result, it has become an indispensable tool for both tourism businesses and consumers, offering a centralized platform for information and services. It has laid the foundation for a comprehensive, digitalized governance system in the tourism sector.

The micro-drama industry has also seen explosive growth, particularly in Linfen, a city in south Shanxi. A new 20,000-square-meter micro-drama production base has been established, emphasizing innovation in content and production techniques.

This platform explores the integration of micro-drama with other sectors like cultural tourism and intangible heritage. This collaborative approach has led to a flourishing cultural industry that boosts local economies and strengthens Shanxi's cultural brand.

Moreover, Shanxi is leveraging advanced technologies to preserve its precious cultural artifacts. The Iron Buddha Temple project, which uses 3D printing to recreate ancient sculptures, exemplifies this innovative blend of tradition and technology.

The project has successfully digitized endangered sculptures, ensuring their preservation and enabling global access. In a similar vein, a cultural model evolving around Guan Gong, also known as Guan Yu, a revered figure in Chinese culture, integrates AI and VR

technologies to create an interactive digital experience. This initiative not only enhances public engagement with cultural history but also fosters deeper connections between youth and traditional culture.

The province is employing microbiological techniques to restore weathered relics in the Yungang Grottoes, a UNESCO World Heritage Site with over 250 caves and 51,000 statues. By using bio-mineralization technology, researchers have "healed" the sandstone sculptures that suffered from centuries of erosion.

Shanxi's pioneering approach demonstrates how the fusion of cultural heritage with technology opens new paths for preservation, innovation and economic development, providing a model for other regions to follow.



Children play with toys based on Sunmao, a traditional Chinese method of connecting wood, at the 7th Shanxi Cultural Industries Fair in Taiyuan, north China's Shanxi province. (PHOTO: XINHUA)



A child uses a VR device to view the Jinci Temple at the 7th Shanxi Cultural Industries Fair in Taiyuan, north China's Shanxi province, August 21, 2025. (PHOTO: XINHUA)