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RESEARCH ARTICLE

Development Strategy of Emerging Journals under the "Action Plan for the Excellence of Chinese STM Journals": The Case Study of China Academy of Sciences

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Abstract

Since the implementation of the "Action Plan for the Excellence of Chinese STM Journals" in 2019, dozens of new journals categorized as "high starting point journals" have been selected each year. These journals have become key channels for promoting Chinese scientific research achievements internationally and are expected to enhance China's influence in science and technology while broadening academic outreach. This development strategy warrants analysis, as it may provide valuable insights for other countries pursuing similar goals. This study examines the characteristics of 28 new journals in the "high starting point journals" category, supported by the Chinese Academy of Sciences, from 2019 to 2022. The analysis covers several aspects, including sponsors, disciplinary distribution, editorial and publishing teams, publishing models, article distribution, international author participation, article types, and database indexing. The findings reveal that the Chinese Academy of Sciences has strategically aligned with China's national policies, creating a series of high-quality English-language journals focused on frontier disciplines. Despite active governmental support and the establishment of publishing platforms such as SciEngine and Researching, which mark a shift from the passive approach of "renting a boat to go global" to the more proactive "building a boat to go global," the process still faces some challenges.

1 | Introduction

In recent years, China has placed significant emphasis on the development of academic journal publishing, issuing a series of policy documents to promote the high-quality growth of academic journals, many of which focus on the establishment of new journals [1-2]. In 2019, the "Opinions on Deepening Reform to Cultivate World-Class STM Journals" (the "Opinions"), jointly issued by the China Association for Science and Technology, the Publicity Department of the Communist Party of China, the Ministry of Education, and the Ministry of Science and Technology, emphasized the need for proactively establishing journals in emerging, interdisciplinary, and strategically important fields, alongside strengthening guidance on the creation of new journals. To implement these recommendations, China's seven ministries and commissions issued the "Action Plan for the Excellence of Chinese STM Journals (2019-2023)" (the "Excellence Action Plan") in September 2019 [3].

The main objective of the Excellence Action Plan is to enhance the global competitiveness of Chinese STM journals and extend the global reach and influence of Chinese scientific research. The Plan includes four key sub-projects for journal funding: leading journals, key journals, echelon journals, and high-starting-point new journals. These projects are implemented over several years, with the first three categories being selected annually. From 2019 to 2021, the High-Starting-Point New Journal Project selected 30 journals each year, with 50 journals selected in 2022. Over four years, 140 journals

were selected, focusing on establishing high-quality English-language scientific and technical journals in areas of traditional strengths, emerging interdisciplinary fields, strategic frontiers, and key technologies.

While most existing studies on the "Excellence Action Plan" have focused on leading, key, and echelon journals [4], there is relatively less research on high-starting-point journals, which are primarily English-language journals. These journals play a critical role in facilitating the global dissemination of China's scientific research. They contribute significantly to enhancing China's scientific and technological influence, expanding its academic presence, and positioning the country within the global scientific community [5-6]. Domestically, there is a notable gap in the number of high-quality English-language publications, and Chinese journals face challenges in increasing the volume of English articles. The high-starting-point new journals are designed to bridge this gap, addressing the imbalance between research output and journal publication.

Given the importance of these journals, it is crucial to analyze the development of those selected under the "high-starting-point journals" category. Existing research on high-starting-point journals tends to focus on case studies, examining the experiences and challenges encountered during the establishment and development of individual journals [7]. Other studies adopt a broader approach, analyzing the overall trends and characteristics of new high-starting-point journals selected in a specific year or over multiple years [8]. However, limited attention has been given to the new journals funded by the Chinese Academy of Sciences (CAS) under the "Excellence Action Plan." As one of China's most prestigious and influential research institutions, CAS provides a strong foundation for establishing high-quality journals.

This study focuses on the new journals funded by CAS under the "Excellence Action Plan" from 2019 to 2022. The aim is to identify common characteristics and challenges in the establishment of these journals and to provide recommendations for the future development of new journals in China.

2 | Methodology

Given the extensive network of research institutes under the Chinese Academy of Sciences (CAS), which are distributed across the country, CAS functions primarily as an administrator, while the individual institutes act as sponsors for the journals. As a result, data collection and processing required significant effort. This study employs literature analysis, comparative analysis, and case study methods to examine the new journals funded under the "Excellence Action Plan."

The research process involved gathering data on journals selected between 2019 and 2022 through official and academic platforms, including the China Association for Science and Technology website, individual journal websites, WeChat official accounts, China National Knowledge Infrastructure (CNKI), Baidu Academic, the WeChat mini-program of the Chinese Academy of Sciences Literature and Information Center, and major indexing databases such as Web of Science, Scopus, and DOAJ.

Collected data included information on journal organizers, discipline distribution, publishing institutions, editorial teams, publishing models, online presence, article and contribution distribution, internationalization of authors and contributions, and thematic focus. Data analysis was conducted using information available up to December 31, 2022, as the data for 2023 was incomplete at the time of this study. From the 28 journals supervised by CAS during 2019–2022, this study focuses on 25 journals for detailed analysis. Three journals were excluded due to data availability issues and unique publishing formats. Data analysis was conducted using information available up to December 31, 2022, as the 2023 data was incomplete at the time of the study.

3 | Results

3.1 | Overview

Between 2019 and 2022, 140 high-starting-point journals were funded under the "Excellence Action Plan." Among them, 28 journals were supervised by the Chinese Academy of Sciences (CAS), accounting for 20% of the total. This demonstrates CAS's significant role in establishing high-quality English-language journals, emphasizing its commitment to shaping the scientific publishing landscape in China. Table 1 presents the distribution of these journals across supervising institutions. Although the number of journals supervised by CAS has declined over the years, the institution remains a key player in China's scientific publishing ecosystem. This trend may reflect a strategic shift towards prioritizing journal quality over quantity.

TABLE 1 | Number of new journals selected as high starting point journals for each supervising institution from 2019 to 2022.

Supervising institution	2019	2020	2021	2022	Total
Chinese Academy of Sciences	11	7	5	5	28
Ministry of Education	7	11	12	22	52
China Association for Science and Technology	4	7	6	10	27
Ministry of Industry and Information Technology	2	3	2	3	10
Others	6	2	5	10	23
Total	30	30	30	50	140

The detailed list of the 28 journals supervised by CAS is presented in Table 2. Among them, *Medicine Plus* and *Cell Evolution* were excluded from further analysis due to the absence of relevant

information on their official websites, suggesting these journals have not been published. Additionally, *Digital Journal of Global Change Data Repository* was excluded due to its unique publishing format, which differs significantly from other journals. As a result, this study focuses on 25 high-starting-point journals for detailed investigation and analysis.

TABLE 2 | List of journals supervised by the chinese academy of sciences.

No.	Selected year	English publication name	ISSN
1	2019	eLight	2662-8643
2	2019	Ultrafast Science	2765-8791
3	2019	Magnetic Resonance Letters	2772-5162
4	2019	Journal of Remote Sensing	2694-1589
5	2019	Synthetic and Systems Biotechnology	2405-805X
6	2019	Green Chemical Engineering	2666-9528
7	2019	Artificial Intelligence in Agriculture	2589-7217
8	2019	Regional Sustainability	2666-660X
9	2019	Digital Journal of Global Change Data Repository	2096-868X
10	2019	Bioactive Materials	2452-199X
11	2019	Biomedical Engineering Frontiers	2765-8031
12	2020	Opto-Electronic Science	2097-4000
13	2020	Communications in Mathematics and Statistics	2194-6701
14	2020	National Science Open	2097-1400
15	2020	Journal of Biosafety and Biosecurity	2588-9338
16	2020	Ecological Processes	2192-1709
17	2020	Emerging Contaminants	2405-6642
18	2020	Infectious Disease Modelling	2468-0427
19	2021	Carbon Resources Conversion	2588-9133
20	2021	mLife	2770-100X
21	2021	Security and Safety	2826-1275
22	2021	Medicine Plus	2950-3477
23	2021	Plant Communications	2590-3462
24	2022	Cell Evolution	N/A
25	2022	Environment & Health	2833-8278
26	2022	hLife	2949-9283
27	2022	Water Biology and Security	2772-7351
28	2022	Zoological Research: Diversity and Conservation	2097-3772

3.2 | Journal Sponsor

Table 3 presents the distribution of journal sponsors among the high-starting-point projects. The data reveals that China Science and Technology Publishing Media Co., Ltd. (CSPM) accounted for the largest number of approved projects from 2019 to 2022, with a total

of nine journals. In comparison, 14 other institutes, research institutes, and research centers under the Chinese Academy of Sciences (CAS) were approved for high-starting-point journal projects during the same period, though the number of projects per institute was relatively small. Except for the Institute of Microbiology, which was approved for two journals, all other institutes were approved for only one journal each from 2019 to 2022.

