

EDITORIAL

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A decade of innovation: the journey of *Microsystems & Nanoengineering* on its 10th anniversary

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In the expansive realm of academic research, a decade may seem like a brief moment. Yet, for *Microsystems & Nanoengineering* (*MINE*), the last ten years have been marked by groundbreaking efforts and extraordinary achievements. According to the Journal Citation Reports from the Web of Science, *MINE* was ranked No. 3 among journals in the Instruments and Instrumentation category, with a projection suggesting it will likely rise to No. 1 based on predicted instant impact factors in the same category. As Editors-in-Chief of the journal, we have had the privilege of witnessing and playing an integral role in *MINE*'s remarkable growth during this time. In this editorial, we will reflect on *MINE*'s first decade, celebrating its milestones, assessing its impact, and exploring its future aspirations.

Launch: sparking a new era of academic excellence

In 2015, amid a global surge in technological advancements, the field of microsystems and nanoengineering presented unprecedented opportunities for growth. It was within this dynamic landscape that *MINE* was established. Based on a collaborative effort between the Chinese Academy of Sciences and Springer Nature (formerly Nature Publishing Group), *MINE* was founded with the vital mission of promoting academic exchange in the field of microsystems and nanoengineering. In 2015, amid a global surge in technological advancements, the field of

microsystems and nanoengineering opened unprecedented opportunities for growth. It was within this dynamic landscape that *MINE* was established. Following the signing of a collaborative agreement between the Aerospace Information Research Institute, Chinese Academy of Sciences (formerly the Institute of Electronics, Chinese Academy of Sciences) and Springer Nature (formerly Nature Publishing Group) which led to the founding of *MINE*, the three editors-in-chief embarked on a challenging yet hopeful journey, driven by their vision of creating a world-class academic journal. To build a globally influential editorial board, we proactively reached out to leading scholars in the international research community. Through in-depth discussions with renowned scientists worldwide, we shared our bold vision for *MINE*: to establish a high-end academic platform that transcends national and disciplinary boundaries, where researchers from across the globe could exchange ideas, share achievements, and accelerate breakthroughs in microsystems and nanoengineering. Encouragingly, top international researchers, drawn by our passion and commitment, joined us, bringing diverse perspectives and innovative thinking to *MINE*. From its very beginning, the journal embodied an international outlook and a strong academic foundation, setting the stage for a journey filled with endless possibilities.

Growth: ascending the ladder of academic prestige

Over the past decade, *MINE* has consistently prioritized academic excellence. Our editorial board has grown steadily and now includes 76 distinguished scientists from 66 research institutions and universities, with 22% of them being academicians and 58% based overseas. To ensure

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the board remains at the forefront of academia, we make regular adjustments every three years, preserving its vitality and authority. Under the leadership of the editorial board, the journal's academic standards have continually developed, further solidifying its reputation. Through the dedicated cooperation of all editors and research teams, the number of papers published in *MINE* has steadily increased, and their quality has reached new heights. In 2015, we published 40 exceptional papers; by 2024, this figure had grown fivefold to approximately 203. Over the past decade, we have published 934 papers authored by 4608 researchers, with 1058 different corresponding authors. Remarkably, the research papers account for an overwhelming 91.2% of all published content. These academic accomplishments reflect the collective wisdom and contributions of 1140 research institutions from around the world, showcasing the extensive scope of cross-border collaboration. *MINE* covers a wide range of topics within microsystems and nanoengineering, offering both in-depth explorations of fundamental theories and groundbreaking practical applications. These high-quality research findings have attracted the attention of leading research teams worldwide, establishing *MINE* as a preferred platform for many researchers to share their work. This trend not only serves as a strong endorsement of our journal's academic excellence but also acts as a powerful motivation for us to continue striving for even greater achievements. In terms of publishing, we have consistently refined our approach. We've streamlined the review process, improved typesetting quality, and ensured that each article meets our high standards. Every paper published in *MINE* reflects the dedication of our editorial board and team, from the meticulous selection of manuscripts to the careful typesetting and close collaboration with authors. Each step is aimed at achieving the highest level of excellence. *MINE* was selected for the "China Science and Technology Journal Excellence Action Plan" in both 2019 and 2024 and has been recognized as one of "China's Most Internationally Influential Journals" for seven consecutive years. These accolades are a testament to the journal's past achievements and reinforce our commitment to continually improving its quality and supporting scientific innovation.

Communication: fostering a global community of scholars

is not just an academic journal; it serves as a crucial bridge that facilitates collaboration and information exchange among researchers worldwide. To further this mission, we have carefully designed a series of academic activities to promote meaningful academic dialog and foster cooperation across borders.

