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# Editorial of special issue on OISE major jointly established by Tianjin University and Nankai University

On the occasion of the 20th anniversary of the founding of *Chinese Optics Letters*, the Optoelectronic Information Science and Engineering (OISE) major, jointly established by Tianjin University and Nankai University, has also reached its twenty-year mark. Based on the guidance of the Ministry of Education (MoE) and with the philosophy of independent education and close cooperation between the two universities, full use has been made of their advanced teaching, scientific research, and experimental theories and related resources. This relationship has complemented each university's advantages, jointly establishing the Optoelectronic Technology Science major and recruiting students from throughout the country since 2003. In 2012, the MoE uniformly adjusted the professional name to Optoelectronic Information Science and Engineering.

The establishment of this joint major has received the care and support of Professor Guoguang Mu of Nankai University and former Vice President Daoyin Yu of Tianjin University. As an authoritative figure in the field of optics, Professor Mu has a deep understanding of and insights on the progression of this major. He has guided the formulation of the curriculum for this major and has revised its teaching plan and syllabus. President Yu has a strong sense of mission and responsibility for cultivating outstanding talent. It is under their guidance that the OISE major has thrived and fostered the talents of a large number of outstanding students, many of whom have matriculated into the world's top universities, such as the Massachusetts Institute of Technology, Stanford University, and Princeton University, to continue their study. Their entrance into institutions of such renown is an affirmation of OISE alumni's ability and potential.

The guest editors interviewed Professor Shengjiang Chang, the first person in charge of the OISE major. He has written the preface to the special issue.

"I would like to thank the Chinese Laser Press for commemorating the 20th anniversary of the establishment of the OISE major between Nankai University and Tianjin University in the form of a special issue.

As the first person in charge of the major, I feel very happy and gratified. The publication of this special issue is not only a full affirmation and praise of the personal training and scientific research work of this major but also a promotion of academic research in the field of optoelectronics.

The 20th anniversary of the OISE major is a milestone worth celebrating. Its development cannot be separated from the care and support of the older generation of scientists and educators, such as Professor Guoguang Mu and President Daoyin Yu, as well as the efforts of the leaders of the major and the Tianjin and Nankai university students. In the coming days, the major will continue to cultivate more outstanding talents, continue to cooperate with domestic and foreign research institutions and universities, promote the innovation and application in the fields of optical engineering and optoelectronic technology, and make greater contributions to the development of China's science and technology and to the training of top innovative talent."

As Professor Chang said, "This special issue includes the latest research results of outstanding OISE alumni and teachers in the field of optoelectronics, demonstrating the academic achievements and progress of the major over the past 20 years. I hope this special issue can provide a platform for scholars engaged in optoelectronic technology research to exchange and discuss their ideas."

In Ref. [1], Jia *et al.* demonstrate the powerful feasibility of the double-phase hologram algorithm in shaping structured light beams and multiphoton parallel additive manufacturing with single phase-only spatial light modulators.

In Ref. [2], Tan *et al.* review the advantages and applications of four state-of-the-art 2D materials, including graphene, TMDCs, BP, and hBN on photonics devices, further summarizing and analyzing their individual electronic and optical properties in detail.

In Ref. [3], Chen *et al.* present an all-fiber $LP_{41}$ mode converter by tapering a nine-core single-mode fiber bundle, which indicates that this converter has the characteristics of low loss, high purity, and ultra-broadband.

In Ref. [4], Zhou *et al.* present a sorting-atom algorithm with maximum parallelisms to fast build a large-scale quantum system.

In Ref. [5], Deng *et al.* present an AI-assisted multi-target processing system for cell identification and sorting. With this system, each target cell can be swiftly and accurately identified in a mixture by extracting cell morphological features.

In Ref. [6], Han *et al.* present a brief review of the core-anti-resonant reflection (CARR) mechanism, which could result in the broadband THz transmission along a hollow-core tubular structure.

In Ref. [7], Guo *et al.* experimentally elaborate the effects of turbulence on the spatial distribution of femtosecond laser filaments in atmosphere, benefiting the future study of its application in remote sensing.

In Ref. [8], Ma *et al.* review the recent advances in terahertz chiral and special detection methods, micro-structured sensors, and systems for biochemical sensing, aiming to develop THz chiral spectroscopy and specific sensing.

In Ref. [9], Shi *et al.* develop an inverse design approach for fabricating a terahertz multilevel diffractive lens using 3D printing to address the limitations of conventional lenses, such as chromatic aberration.

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**Guest Editors:**
Prof. Zhen Tian, tianzhen@tju.edu.cn
Tianjin University, China
Prof. Fei Fan, fanfei@nankai.edu.cn
Nankai University, China
Prof. Minglie Hu, huminglie@tju.edu.cn
Tianjin University, China
Prof. Weiwei Liu, liuweiwei@nankai.edu.cn
Nankai University, China

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