CSPM, established in 2010, is a professional scientific and technological journal publishing company affiliated with CAS. It publishes a wide range of high-quality scientific and technical journals across disciplines such as physics, chemistry, biology, materials science, engineering, information technology, environmental science, and even the humanities and social sciences. These journals not only have significant circulation within China but also enjoy substantial international influence. Unlike other journal sponsors, CSPM directly owns these nine new journals and manages their editorial teams. This ownership and management model set CSPM apart from other sponsors, where journal editorial teams are often affiliated with their respective institutes. This distinction highlights CSPM's pivotal role in spearheading journal publishing efforts within CAS and ensuring professional management and international competitiveness.

TABLE 3 | Distribution of sponsors.

Sponsor	Number of Journals
Institute of Microbiology, Chinese Academy of Sciences	2
Institute of Optics and Electronics, Chinese Academy of Sciences	1
Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences	1
Kunming Institute of Zoology, Chinese Academy of Sciences	1
Wuhan Institute of Physics and Mathematics of Chinese Academy of Sciences	1
Institute of Hydrobiology, Chinese Academy of Sciences	1
Institute of Applied Ecology, Chinese Academy of Sciences	1
Suzhou Institute of Biomedical Engineering Technology, China Academy of Sciences	1
Xi'an Institute of Optics and Precision Mechanics of Chinese Academy of Sciences	1
Institute of Process Engineering, Chinese Academy of Sciences	1
Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences	1
Aerospace Information Research Institute, Chinese Academy of Sciences	1
Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences	1
CAS Center for Excellence in Molecular Plant Sciences	1
University of Science and Technology of China	1
China Science Publishing & Media Ltd. (CSPM)	9

3.2 | Discipline Distribution

The subject structure of journals, as categorized in the 2022 Journal Partition Table developed by the Literature and Information Center of the Chinese Academy of Sciences (CAS), is based on citation relationships between journals. This classification also aligns with the subject definitions outlined in the *Catalogue of Academic Degrees Granting and Personnel Training* (2011) issued by the State Council Academic Degrees Committee and the Ministry of Education. The table organizes journals into 18 categories: mathematics, physics and astrophysics, chemistry, materials science, earth science, environmental science and ecology, agriculture and forestry science, biology, medicine, psychology, computer science, engineering technology, management, economics, law, education, humanities, and comprehensive journals.

For this study, the primary disciplines of the selected journals were identified with reference to the Journal Partition Table. Journals not indexed in the Web of Science were manually classified and adjusted

based on their content and coverage. Additionally, the priority construction fields for the 25 high-starting-point journals were compiled by the authors using the *Guidelines for the Application of Outstanding Action Plan Projects of China Sci-tech Journals* for the respective years. The detailed classification and priority fields are presented in Table 4.

TABLE 4 | 25 discipline categories of selected journals and their corresponding priority construction fields.

Major disciplines	N1	P2	Journal name	Priority3
Biology	7	28	hLife	Microbiology and bioengineering, immunology
			Zoological Research: Diversity and Conservation	Biology
			Synthetic and Systems Biotechnology	Bioengineering and applied microbiology
			mLife	Microbiology and bioengineering
			Plant Communications	Biochemistry and molecular biology
			Water Biology and Security	Biology
Environmental Science and Ecology	5	20	Journal of Biosafety and Biosecurity	Public health and preventive medicine, infectious diseases and infectious diseases
			Regional Sustainability	Environmental engineering and green sustainable development technology
			Emerging Contaminants	Ecology and environmental engineering
			Ecological Processes	Ecology and environmental engineering
			Carbon Resources Conversion	Ecology and environmental engineering
			Environment & Health	Environmental engineering and green sustainable development technology
Engineering	3	12	Opto-Electronic Science	Mathematical physics
			Bioactive Materials	Biomedical engineering, biomaterials
			Green Chemical Engineering	Science and technology, bioengineering and applied microbiology for environmental protection and sustainable development
Medical Science	3	12	Infectious Disease Modelling	Infectious diseases and infectious diseases
			Biomedical Engineering Frontiers	Biomedical Engineering
			Magnetic Resonance Letters	Radiology, nuclear medicine, medical imaging
Comprehensive Periodical	3	12	Security and Safety	Comprehensive periodical
			National Science Open	Comprehensive periodical
			Ultrafast Science	Comprehensive periodical
Computer Science	1	4	Artificial Intelligence in Agriculture	Artificial intelligence, agricultural engineering
Physics and Astrophysics	1	4	eLight	Atomic and molecular physics
Mathematics	1	4	Communications in Mathematics and Statistics	Mathematical physics
Earth Sciences	1	4	Journal of Remote Sensing	Remote sense

Note. N = Number of Journals; P = Percentage; Priority = Priority construction field of new periodicals with high starting point.

As shown in Table 4, the 25 selected high-starting-point journals are distributed across 10 major disciplines. Among them, biology has the largest number of journals, followed by environmental science and ecology. These two disciplines are currently global focal points and are highly prioritized by nations worldwide. Engineering technology ranks third, representing a traditional area of strength in China. This field not only encompasses critical common technical domains but also serves as a foundation for the development of emerging interdisciplinary fields when combined with other disciplines.

The COVID-19 pandemic has further emphasized human health as a key frontier of global interest in recent years. China's contributions to and achievements within the global medical community during the pandemic have demonstrated significant advancements in the country's medical research capabilities [9]. However, a considerable gap remains when compared to the United States. The inclusion of medical journals in the high-starting-point program reflects China's strategic focus on addressing this gap, seizing opportunities in strategic frontier fields, and strengthening areas where shortcomings exist. Additionally, the selection of physics and mathematics journals highlights the emphasis placed on basic science frontier fields in the evaluation criteria for new high-starting-point journals. These disciplines remain critical to advancing foundational knowledge and fostering innovation.

The application guidelines for high-starting-point journals emphasize the importance of "filling in gaps and addressing deficiencies." Notably, three of the selected journals represent pioneering efforts in their respective fields within China, as outlined in Table 5.

TABLE 5 | The Pioneering nature of selected journals in subject layout.

No.	Journal name	Pioneering in discipline layout
3	Magnetic Resonance Letters	The First English Journal of Magnetic Resonance Spectroscopy in China
4	Journal of Remote Sensing	China's first English periodical in the field of remote sensing
20	mLife	The first comprehensive English periodical in the field of microbiology in China

In recent years, alongside the continuous enhancement of scientific research capabilities and the rapid development of sci-tech periodicals in China, some "small but refined" high-impact journals in specific subject areas have moved beyond the limitations of single-journal development. These journals are increasingly establishing "sub-journals" and "sister journals" to expand their influence and scope. The project application guide for new high-starting-point journals also highlights this trend, stating that "priority support will be given to journals selected under the leading journal sub-project that establish sister or sub-journals, as well as new journals set up by institutions participating in the cluster pilot project."

Table 6 provides an overview of the sister journal relationships among the 25 selected high-starting-point journals. As shown, four of these journals are sister journals of internationally renowned journals. Notably, eLight and Plant Communications are sister journals of leading journals supported by the Excellence Action Plan. This demonstrates how the initiative is fostering journal clusters to amplify the impact of China’s scientific publishing.

TABLE 6 | The situation of sister journals selected in periodicals.

No.	Journal name	The situation of sister journals
1	eLight	Leading journal of Excellence Program Light-Science & Applications, the TOP journal in the first district of Chinese Academy of Sciences
12	Opto-Electronic Science	Opto-Electronic Advances, the first district journal of Chinese Academy of Sciences
23	Plant Communications	Leading journal of Excellence Program Molecular Plant, the TOP journal of the first district of Chinese Academy of Sciences
28	Zoological Research: Diversity and Conservation	Zoological Research, the first district journal of Chinese Academy of Sciences

3.3 | Publishing Institutions

While content remains the cornerstone of a journal's success, in the current era of information technology, the importance of communication and dissemination capabilities has become increasingly prominent. Recognizing this, China’s S&T journals have acknowledged the necessity of enhancing their global communication reach. However, they are often constrained by the lack of a global publishing and communication platform. To address the challenge of small and fragmented publishing units, many

organizers have opted to establish new English-language journals in collaboration with large international publishing institutions [10]. As shown in Table 7, 23 of the 25 selected journals (92%) have partnered with international publishing institutions, underscoring the pivotal role such partnerships play in the development of high-starting-point journals. Among these, 68% of the journals collaborate with industry leaders like Elsevier, Springer Nature, and Wiley, while three journals are partnered with the American Association for the Advancement of Science (AAAS). From the perspective of the international publishing industry, the involvement of large commercial publishing companies has significantly accelerated the development of S&T journals [11]. The brand advantages, global reputation, and mature operational models of these publishers provide a substantial boost to the growth and international competitiveness of new English-language journals in China.