Our flagship events, such as the *MINE* Summit and the *MINE* Young Scientists' Forum, have become highly

anticipated highlights in the scientific calendar. These gatherings attract researchers from over 30 countries, creating dynamic platforms for in-depth discussions, knowledge sharing, and networking opportunities.

The *MINE* Summit, now in its eighth consecutive year, is the centerpiece of our event calendar. Focused on cutting-edge scientific content, the summit features keynote speeches, panel discussions, and poster presentations by leading experts in the field. With 80% of the speakers being renowned academicians and thought leaders, the summit offers a unique opportunity for participants to engage in the latest research and emerging trends in microsystems and nanoengineering.

The *MINE* Young Scientists' Forum, launched in 2017, has proven especially successful in providing a platform for early-career researchers. This forum allows young scientists to present their work, receive valuable feedback from established experts, and cultivate professional networks. Many attendees have used the forum as a springboard for their careers, with several collaborations emerging from the interactions at this event. The high-quality research shared at the forum has further contributed to the journal's growth, with many papers originating from the forum later being published in *MINE*.

In response to the growing importance of online communication, especially during the global pandemic, *Microsystems & Nanoengineering* launched the *MINE* Frontier Seminar and the *MINE* Authors' Sharing Session between 2020 and 2022. These virtual events attracted a global audience, offering a real-time platform for researchers to share their latest findings and insights. The interactive format, which allowed for audience questions and discussions, fostered a strong sense of community and engagement among participants.

Building on this success, we expanded our online initiatives in 2023 with the launch of the *MINE* Academic Salon. This series of online events focuses on specific topics within microsystems and nanoengineering, providing a space for in-depth discussions and knowledge sharing. The *MINE* Academic Salon has been warmly received, with each session generating lively conversations and attracting a growing number of participants.

In 2024, we introduced the *MINE* Doctoral Forum, which provided doctoral students with an opportunity to present their research and receive valuable feedback from senior researchers. This event met with great enthusiasm, attracting over 60,000 online viewers and helping to identify and nurture the next generation of researchers in the field.

These events have not only fostered the exchange of ideas but also led to the establishment of numerous international collaborations. Many research teams have connected through *MINE* events, initiating joint projects that leverage complementary expertise and resources to tackle

challenging scientific problems. These collaborations have not only advanced the field of microsystems and nanoengineering but have also solidified *MINE*'s reputation as a premier platform for international academic cooperation.

Breakthroughs: pushing the boundaries of scientific knowledge

The core value of academic research lies in its ability to drive social progress and industrial development. In the context of increasing global technological competition, the field of micro/nanosystem technology faces a multitude of significant challenges. *MINE* has taken on the critical responsibility of addressing these issues by organizing special issues and focused topics.

A prime example of this commitment is the 2023 “Microdevices and Microsystems for Brain–Computer Interfaces” special issue. This issue explores Brain–Computer Interfaces (BCIs) as disruptive frontier technologies that integrate life sciences with information technology, driving revolutionary changes in global healthcare and beyond. The special issue emphasizes technological breakthroughs at the device level, highlighting both its academic value and practical relevance.

Due to its substantial contribution, the issue has been recognized as a key achievement in the “Major Projects of the Cross-Science Department of the National Natural Science Foundation of China”. This recognition underscores its global impact in advancing BCI technology and further solidifies its importance in shaping the future of the field.

Impact: shaping the global research landscape

Over the past decade, *MINE* has established itself as a leading journal in microsystems and nanoengineering, earning a growing international reputation and influence. Our commitment to academic excellence, innovation, and global collaboration is reflected in our inclusion in numerous prestigious databases, our high impact factor, and our strong performance in various international rankings.

Currently, *MINE* is indexed in 36 prominent databases, including SCIE, EI, PubMed Central, and CSCD, ensuring our research reaches a wide global audience. Our impact factor has consistently ranked in the Top 1% of the JCR “Instruments & Instrumentation” category, reflecting the high quality and influence of the research we publish. This achievement is a testament to the dedication of our authors, reviewers, and editorial team.

In addition to our impressive impact factor, *MINE* performs strongly in international rankings. We have ranked first among Asian journals in our field for seven consecutive years and consistently remain in the top tier of journals focusing on global micro/nanosystem technology. These rankings underscore our leadership in the

field and our ongoing contribution to scientific advancement.

From a global dissemination perspective, *MINE*'s influence is remarkable. Over the past five years, our cumulative electronic full-text downloads have surpassed 5 million, a figure that stands out among international peers. This extensive reach highlights the significant interest and demand from the global research community for the content we publish. Additionally, *MINE*'s website traffic has grown steadily, attracting hundreds of thousands of visits from major universities and top research institutions worldwide. This growth signals *MINE*'s position as a vital hub for global researchers to stay informed about the latest developments in cutting-edge research.

