



Editorial

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Launching of a special column on the “Top 10 Academic Advances of Young Scholars at Zhejiang University”

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Zhejiang University is home to 1700 young faculty members and scholars, who serve as the backbone driving the university’s future academic innovation and development. To foster the growth and academic progress of these young scholars, the Academic Committee of Zhejiang University launched the “Top 10 Academic Advances of Young Scholars at Zhejiang University” project in January 2023. This initiative aims to highlight and promote significant research achievements by young scholars across various fields, steering them towards a vision of “quality, excellence, greater respect, and loftier pursuits,” and encouraging them to become leaders in their disciplines.

In October 2023, the Academic Committee of Zhejiang University evaluated 18 nominated projects, each recommended by different academic divisions (Academic Committee of Zhejiang University, 2023a). The nominated projects were led by Zhejiang University’s young scholars or conducted in collaboration with international or domestic partners, with all results published in 2022 (Academic Committee of Zhejiang University, 2023b). The candidates were recommended by seven academic divisions, the Office of SciTech Research, the Academy of Humanities and Social Sciences, or relevant experts. After expert evaluation, the committee selected the “Top 10 Academic Advances of Young Scholars at Zhejiang University in 2022,” including the following projects: “Key Technologies for High Spatiotemporal Resolution Magnetic Resonance Imaging,” “High-Performance Injection Molding Technology and Applications of Super Engineering Polymers,” “Hypothalamus-Lateral Habenula Synaptic

Enhancement Encoding Chronic Stress-Induced Depression,” “Hyperspectral X-ray Imaging Based on Novel Stacked Detectors,” “Efficient and Multifunctional Organic Photovoltaic Devices and Applications,” “Digital Quantum Simulation of Topological Time Crystals,” “Regulation Mechanisms of Autophagy,” “Interbacterial Interaction Mechanisms and Applications of Biocontrol Agents and Fungal Pathogens,” “Self-Regulated Learning Mechanisms in Second Language Writing from a Multidimensional Dynamic Perspective,” and “New Nanosilicon Materials for Carbon Conversion and Synaptic Devices.”

Since 2023, the Academic Committee of Zhejiang University has partnered with Zhejiang University Press to establish a special column in the *Journal of Zhejiang University* titled “Top 10 Academic Advances of Young Scholars at Zhejiang University.” This column serves as an important platform for young scholars to showcase their latest research achievements across 10 key fields related to the awarded projects, while also fostering interdisciplinary collaboration and academic exchange. The selected scholars and their teams authored 10 related review articles, which have been included in this year’s special column after rigorous peer review (Ba et al., 2024; Barone et al., 2024; Fan et al., 2024; Guo et al., 2024; Huang et al., 2024; Lai and Yang, 2024; Teng et al., 2024; Wang and Zuo, 2024; Yao and Wang, 2024; Zhang et al., 2024).

These papers, featured in *Journal of Zhejiang University-SCIENCE A (Applied Physics & Engineering)*, *Journal of Zhejiang University-SCIENCE B (Biomedicine & Biotechnology)*, and *Journal of Zhejiang University (Humanities and Social Sciences)*, provide comprehensive reviews of the literature and summarize the latest research progress across 10 key areas. These fields include time-dependent diffusion

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magnetic resonance imaging, polyether ether ketone and its composites, lateral habenula neural circuits, halide perovskite semiconductors, organic photovoltaic devices, superconducting digital quantum simulation, autophagy, bacteria–bacteria interactions within the plant microbiota, two-dimensional boron, and second language self-regulated learning. Each review article not only analyzes key issues but also offers valuable insights for future research.

Zhejiang University has been committed to supporting the development of its young scholars, offering ample academic resources and opportunities for exchange to ensure their continued success. We extend our deepest appreciation to the young scholars who contributed to this special column, as well as to Huaxin HUANG, Minjie ZHU, and Feihua LU at the Academic Committee Secretariat, and Chaofu CHU and Jiaying XU from the Zhejiang University Press. We also express our sincere thanks to all the experts and peers who supported this project. We look forward to more outstanding research results being featured through this platform, contributing fresh ideas to the academic forefront.

References

- Academic Committee of Zhejiang University, 2023a. Notice on the Announcement of the Selection Results of “Top 10 Academic Advances of Young Scholars at Zhejiang University in 2022” (in Chinese). <http://ac.zju.edu.cn/2023/1011/c16467a2811277/page.htm>
- Academic Committee of Zhejiang University, 2023b. Notice on the Selection of “Top 10 Academic Advances of Young Scholars at Zhejiang University in 2022” (in Chinese). <http://ac.zju.edu.cn/2023/0714/c16467a2783616/page.psp>
- Ba RC, Kang LY, Wu D, 2024. Time-dependent diffusion magnetic resonance imaging: measurement, modeling, and applications. *Journal of Zhejiang University-SCIENCE A (Applied Physics and Engineering)*, 25(10):765-787. <https://doi.org/10.1631/jzus.A2400139>
- Barone GD, Zhou YQ, Wang HK, et al., 2024. Implications of bacteria–bacteria interactions within the plant microbiota for plant health and productivity. *Journal of Zhejiang University-SCIENCE B (Biomedicine & Biotechnology)*, in press. <https://doi.org/10.1631/jzus.B2300914>
- Fan SY, Chen YC, Yao WJ, et al., 2024. Energy deprivation-induced autophagy and aggrephagy: insights from yeast and mammals. *Journal of Zhejiang University-SCIENCE B (Biomedicine & Biotechnology)*, in press. <https://doi.org/10.1631/jzus.B2300884>
- Guo ZC, He JJ, Gao RX, et al., 2024. Molding of polyether ether ketone (PEEK) and its composites: a review. *Journal of Zhejiang University-SCIENCE A (Applied Physics and Engineering)*, 25(10):788-823. <https://doi.org/10.1631/jzus.A2400004>
- Huang TD, Guo XN, Huang XM, et al., 2024. Input-output specific orchestration of aversive valence in lateral habenula during stress dynamics. *Journal of Zhejiang University-SCIENCE B (Biomedicine & Biotechnology)*, in press. <https://doi.org/10.1631/jzus.B2300933>
- Lai YB, Yang Y, 2024. Advances in halide perovskite semiconductors for energy-integrated and energy-resolved X-ray detection. *Journal of Zhejiang University-SCIENCE A (Applied Physics and Engineering)*, 25(10):824-840. <https://doi.org/10.1631/jzus.A2300660>
- Teng L, Yang YX, Zhang YY, et al., 2024. Self-regulated learning in second language education: a synthesized method of bibliometrics and scoping review. *Journal of Zhejiang University (Humanities and Social Sciences)*, 54(4):145-160 (in Chinese). <https://doi.org/10.3785/j.issn.1008-942X.CN33-6000/C.2024.01.048>
- Wang YM, Zuo LJ, 2024. High-performance and multifunctional organic photovoltaic devices. *Journal of Zhejiang University-SCIENCE A (Applied Physics and Engineering)*, 25(10):841-853. <https://doi.org/10.1631/jzus.A2400015>
- Yao YY, Wang Z, 2024. Near-term applications of superconducting digital quantum simulation. *Journal of Zhejiang University-SCIENCE A (Applied Physics and Engineering)*, 25(10):854-876. <https://doi.org/10.1631/jzus.A2400397>
- Zhang DK, Zhang CC, Wang SH, et al., 2024. Emerging applicability of two-dimensional boron for energy catalysis. *Journal of Zhejiang University-SCIENCE A (Applied Physics and Engineering)*, 25(10):877-888. <https://doi.org/10.1631/jzus.A2400003>