TABLE 7 | Statistics of international publishers' cooperation and operating platform.

Project	Content	N1	P2	Journal No.
Cooperation with international publishers	Elsevier	13	52	3, 5, 6, 7, 8, 10, 15, 17, 18, 19, 23, 26, 27
	Springer-Nature	3	12	1, 13, 16
	AAAS	3	12	2, 4, 11
	EDP Sciences	2	8	14, 21
	Wiley	1	4	20
	ACS Publications	1	4	25
	Not cooperating with international publishing agencies	2	8	12, 28
Operating platform	International cooperative publisher platform	21	84	1, 2, 4, 5, 6, 7, 8, 10, 11, 13, 14, 15, 16, 17, 18, 19, 21, 23, 25, 26, 27
	Domestic organizers build their own platforms.	2	8	12, 28
	Double platform	2	8	2, 20

Note. N = Number of Journals"; P = Percentage; Among the 25 selected journals, 11 journals cooperated with Keai, which was counted as cooperation with Elsevier.

Additionally, domestic publishers have made significant strides in collaborating with international counterparts. A notable example is Beijing KeAi Senlan Culture Communication Co., Ltd. (KeAi Communications Co., Ltd., hereinafter referred to as KeAi), a joint venture established by China Science and Technology Publishing Media Co., Ltd. (Science Press) and Elsevier. By the end of 2022, KeAi had edited and published more than 130 English-language journals, 34 of which were included in the "Excellence Action Plan." Notably, 11 of the 25 selected journals supervised by the Chinese Academy of Sciences are published in cooperation with KeAi, highlighting its critical role in bridging domestic and international publishing efforts.

For collaboration, international mergers and acquisitions have become a common strategy for leading publishing companies to enhance their global competitiveness [12]. Springer Nature serves as a prominent example of this trend. Similarly, in June 2019, Science Press acquired Éditions Diffusion Presse Sciences (EDP Sciences), gaining access to approximately 75 high-quality S&T journals. This acquisition significantly enhanced the international influence of Science Press and marked a major milestone in the internationalization of Chinese S&T periodicals. Among the 25 selected journals, two are published in collaboration with EDP Sciences, further demonstrating the impact of strategic international acquisitions on China's sci-tech publishing landscape.

The publishing platforms for academic journals primarily focus on "content resources," offering publishing and exhibition functions for journals, as well as retrieval and dissemination capabilities for end users [13]. Large international publishing institutions have made significant investments in their journal publishing platforms, integrating a wide range of functionalities. These include content display, digital editing and production, self-service search and retrieval, personalized customization, and social media interactive services. Examples of such platforms include ScienceDirect, SpringerLink, and Wiley Online Library [14–15]. As shown in Table 7, 84% of the 25 selected journals utilize the operating platforms of their international publishing partners, demonstrating that "borrowing ships to go to sea"—especially via major international platforms—remains the dominant strategy for the rapid development of new journals. However, there is growing advocacy for "building ships to go to sea," emphasizing the development of a national science and technology publishing platform and its supporting systems.

In the last few years, China has increasingly prioritized the cultivation of world-class sci-tech periodicals, and the calls for "building ships to go to sea" have grown louder. In 2021, the China Science and Technology Journals Excellence Action Plan selected five cluster pilot projects for key funding. These projects aim to promote clustered publishing, develop international production, operation, and dissemination platforms, and accelerate the establishment of an independent industrial chain for China's sci-tech journals. Several clustered publishing platforms have emerged as representatives of these efforts, such as the SciEngine Platform by China Science and Technology Publishing Media Co., Ltd., and the SciOpen Platform by Tsinghua University Press. These platforms have played a critical role in modernizing China's publishing system and promoting the development of a modern publishing ecosystem.

3.4 | Journal Team and Editorial Team

The publishing and editorial teams of the 25 selected journals are summarized in Table 8. Among these, *National Science Open* has the largest publishing team, comprising 200 members. As a comprehensive journal, its editorial team is structured into seven disciplinary groups, with each group consisting of an executive editor, a deputy editor, and members of the editorial board. In contrast, Artificial Intelligence in Agriculture has the smallest publishing team, consisting of only 18 members. To invigorate journal operations and bring fresh perspectives to the publishing ecosystem, Chinese sci-tech journals have increasingly sought to engage young scholars by establishing youth editorial boards or youth working committees [16–17]. This approach aims to enhance the vitality of editorial workflows and expand the academic influence of the journals. As shown in Table 8, six of the 25 selected journals have successfully introduced youth editorial boards, highlighting a clear effort to integrate early-career scholars into the editorial process.

An analysis of the editorial team structures, excluding youth editorial boards and administrative staff, identifies three predominant formats. The most common structure, adopted by 48% of the journals, comprises "chief editor + executive editor/deputy editor + editorial board (+ consultant/honorary editor/founding editor)." Examples include Synthetic and Systems Biotechnology, Green Chemical Engineering, and Artificial Intelligence in Agriculture. Another 28% of the journals utilize a structure of "chief editor + executive editor + deputy editor + editorial board (+ consultant/honorary editor/senior editor)," as seen in journals such as Magnetic Resonance Letters, mLife, and Zoological Research: Diversity and Conservation. Meanwhile, 16% adopt a more specialized framework of "chief editor + executive editor + subject editor/column editor/domain editor + editorial board + consultant," as employed by *Communications in Mathematics and Statistics*, *Ecological Processes*, *Infectious Disease Modelling*, and *hLife*.

A few journals deviate from these common formats. For instance, *eLight* employs a simplified structure of "chief editor + editorial board," which distinguishes it from other journals. *Ultrafast Science*, on the other hand, features a unique structure consisting of "chief editor + executive editor + deputy editor + consultant + honorary editor," without a formal editorial board. Interestingly, 65.9% of its editorial team consists of deputy editors, suggesting that they may assume responsibilities typically handled by an editorial board.

The staffing of editorial departments also provides valuable insights. A notable 40% of the journals have appointed a "Managing Editor" responsible for operational and administrative tasks. Examples include *Journal of Remote Sensing* and *Water Biology and Security*. Additionally, *Plant* Communications has introduced a "Scientific Editor" position, specifically tasked with ensuring the academic rigor and integrity of the journal's content. These specialized roles reflect the growing professionalization of editorial management and highlight efforts to align with international publishing standards.

TABLE 8 | Composition of publishing team.

No.	N1	Structure and number of people running the journal team
14	200	Chief Editor 1 +Physics Class 15: Executive Editor 1+ Deputy Editor 6+ Editorial Committee 8 +Chemistry Class 25: Executive Editor 1+ Deputy Editor 5+ Editorial Committee 19 +Life Science and Medicine Class 27: Executive Editor 1+ Deputy Editor 6+ Editorial Board 20 +Earth and Environmental Science Class 32: Executive Editor 1+ Deputy Editor 5+ Editorial Board 26 +Material Science Class 43: Executive Editor 1+ Deputy Editor 7+ Editorial Board 35 +Engineering 32: Executive Editor 1+ Deputy Editor 6+ Editorial Board 25 +Information Science 25: Executive Editor 1+ Deputy Editor 5+ Editorial Committee 19
10	131	Editor-in-Chief 2+ Deputy Editor-in-Chief 19+ Editorial Board 90+ Youth Editorial Board 20
2	113	Consultant 9+ Honorary Editor 1+ Chief Editor 2+ Executive Editor 3+ Deputy Editor 29+ Youth Editorial Board 66+ Editorial Director 2+ Management Editor 1
23	97	Editor-in-Chief 1+ Executive Editor 1+ Consultant 11+ Editorial Board 80+ Scientific Editor 3+ Assistant Editor 1
28	90	Honorary Editor 2+ Chief Editor 1+ Executive Editor 2+ Deputy Editor 3+ Editorial Board 79+ Management Editor 3
6	89	Editor-in-Chief 1+ Honorary Editor-in-Chief 1+ Deputy Editor-in-Chief 4+ Consultant 4+ Editorial Board 40 (divided into 7 directions according to disciplines) +Youth Editorial Board 36+ Management Editor 3.

