PHOTONICS Research

For a good cause: a commemorative editorial on the 10th anniversary of *Photonics Research*

ZHIPING (JAMES) ZHOU

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At the 10th anniversary, founding Editor-in-Chief Zhiping (James) Zhou reflects on the early thoughts and activities regarding the establishment of *Photonics Research*.

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Congratulations on the 10th anniversary of *Photonics Research*! I vividly remember the days when leaders from Optica (formerly OSA) and Chinese Laser Press met in China to negotiate and sign an agreement on a joint journal. During that time, I was thinking very hard to come up with a good name (as many good names were already taken by numerous optics and photonics related journals), defining the scope and topics for the new journal, recruiting the inaugural associate editors, reaching out to potential authors who were willing to publish in a journal without an impact factor, and laying out a strategy for working together with other related journals.

This hard work was worthwhile since the establishment of the new journal was for a good cause: serving as a new international platform for researchers to share advances in optics and photonics, particularly, by disseminating fundamental and applied research progress primarily from Chinese authors. The original scope for the journal spans from fundamental properties of light and its interactions with matter to the latest developments in optoelectronic devices. It also includes emerging physics and applications involving quantum information, nanophotonics, and ultrafast phenomena, to name just a few.

While some of the aforementioned tasks were short termed, keeping the journal on the right track and attracting the proper influential authors, editors, and reviewers is a long-term job for the Editor-in-Chief. To sustain the journal for a long time, I believed the scope and topics should focus on fundamental and applied research, such as fundamental properties of light, light–matter interactions, and photon–electron interactions.

What are the fundamental properties of light? How can light be used to deepen our understanding of the universe? These questions are easy to pose, but also easy to be ignored. The Editor-in-Chief is charged with keeping the journal on a successful path.

Light is considered as coupled electric and magnetic fields, propagating through space as a traveling wave, and exhibits the characteristics of discrete packets of energy, called photons, demonstrating wave–particle duality. Therefore, the fundamental properties of light should be able to describe both the wave and the particles, which include reflection, refraction, diffraction, interference, polarization, etc. Traditional methods to study these properties were mostly ray tracing, while modern researchers are trying to understand the physics behind the phenomena, for example, why particles show diffraction.

The light-related phenomena we observe are results of light–matter interactions. Therefore, fundamental research aims to understand how light interacts with matter, how light interacts with molecules and atoms of matter, how photons of incoming light interact with electrons in atoms, and how to utilize these interactions to help human beings discover and enrich their understanding of the universe.

On the other hand, based on classical quantum mechanics, all light-related products are based on photon–electron interactions, commonly known as optoelectronic devices or systems. Emerging disciplines, such as silicon-based optoelectronics (SBO), have attracted significant attention, not only in research labs, but also at top conferences and journals. Therefore, applied research may need to pay more attention to optoelectronic devices and systems to drive new products and enable new applications.

Under the "dual" management of the publishers, Optica Publishing Group and Chinese Laser Press, I am very happy to witness *Photonics Research* following a successful path, sailing through its difficult infant stage, and thanks to the authors, reviewers, editors, journal staff members, and particularly the diehard support of the research community, the journal's reputation and influence keeps rising as more people around the world talk about, praise, and submit their work to *Photonics Research*. It has become a top journal choice for rapid, peer-reviewed publication of high-quality research from China and throughout the world.

It is my sincere hope that *Photonics Research* will continue the good cause to serve the needs of the international research community of optics and photonics, including optoelectronics.

Zhiping (James) Zhou
Founding Editor-in-Chief, *Photonics Research*
Peking University