Microsystems & Nanoengineering's academic influence in the field of instrumentation has been recognized by leading international institutions and organizations. The journal maintains long-term, in-depth collaborations with top academic conferences in four global fields, attracting premier research talent from around the world. On behalf of *MINE*, Professor Cui has also been invited to serve on award committees to evaluate prestigious academic honors. This not only affirms *MINE*'s academic standing but also grants us a significant voice in global academic evaluations. Through this process, *MINE* rigorously selects highly innovative and impactful research, further promoting industry development and bolstering our reputation in the international academic community.

Leadership: driving the cluster toward academic excellence

The sponsoring organization of *MINE* has a broad presence in academic publishing, with nine journals forming a dynamic and comprehensive journal cluster. Within this vibrant ecosystem, *MINE* occupies a central and influential position, leveraging its outstanding strengths to establish itself as a leader. *MINE* consistently upholds high academic standards, embraces an international perspective in its publications, and operates with a professional model, all of which contributes to its exceptional brand image. This successful approach serves as a valuable reference for the entire journal cluster.

From topic selection and manuscript screening to editing and publication, every aspect of *MINE*'s operations reflects rigor and professionalism, setting a model for other journals to follow.

Thanks to *MINE*'s leadership, other journals within the sponsoring organization have entered a new era of growth. These journals, each earning recognition for their academic quality, have been successfully indexed to international authoritative databases such as SCI and EI. This accomplishment not only boosts the overall

influence of the journal cluster but also helps bring research achievements in related fields to the global stage.

Additionally, the success of *MINE* inspires journal editors to continuously pursue excellence. They strive for perfection in academic editing, publication operations, research services, and more. Through their solid professional knowledge and selfless dedication, they have garnered numerous honors. These accolades not only acknowledge individual efforts but also serve as a testament to the collective achievements of the entire team.

Outlook: forging ahead, writing a new chapter of glory

The achievements of the past decade stand as a testament to our efforts and mark a new starting point for future growth. *MINE* faces both exciting opportunities and challenges, but with a clear plan and unwavering determination, we are poised to continue advancing.

To further elevate academic quality, we plan to refine our manuscript review process and intensify efforts to uncover innovative and groundbreaking research. Looking ahead, we will place increased focus on the application of quantum dot nanotechnology in energy storage and conversion. As global demand for clean energy rises, the unique optical and electrical properties of quantum dots show significant promise for breakthroughs in the performance of energy storage devices like batteries and supercapacitors. We expect that researchers will contribute innovative studies on the synthesis, optimization, and device integration of quantum dot materials in *MINE*.

Additionally, the integration of artificial intelligence with micro- and nanotechnology is a key future research direction. Intelligent micro- and nanorobots hold immense potential in fields such as healthcare, environmental monitoring, and industrial manufacturing. We encourage researchers to explore autonomous sensing, decision-making, and execution capabilities in micro- and nanorobots, as well as methods for precise manipulation and collaborative operations in complex environments. We look forward to publishing these innovative findings in *MINE* to accelerate progress in this exciting field.

Regarding academic exchange, we will continue to diversify the forms and content of our events. One initiative is the launch of the “*MINE* International Academic Touring Seminar,” which will visit key research hubs across continents. These seminars will facilitate face-to-face exchanges with local researchers and promote the global sharing of academic resources. Additionally, we

aim to increase the interactivity and participation of our online academic activities, offering researchers more efficient and accessible platforms for exchange.

In terms of journal dissemination, we plan to expand our reach by leveraging emerging media platforms to present complex research in an easily understandable format for the public. This will help raise awareness and interest in microsystems and nanoengineering. Furthermore, we will collaborate with internationally renowned academic dissemination organizations to broaden *MINE*'s global reach, enhancing its influence beyond academia and fostering greater public understanding of the societal significance of microsystems and nanoengineering technologies.

On talent cultivation and team development, we are committed to providing more support to promising young researchers, helping them quickly develop into leaders in their fields. We also plan to strengthen our partnerships with universities and research institutions to establish youth talent training bases, offering practical opportunities and guidance. In parallel, we aim to continuously enhance the professionalism and service level of our editorial team, ensuring we maintain a highly efficient and professional workforce that supports the journal's continued success.

In conclusion, with the collective efforts of researchers worldwide, *MINE* will continue to thrive and make even greater contributions to advancing the field of microsystems and nanoengineering on a global scale. Let us move forward together, embarking on this new journey and co-authoring an even more glorious chapter in the future of *MINE*!

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