(To be continued)

(Continued)

No.	N1	Structure and number of people running the journal team
20	86	Chief Editor 2+ Executive Editor 1+ Senior Editor 13+ Deputy Editor 22+ Editorial Board 48
27	86	Editor-in-Chief 2+ Deputy Editor-in-Chief 1+ Editorial Committee 81+ Editorial Director 1+ Management Editor 1
11	83	Honorary Editor-in-Chief 1+ Editor-in-Chief 3+ Consultant 16+ Deputy Editor-in-Chief 17+ Editorial Committee 26+ Young Editorial Committee 16+ Editorial Director 1+ Deputy Editorial Director 1+ Management Editor 1+ Part-time Management Editor 1.
3	74	Consultant 5+ Editor-in-Chief 1+ Executive Editor-in-Chief 5+ Deputy Editor-in-Chief 29+ Editorial Board 34
25	73	Editor-in-Chief 1+ Executive Editor 1+ Deputy Editor 4+ Editorial Board 48+ Youth Editorial Board 17+ Management Editor 2
16	70	Editor-in-Chief 2+ Executive Editor-in-Chief 1+ Consultant 7+ Subject Editor-in-Chief 5+ Editorial Committee 55
8	66	Editor-in-Chief 2+ Executive Editor 1+ Deputy Editor 6+ Editorial Board 40+ Youth Editorial Board 17
26	66	Editor-in-Chief 3+ Executive Editor 1+ Column Editor 6 (Microbiology 2+ Immunology 2+ Translational Medicine 2)+ Editorial Board 55+ Editorial Director 1
21	62	Editor-in-Chief 1+ Deputy Editor-in-Chief 10+ Editorial Board 51
5	55	Editor-in-Chief 2+ First Editor-in-Chief 1+ Deputy Editor-in-Chief 5+ Editorial Committee 47
13	53	Editor-in-Chief 1+ Domain Editor-in-Chief 5+ Executive Editor-in-Chief 1+ Editorial Board Member 45+ Editorial Director 1
1	48	Editor-in-Chief 2+ Editorial Committee 46
19	48	Editor-in-Chief 2+ Deputy Editor-in-Chief 4+ Editorial Committee 42
18	40	Editor-in-Chief 2+ Deputy Editor-in-Chief 3+ Senior Consultant Editor-in-Chief 1+ Column Editor-in-Chief 1+ Editorial Board 33
4	34	Editor-in-Chief 1+ Executive Editor 3+ Deputy Editor 16+ Editorial Board 11+ Editorial Director 1+ Management Editor 2
17	31	Editor-in-Chief 2+ Deputy Editor 4+ Editorial Board 25
15	27	Editor-in-Chief 2+ Executive Editor 1+ Editorial Board 24
12	24	Editor-in-Chief 1+ Executive Editor 1+ Editorial Board 22
7	18	Editor-in-Chief 1+ Executive Editor 2+ Editorial Board 15

Note. N = Number of publishing teams; Ranked according to the number of publishing teams; In the column of "Journal Team Structure and Number of People", the number after the position is the number of people corresponding to the position; All data ar e from official website (statistical time is December 31, 2023).

The Editor-in-Chief plays a pivotal role in shaping the developmental trajectory of a journal and securing academic resources [18], a widely acknowledged consensus in the international publishing community. Furthermore, the international academic recognition of the Editor-in-Chief is closely linked to the journal's credibility and reputation [19]. With its extensive network of experts and scientists, the Chinese Academy of Sciences (CAS) boasts unique advantages in establishing high-starting-point journals. CAS brings together tens of thousands of top scholars across various disciplines, making its journals well-positioned to leverage these resources.

As shown in Table 9, 60% of the 25 selected journals have Chinese scientists serving as Editors-in-Chief, and 18 journals (72%) are led by academicians from CAS, the Chinese Academy of Engineering (CAE), or foreign academies. This leadership plays a crucial role in mobilizing academic resources and fostering development within their respective disciplines. In addition, China Science and Technology Publishing Media Co., Ltd. (CSTPM) has adopted an innovative and data-driven approach to selecting Editors-in-Chief. By utilizing big data on scientific research, CSTPM identifies suitable candidates based on metrics such as publication records and academic reputation. For example, *Bioactive Materials* appointed Professor Zheng Yufeng from Peking University as Editor-in-Chief. Similarly, *Synthetic and Systems Biotechnology* appointed two Editors-in-Chief: Professor Zhang Lixin from East China University

of Science and Technology, who is also the Director of the State Key Laboratory of Bioreactor Engineering, and Professor Chen Guoqiang from Tsinghua University, the chief scientist of the 973 "Synthetic Biology" project. This strategic approach enables the rational allocation of academic resources and enhances the journal's competitive advantage.

The academic influence and appeal of the editorial board are key factors in attracting high-quality submissions, especially during the establishment of a new journal. An international editorial board further bolsters a journal's global influence and visibility [20]. According to Table 9, more than half of the 25 selected journals have editorial boards comprising 50 to 100 members. Moreover, in over half of the journals, foreign members constitute more than 50% of the editorial board, providing significant opportunities for international collaboration. These diverse and internationally represented editorial boards allow journals to fully leverage high-quality overseas academic resources, thereby expanding their global reach and reinforcing their international positioning.

Notably, the majority of international editorial board members are affiliated with prestigious universities and research institutions worldwide. This not only strengthens the journal's academic foundation but also establishes a strong starting point for its development. The emphasis on high-quality editorial board composition aligns with the overarching goal of launching journals with robust academic credibility, global appeal, and long-term sustainability. This approach reflects the philosophy of "starting high, holding high, playing high, and walking high," which serves as a guiding principle for establishing internationally competitive sci-tech periodicals.

TABLE 9 | Statistics of editor-in-chief, deputy chief editor and editorial board team.

Project	Content	N1	Percentage/%	No. of Journal
Number of Editorial Team	> 100	3	12	2, 10, 14
	>50 ~ ≤100	14	56	3, 5, 6, 8, 11, 13, 16, 20, 21, 23, 25, 26, 27, 28
	>25% ~ ≤50	6	24	1, 4, 15, 17, 18, 19
	< 25	2	8	7, 12
Editor-in-Chief	Academician of CAS	9	36	2, 3, 4, 6, 13, 14, 23, 25, 27
	Academician of CAE	6	24	7, 12, 15, 16, 17, 21
	Foreign academician	2	8	18, 20
	Academician of CAS + Foreign Academician	1	4	26
	NSFC Outstanding Young Scientist	3	12	5, 10, 28
	Other	4	16	1, 8, 11, 19
Deputy Editor-in-Chief	Non-Chinese editor	1	4	4
	Editor-in-Chief from China	15	60	2, 3, 4, 5, 6, 7, 10, 12, 13, 14, 15, 21, 23, 25, 28
	Chinese and Non-Chinese double editors/multiple editors	9	36	8, 11, 16, 17, 18, 19, 20, 26, 27
Percentage of Foreign EBMs	≤25%	2	8	3, 14
	>25% ~ ≤50%	10	40	4, 6, 15, 20, 21, 26, 27, 28
	>50% ~ <75%	11	44	2, 5, 7, 8, 10, 12, 16, 17, 19, 23, 25
	≥75%	2	8	1, 18

Note. N = Number of Journals.

3.5 | Open Access Publishing and Online-First Strategies

In the era of mobile internet, the publishing industry has undergone significant transformation with the emergence of new publishing models such as Open Access (OA), online first, enhanced publishing, and data publishing. These innovations have made traditional publishing more dynamic and multidimensional. The OA movement,

in particular, began with the goal of breaking the monopoly of traditional publishers and creating a platform that fully supports scientific research and academic exchange [21]. As a transformative initiative within the library, information, and publishing sectors, OA provides late-developing journals with an opportunity to gain greater visibility and communication power. By removing barriers to knowledge dissemination, OA enables readers to freely access and retrieve research papers through the internet, improving the accessibility and reach of both papers and journals [22]. For newly established journals, OA represents an effective means to enhance their global communication and influence.

The 25 new journals supervised by CAS are supported by ample funding, allowing them to adopt OA models from the outset. Among these, 92% operate under the diamond OA model, where neither authors nor readers incur publication or access charges. For example, *Communications in Mathematics and Statistics*, although currently operating under a hybrid OA model, was fully OA during its first two years of publication. The adoption of the OA publishing model not only encourages authors' participation and meets readers' needs but also aligns with the current global trend of open science. By making articles freely accessible to researchers worldwide, these journals are able to rapidly enhance their academic influence and visibility.

The Directory of Open Access Journals (DOAJ), established by Lund University in Sweden, is a globally recognized database dedicated to indexing high-quality OA journals across disciplines and languages. Inclusion in DOAJ signifies adherence to strict OA policies, ethical standards, and publishing guidelines [23–24]. As shown in Table 10, of the 23 selected journals published under OA, 19 have been indexed by DOAJ, representing 82.61%. Although the remaining four journals are not yet indexed in DOAJ, they still provide OA publishing options for authors, demonstrating their commitment to open science principles.

To further accelerate the dissemination of research findings, many of these journals offer early access services. This feature ensures that new scientific knowledge becomes available to the community before formal publication in an issue. Among the 25 selected journals, 60% provide online-first publishing, which allows researchers and readers to access articles immediately after acceptance. This approach not only facilitates timely academic exchange but also positions these journals as key players in the rapid dissemination of cutting-edge research.

TABLE 10 | Overview of publishing models and DOAJ status of selected journals.

Project	Content	Number of Journals	Percentage/%	Journal No.
Publishing Model	OA	23	92	1, 2, 23, 4, 5, 6, 7, 8, 19, 11, 12, 14, 15, 16, 17, 18, 19, 20. 21, 23, 25, 26, 27
	Hybrid	1	4	13
	Subscription	1	4	28
DOAJ Index	Yes	19	82.61	2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 27
	No	4	17.39	1, 23, 25, 26
Early Access	Yes	15	60	2, 3, 4, 5, 6, 11, 12, 13, 15, 17, 18, 19, 23, 26, 27
	No	10	40	1, 7, 8, 19, 14, 16, 20, 21, 25, 28

Note. When calculating the proportion of DOAJ, 23 fully OA published journals are used as denominator.

3.6 | Number of Published Papers and Publishing Frequency

As shown in Tables 11 and 12, among the 25 selected journals, 9 (36%) were already operational before being selected as high-starting-point projects. This indicates that these journals were functioning normally and met the basic criteria for selection. Two journals published their first issue in the same year they were selected, while 8 journals (32%) were launched within one year of selection. To achieve this, publishing teams had to be well-prepared in advance, particularly in terms of editorial teams and manuscript sources, ensuring mature conditions for journal operations before selection. Meanwhile, 6 journals (24%) were launched within two years of being selected, demonstrating varying levels of readiness among the selected journals.

The number of articles published varies significantly across journals, influenced by disciplinary differences and the level of academic activity in the respective fields. An analysis of 22 selected journals

(excluding three journals launched after 2022) reveals that the average number of articles published in the first three years of operation was fewer than 100. Only one journal published an average of more than 50 articles annually during this period, while 95.45% of journals published fewer than 50 articles on average. This suggests that most journals adopt a "quality over quantity" strategy during their initial development phase, focusing on strengthening their reputation before expanding their publication volume. This cautious approach aligns with periodical evaluation metrics, as many journals opt to limit the number of articles published and prioritize high-quality manuscripts to enhance their impact factors. By reducing the denominator in citation calculations, journals aim to improve their performance in key evaluation indices.

However, while this trend is common globally, it is important to strike a balance between maintaining a reasonable publication volume and achieving favorable evaluation metrics. Overemphasis on impact factors risks deviating from the fundamental purpose of academic communication.

Publication frequency also reflects strategic considerations by these journals. Due to adjustments in publication schedules based on manuscript availability or internal planning, journals launched earlier exhibited more balanced development by 2022. Consequently, this study analyzes publication frequency using 2022 as the reference year. As shown in Table 12, of the 22 journals analyzed (excluding the three launched after 2022), 10 journals (45.5%) adopted a quarterly publication schedule. This cycle is widely used among English-language journals globally and offers consistent periodicity. Additionally, 7 journals (31.8%) opted for continuous publishing, a flexible model that allows the editorial team to manage workloads and coordinate article volumes more effectively across issues. Another key strategy observed among the new journals is the use of special issues to drive development and attract submissions. As shown in Table 11, 15 of the 22 journals (68.18%) have organized special issues or issued calls for contributions to special issues. This reflects a common approach for engaging the academic community, highlighting specific topics, and increasing the visibility and impact of the journals.

TABLE 11 | Number and publication of papers.

No.	Selected year	Online time of the first article	N1	N2	N3	Special issue
16	2020	2012.2	11&1	35&1	24&1	No
13	2020	2013.3	25&4	22&4	25&4	Yes
17	2020	2015.11	8&1	27&4	17&4	Yes
18	2020	2016.1	10&1	32&4	27&1	Yes
5	2019	2016.3	35&4	36&4	36&4	Yes
10	2019	2016.9	16&2	34&4	47&4	Yes
19	2021	2018.4	22&3	27&3	27&1	Yes
7	2019	2019.3	21&3	25&1	30&1	No
15	2020	2019.3	36&2	19&2	29&2	No
23	2021	2020.1	67&6	57&6	78&6	Yes
11	2019	2020.4	8&1	7&1	39&1	Yes
6	2019	2020.9	22&2	47&4	42&4	No
8	2019	2020.9	9&1	31&4	30&4	No
1	2019	2021.1	7&1	25&1	24&1	No
4	2019	2021.1	22&1	24&1	31&1	Yes
2	2019	2021.7	12&4	18&6	22&5	Yes
3	2019	2021.8	13&2	30&4	31&4	Yes
12	2020	2022.1	26&12	N/A	N/A	Yes
14	2020	2022.1	30&3	N/A	N/A	Yes
27	2022	2022.2	42&4	N/A	N/A	Yes
20	2021	2022.3	42&4	N/A	N/A	No
21	2021	2022.3	9&1	N/A	N/A	Yes
25	2022	2023.1	N/A	N/A	N/A	Yes
26	2022	2023.11	N/A	N/A	N/A	No
28	2022	N/A	N/A	N/A	N/A	No

Note. N1, N2, and N3 = Number of Articles Published in the First/Second/Third Year & Number of Publication Periods, which indicates the number of articles published in the first year, the second year and the third year after the publication of the first article in the journal. This can reflect the situation in the initial stage of publication.

TABLE 12 | Distribution of founding and contribution sources.

Item	Content	Number of Journals	Percentage	Journal No.
Comparison between the time of publication and the selection of high starting point project	Founded before being selected	9	36%	5, 10, 13, 15, 16, 17, 18, 19, 23
	Be selected for publication in the same year	2	8%	7, 27
	Founded within one year after being selected	8	32%	6, 8, 11, 20, 21, 25, 26, 28
	Founded within 2 years after being selected	6	24%	1, 2, 3, 4, 12, 14
Average number of papers published in the first three years	< 20 articles	5	22.73%	1, 2, 11, 17, 21
	20 ~ 29 articles	10	45.45%	3, 4, 7, 8, 12, 13, 15, 16, 18, 19
	30 ~ 49 articles	6	27.27%	5, 6, 10, 14, 20, 27
	≥50 articles	1	4.55%	23
Publication frequency in 2022	Quarterly	10	45.45%	3, 5, 6, 8, 13, 17, 18, 19, 20, 27
	Continuous Publication	7	31.82%	1, 4, 7, 11, 14, 16, 21
	Monthly	2	9.09%	2, 23
	Bimonthly	2	9.09%	10, 12
	Semiyearly	1	4.55%	15

Note. Among the 25 selected journals, 3 journals were founded in 2023 (No.25, 26, 28), so the number of articles published and the publishing cycle are not counted.

3.7 | Author Internationalization

The internationalization of journal authors, in a narrow sense, can be assessed by examining the diversity of authors' affiliations and the geographic distribution of authors across countries and regions [25]. Data on authors' national and regional distribution, including the proportion of non-Chinese authors and the total number of contributing countries and regions, were obtained from the Scopus database. The results are presented in Table 13. As of December 2022, 17 out of the 25 selected journals were indexed in the Scopus database. Therefore, only the papers published by these 17 journals are included in this analysis.

The data in Table 13 demonstrate that these journals place significant emphasis on international contributions. Most of the journals feature a substantial proportion of articles authored either collaboratively by domestic and foreign contributors or entirely by authors affiliated with foreign institutions. The largest group of journals (58.82%) has foreign authors accounting for 40% to 70% of the total authorship. *Green Chemical Engineering* has the highest proportion of foreign authors at 71%, while the journal with the lowest proportion has slightly over 10%.

In terms of geographic diversity, Table 13 shows that most journals have contributors from 20 to 39 countries or regions, representing the largest category. The journal with the least geographic diversity is *Ultrafast Science*, which includes contributions from only four countries, while *Infectious Disease Modelling* has the broadest geographic scope, with authors from 77 countries. The breadth of manuscript sources is directly tied to the journal's influence: journals with contributions from a wide range of countries and regions have a greater ability to disseminate research findings on a global scale, thereby enhancing their international visibility and impact.

The internationalization of manuscript sources not only broadens a journal's academic reach but also serves as a critical measure of its recognition within the global scientific community. A wide distribution of authorship indicates that the journal is highly regarded by international peers and functions effectively as a platform for scientific research and academic exchange [26]. By attracting contributions from diverse geographic regions, these journals can better fulfill their role in promoting international collaboration and advancing global academic discourse.

TABLE 13 | Distribution of articles published in 25 selected journals.

Project	Content	Number of journals	Percentage	Journal No.
Proportion of non-Chinese authors	<20%	4	23.53%	7, 16, 17, 18
	≥20% ~ <40%	2	11.76%	1, 8
	≥40% ~ <70%	10	58.82%	2, 3, 5, 10, 13, 15, 19, 20, 23, 27
	≥70%	1	5.88%	6
Number of author countries and regions	< 20	4	23.53%	1, 2, 3, 20
	≥20 ~<40	7	41.18%	5, 6, 7, 15, 19, 23, 27
	≥40 ~<60	2	11.76%	8, 13
	≥60	4	23.53%	10, 16, 17, 18

Note. Foreign authors refer to authors whose units are not in China.

3.8 | Article Type

As shown in Table 14, the 25 selected journals exhibit several commonalities in the types of articles they publish. With the exception of *Communications in Mathematics and Statistics*, which publishes only one type of article, most journals feature three standard article types: editorials, reviews, and research articles. These categories form the core structure of the journals and cater to diverse academic and research needs. In addition to these common formats, many journals include specialized columns for concise article types such as mini reviews, short reviews, short communications, brief reports, and rapid reports. These formats enable the publication of focused research findings or summaries in a more compact manner, facilitating quicker dissemination of key insights. Several journals also include opinion-based article types, such as perspectives, commentaries, relevance, and opinions, which provide platforms for expert commentary and scholarly discussion.

Moreover, some journals have introduced customized article types tailored to the specific needs and characteristics of their respective fields. For example, fields like environmental science and public health feature article types such as "Emerging Pollutants," "Case Studies," and "Surveys," which allow for the presentation of unique research results and case-based insights. These personalized article formats enhance the diversity of published content and broaden the scope of research outputs represented in the journals. The inclusion of such varied and specialized article types reflects the journals' efforts to address the diverse needs of their academic communities and to increase their relevance across disciplines. By offering a wide range of formats, these journals provide a more comprehensive platform for the dissemination of scientific knowledge and scholarly debate.

TABLE 14 | Article types.

No.	Article types
1	Editorial, Review, Research Article, Letter, Tutorial, Commentary, Perspective
2	Editorial, Review, Research Article, Perspective
3	Editorial, Review, Research Article, Short Communication, Mini review
4	Editorial, Review, Research Article, Perspective
5	Editorial, Review, Research Article, Short Communication, Commentary, Perspective, Research Highlight
6	Editorial, Review, Research Article, Short Communication, News
7	Editorial, Review, Research Article, Short Communication
8	Editorials, Review, Research Article, Short Communication, Short Review
10	Editorial, Review, Research Article, Short Communication
11	Editorial, Review, Research Article, Rapid Report, Perspective
12	Editorial, Review, Research Article, News & Views, Letters, Perspective
13	Original Article
14	Editorial, Review, Research Article, Perspective, Commentary
15	Editorial, Review, Research Article, Short Communication, Event Report, Opinion, Letter to Editor, News, Correspondence
16	Editorial, Review, Research Article, Short Communication
17	Editorial, Review, Research Article, Commentary, Perspective, Case Study, Survey
18	Editorial, Review, Research Article, Short Communication
19	Editorial, Review, Research Article, Perspective, Comments, Short Communication, Book Review
20	Editorial, Mini Review, Review, Perspective, Original Research, Correspondence, Research Highlight, Opinion
21	Editorial, Review, Research Article, Views, Perspective, Commentary
23	Editorial, Review, Research Article, Mini Review, Commentary, Correspondence
25	Editorial, Review, Perspective, Research Article, Viewpoint
26	Editorial, Review, Research Article, Perspective, Letters, Mini review、Short Communication, Commentary, News and Views
27	Editorial, Review, Research Article, Short Communication, Mini Review
28	Editorial, Review, Research Article, Letter

The "first issue" of a journal provides valuable insight into its initial development plan and editorial strategy. As shown in Figure 1, 22 of the new high-starting-point journals have published articles online by December 31, 2022. Analysis of these first issues reveals that, with the exception of *Journal of Remote Sensing* and *Journal of Biosafety and Biosecurity*, the number of articles published in the inaugural issue of the other 20 journals is fewer than 15. The types of articles in these first issues predominantly include "editorials," "reviews," and "research articles," reflecting the foundational structure and content focus of these journals. The *Journal of Remote Sensing*, as a continuously published journal, differs in that the total number of articles published in its first year is equivalent to the number published in its inaugural issue. This accounts for its higher article count, exceeding 15 in the first issue. In contrast, the *Journal of Biosafety and Biosecurity* published a total of only 12 articles in its first issue, despite covering the common categories of "editorials," "reviews," and "research articles."

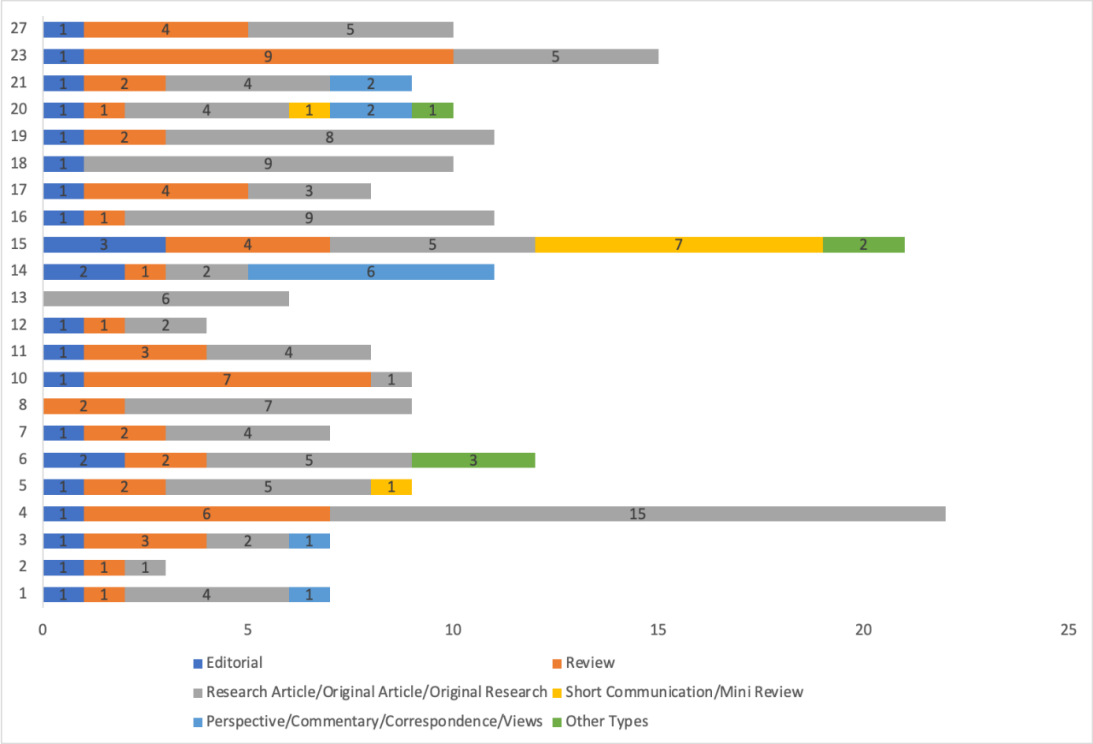

FIGURE 1 | Article types of the inaugural issue.

3.9 | Journal Performance

3.9.1 | Database Indexing

Inclusion in internationally renowned databases, such as SCI, Scopus, and Ei Compendex, is widely regarded as a key indicator of the internationalization and academic credibility of S&T journals. As shown in Table 15, the 25 selected journals demonstrate varying levels of inclusion in these databases. Due to disciplinary restrictions, Ei Compendex and PubMed each include only two of the selected journals. Scopus, on the other hand, indexes the largest number of journals, covering 76% of the selected titles. Among the journals included in SCI, only five have been indexed in SCIE, and all of them were established prior to being selected as new high-starting-point periodicals. Additionally, nine journals are indexed in ESCI, further reflecting their growing academic presence. While database inclusion is often seen as a measure of academic value, the true impact of a journal lies in its ability to advance scientific research, which is better reflected in metrics such as citation rates and the influence of its published articles.

TABLE 15 | Indexing of journals in various databases.

Database	Number of journals	Percentage	Journal No.
SCIE	5	20%	5, 10, 13, 16, 23
ESCI	9	36%	1, 4, 8, 11, 17, 18, 19, 20, 27
Scopus	19	76%	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13, 15, 16, 17, 18, 19, 20, 23, 27
PubMed	2	8%	10, 11, 17, 18
Ei Compendex	2	8%	6, 19
Not included in the above five important databases.	6	24%	12, 14, 21,25, 26, 28

Being indexed in prestigious databases can significantly enhance the visibility and credibility of journals, attracting submissions from

scholars worldwide. This recognition creates a virtuous cycle: increased academic visibility leads to higher-quality submissions, which in turn improves the journal's influence and reputation. As a result, inclusion in internationally renowned databases serves not only as a milestone for academic journals but also as a mechanism to foster greater scientific exchange and collaboration.

3.9.2 | Journal Status in Scopus

Since Scopus indexes the largest number of journals among the selected titles, this study uses the top partition and ranking within Scopus as the primary metrics for comparing journal performance. For journals categorized under multiple disciplines, the highest-ranking partition is selected as the representative measure of their performance. For instance, the *Journal of Biosafety and Biosecurity* is ranked in the Q1 category within social sciences and Q2 across engineering, immunology, microbiology, and medicine. In this case, its Q1 ranking is used, as it represents the journal's highest global competitiveness. Thirteen of the 25 selected journals achieved CiteScore rankings and regional partitions in 2022, with these results published in 2023. Table 16 presents the Scopus rankings of these 13 journals for 2022. Overall, the distribution of journal rankings is well-balanced. The largest proportion of journals (69.23%) are ranked in the Q1 category, demonstrating their strong academic influence and competitive positioning on a global scale. Journals ranked in Q2 and Q3 are evenly distributed, reflecting the academic strength of the selected titles across multiple fields. These results highlight the Excellence Action Plan's success in fostering high-quality journals with global impact, showcasing China's progress in advancing world-class academic publishing.

Although the impact factor of a journal is not a direct measure of the quality of individual papers, it serves as an important indicator of a journal's academic influence and visibility. To build globally impactful journals, it is essential for journals to focus on strengthening their foundational quality by prioritizing the publication of high-level original research. By doing so, journals can attract a larger readership, draw in higher-quality submissions, and generate a "core effect," wherein increased visibility and influence form a positive feedback loop. This aligns with the behavior of authors who are more likely to submit to journals with higher impact and reputation [27]. Achieving high rankings in Scopus not only reflects the academic excellence of these journals but also serves as a stepping stone toward cultivating internal academic strength. By focusing on the quality and relevance of published research, these journals can solidify their role in advancing their respective fields and contributing to the global academic discourse.

TABLE 16 | 2022 journal performance in scopus

Project	Partition	Number of Journals	Percentage	Periodical No.
Scopus partition	Q1	9	69.23%	7, 8, 10, 15, 16, 17, 18, 19, 23
	Q2	2	15.38%	5, 6
	Q3	2	15.38%	13, 27

Note. This data is the partition data released by Scopus in 2023.

4 | Discussion

The Chinese Academy of Sciences (CAS), as a leading scientific research institution in China, plays a crucial role in advancing the development and internationalization of Chinese academic journals. While Chinese journals have made notable progress in improving their global influence and reputation in recent years, significant challenges remain in achieving full international recognition and competing with well-established international journals. This section discusses key measures from the perspective of CAS to further enhance the global competitiveness of Chinese journals.

4.1 | Elevating CAS Journals to Global Standards

The cornerstone of any journal's international success is the quality of its published content. To strengthen the quality of Chinese journals, several measures must be prioritized. First, journals must focus on publishing high-impact research papers that make significant contributions to advancing science and technology. Rigorous peer-review processes and the selection of high-quality manuscripts are critical in achieving this objective. Additionally, attracting leading researchers, both as authors and editorial board members, will enhance a journal's reputation and influence within the global academic community. Furthermore, improving editorial workflows and optimizing publishing processes can ensure the timely dissemination of research findings, a critical factor in maintaining relevance and competitiveness in today's fast-paced academic landscape.

International collaboration is essential for advancing the global presence of Chinese journals. Establishing partnerships with international journals and academic institutions provides opportunities to exchange best practices and research findings, enabling Chinese journals to learn from their well-established international counterparts. Active participation in international conferences and academic events is equally important, as it raises the visibility and reputation of journals within the global academic community. Furthermore, fostering an inclusive environment by encouraging contributions from researchers worldwide and promoting cross-border academic exchanges can greatly support the internationalization of Chinese journals.

Improving visibility and accessibility is critical for increasing the global reach of Chinese journals. A strong online presence, supported by user-friendly websites, is essential for making journal content easily accessible to researchers. This includes ensuring intuitive navigation, searchability, and seamless access to downloadable articles. Moreover, inclusion in renowned abstracting and indexing databases, such as the Science Citation Index (SCI) and Scopus, will significantly enhance the visibility and credibility of Chinese journals. Leveraging modern communication tools, such as social media platforms (e.g., Twitter, Facebook) and academic networking sites (e.g., ResearchGate, Dimensions), can also help journals engage with a wider international audience and strengthen their global influence.

The quality and expertise of editorial teams are integral to the success of academic journals on the global stage. Many Chinese

journals currently rely on in-house editors who are recent PhD graduates, highlighting the need for targeted training and professional development. CAS and other institutions should invest in workshops, training programs, and other initiatives to equip editors with the skills required to navigate international publishing standards. Enhancing editors' knowledge of journal editing, publishing processes, and global academic trends will not only improve the operational efficiency of journals but also increase their competitiveness and quality, paving the way for greater international recognition.

4.2 | Government Strategies for Advancing Academic Publishing

4.2.1 | Establishing Independent Publishing Platforms for Global Impact

An increasing number of Chinese researchers are advocating for China to establish its own “publishing ships” to achieve global impact. While China is home to a vast number of academic journals, making it a "big journal country," achieving global leadership in the journal industry requires a shift toward independent publishing. The reliance on “renting ships” (collaborating with foreign publishers) is neither sustainable nor sufficient for building long-term influence in the global publishing landscape. To address this, initiatives such as the pilot clustering projects of the Excellence Action Plan, declared by China Science and Technology Publishing Media Co., Ltd. (CSTPM) and China Laser Magazine Co., Ltd., are spearheading efforts to develop domestic publishing platforms. Both projects are administered by the Chinese Academy of Sciences (CAS).

For example, CSTPM has developed an advanced S&T journal publishing service platform that integrates full-process digital publishing with international communication. This platform facilitates fast, high-quality publishing and ensures accurate, timely dissemination of research outputs. Similarly, China Laser Magazine Co., Ltd. has created the *Researching* publishing platform, which aggregates journals from China Laser Publishing Magazine and cooperative optical journals. This platform aims to provide readers with a globally influential optical publishing hub. These efforts mark significant progress toward establishing independent publishing platforms, representing a critical first step in China’s journey to “build ships and sail to the sea.”

However, considerable challenges remain in competing internationally. To establish global leadership in the journal publishing industry, China must focus on integrating resources, innovating publishing services, and enhancing the international reputation of its journal brands. Additionally, predicting future technological trends and aligning publishing platforms with cutting-edge developments will be crucial for achieving competitive standing among global publishing leaders.

4.2.2 | Expanding Global Collaboration Through Diverse Editorial Teams

While CAS benefits from a wealth of expert resources, including top scholars from diverse disciplines across China, there are still limitations in the international composition of its editorial teams. Notably, 60% of the journals are led by academicians from the Chinese Academy of Sciences and the Chinese Academy of Engineering, which provides an unparalleled foundation and reputation for these journals. However, only 40% of the journals have foreign editors or editorial boards with mixed domestic and international members, and just one journal is entirely led by foreign editors.

For new high-starting-point journals, establishing editorial teams with international or Sino-foreign collaboration is essential for fostering a synergistic development model where domestic and international influence mutually reinforce one another. This approach will enhance the journals’ visibility and credibility on the global stage. Moving forward, it is recommended that journals expand their editorial teams by incorporating experts from diverse countries and regions based on their academic strengths. This will not only broaden the scope of the journals' influence but also facilitate the exchange of ideas and practices, thereby solidifying their position within the global academic publishing ecosystem.

5 | Conclusions

This study analyzed 28 newly established high-impact English-language journals launched by the Chinese Academy of Sciences (CAS) between 2019 and 2022. These journals align closely with national policies promoting the development of English-language academic journals in emerging and strategic front-end disciplines. The analysis covered various characteristics of these journals, including their organizers, discipline distribution, publishing institutions, publishing and editorial teams, publishing models, online accessibility, distribution of articles and contributions, internationalization of authorship, and column settings. These aspects provide valuable insights into the strategies adopted by CAS in advancing the internationalization and influence of Chinese academic publishing.

The findings demonstrate that CAS, as a representative of Chinese journal sponsors, has made substantial progress in improving the global influence and reputation of Chinese academic journals. However, significant challenges remain in achieving global recognition and in effectively competing with well-established international journals. Despite notable advancements, a gap persists between Chinese journals and their global counterparts, particularly in terms of visibility, accessibility, and international collaboration. To address these challenges, several recommendations are proposed. From the perspective of sponsors, efforts should focus on enhancing journal quality by prioritizing the publication of high-impact research, fostering international collaboration and exchange, improving the visibility and accessibility of journals, and investing in the training and development of journal editors and staff. These steps will strengthen the operational efficiency and competitiveness of journals on the global stage. From the perspective of the government, it is essential to transform the academic publishing landscape by

establishing internationally competitive publishing platforms and focusing on building diverse and internationally representative editorial teams. The government's support in integrating resources, innovating services, and increasing the global reputation of Chinese journal brands will be crucial for long-term success.

Future research will build on these findings by comparing the strategies for launching new journals employed by Chinese publishers with those of international publishers. This comparative analysis aims to uncover best practices and provide actionable insights that can further enhance the internationalization and competitiveness of Chinese academic journals in the global publishing landscape.

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Author Contribution Statement

Liu He: Conceptualization, Methodology, Funding Acquisition, Writing - Original Draft. Xiaochun Wang: Formal analysis, Validation, Writing - Review & Editing.

Ethical Statement

This study does not contain any studies with human or animal subjects performed by any of the authors.

Conflicts of Interest

The authors declare that they have no conflicts of interest to this work.

Data Availability Statement

Not applicable.

References

[1] Li, M., Yang, R. (2020). Enduring hardships in global knowledge asymmetries: A national scenario of China's English-language academic journals in the humanities and social sciences. *Higher Education*, 80(2), 237-254.

[2] Wang, C. (2022). Establishment of World-Class Academic Journals Based on Local and Global Perspectives. *Intensive Care Research*, 2(3), 47-48.

[3] Rui, Y., Baoji, W. (2020). Analysis of selected journals in excellence action plan for China STM journals based on bibliometrics. In *18th International Conference on Scientometrics and Informetrics, ISSI* 2021, 1563–1564.

[4] YANG Baohua, ZHENG Yutong. (2020) Data analysis of the English scientific journals selected by the Excellence Action Plan of China STM Journals and suggestions on the development of China's scientific journals. *Chinese Journal of Scientific and Technical Periodicals*, 31(12), 1528-1534.

[5] WANG Yajiao, TIAN Jie, LlU Weixiao, LI Chuan, GUO Lijuan, SHI Wenchuan. (2020). Survey and analysis on new English scientific journals funded by Excellence Action Plan for China STM Journals. *Chinese Journal of Scientific and Technical Periodicals*,31(5), 614-621.

[6] YU Zhenglu, MA Zheng, TIAN Ruiqiang. (2019). Developing S&T journals in Chinese and English bilingual edition contributes to transfer science center. *Acta Editologica*, 31(3), 237-241.

[7] TIAN Yuan, WANG Xinxin. (2022). International influence improvement of new English scientific journals: Taking Green Chemical Engineering as an example. *Chinese Journal of Scientific and Technical Periodicals*, 33(06), 696-703.

[8] CHEN Yibao, GAO Jun'e. (2022). Basic features of High Starting Point New Journals of Excellence Action Plan for China STM Journals and suggestions on the development of China's scientific journals. *Chinese Journal of Scientific and Technical Periodicals*, 33(07), 988-994.

[9] Larivière, V., Haustein, S., Mongeon, P. (2015). The oligopoly of academic publishers in the digital era. *PloS one*, 10(6), e0127502.

[10] WANG Yajiao, TIAN Jie, LlU Weixiao, LI Chuan, GUO Lijuan, SHI Wenchuan. (2020). Survey and analysis on new English scientific journals funded by Excellence Action Plan for China STM Journals. *Chinese Journal of Scientific and Technical Periodicals*, 31(5), 614-621.

[11] Song, W. (2020). China's global engagement to fight the novel coronavirus pandemic. Global Health Research and Policy, 5(1), 44.

[12] Lamb, D. (2020). Trends in US Trade Book Publisher Mergers and Acquisitions. *Publishing Research Quarterly*, 36(3), 323-334.

[13] Daly, R., Organ, M. (2009). Research online: digital commons as a publishing platform at the University of Wollongong, *Australia. Serials Review*, 35(3), 149-153.

[14] Gies, T. (2018). The ScienceDirect accessibility journey: A case study. *Learned publishing*, 31(1), 69-76.

[15] Gasparyan, A. Y., Yessirkepov, M., Voronov, A. A., Koroleva, A. M., Kitas, G. D. (2019). Comprehensive approach to open access publishing: platforms and tools. Journal of Korean Medical Science, 34(27).

[16] Deng Yuling. (2022). Strategies for new English journals: Based on the investigation and analysis of High Starting

Point New Journals of Excellence Action Plan for China STM Journals in 2021. *Chinese Journal of Scientific and Technical Periodicals*, 33(11), 1569-1579.

[17] Liu, X., Wang, H., Liang, Y., Zhou, H., Luo, D. (2023). Exploration and practice of building a youth editorial board for scientific and technological journals: A case study in *Journal of Materials Science & Technology. Editing Practice*, 1.

[18] Fontes, I., Menegon, L. F. (2022). The competences of the editor-in-chief of a scientific journal: gaps and trends. *Revista de Gestão,* 29(2), 199-213.

[19] Noroozi Chakoli, A. (2024). Note from the Editor-in-Chief: The Evaluation Criteria for the Editor-in-Chief, the Scientific Credibility of the Editorial Board Members, and the Enhancement of the Journal. *Scientometrics Research Journal*, 9(2, Autumn & Winter)), 1-2.

[20] Parker, L. D. (2007). Developing research journals and qualitative inquiry: the role of the editorial board. *Qualitative research in accounting & management*, 4(3), 168-182.

[21] Sheikh, A., Richardson, J. (2023). Open access movement in the scholarly world: Pathways for libraries in developing countries. *Journal of Information Science*, 01655515231202758.

[22] Adegbilero-Iwari, I., Adetoro, N., Salawu, I. K. (2023). The Open Access Movement and its March in Africa. African Journal of Library, *Archives & Information Science*, 33(2), 115-129.

[23] Sheikh, A., Zahra, A. Q., Richardson, J. (2022). Scholarly open access journals in medicine: A bibliometric study of DOAJ. The *Journal of Academic Librarianship*, 48(3), 102516.

[24] Sun, L. (2019). Journals removed from DOAJ appearing within SCImago's ranks: A study of excluded journals. *Learned publishing*, 32(3), 207-211.

[25] Zitt, M., Bassecoulard, E. (1998). Internationalization of scientific journals: a measurement based on publication and citation scope. Scientometrics, 41(1), 255-271.

[26] LIU Fen. (2017). Research on the Internationalization Path of Chinese Academic Journals. Wuhan: Wuhan University.

[27] YOU Suning. (2008). Discussion on internationalization of sci-tech journals[J]. *Acta Editologica*, 20(1), 1-4.