

## Special Issue

# Photonic Enabled Neural Network: Key Components, Heterogeneous Architecture and Intelligent Applications

### Message from the Guest Editors

The development of novel computing hardware and architecture is of great strategic and economic significance to the leap-forward progress of artificial intelligence technology in the post-Moore era, and photonic enabled neural networks have become the disruptive path for future computing architecture due to their huge advantages in terms of processing speed and power consumption. In recent years, various integrated photonic neural networks, based on MZIs or microring resonators, have been proposed to accelerate the matrix operations. In addition, photonic computing architecture including convolutional neural networks, recurrent neural networks, and programmable reservoir computing systems are riding the wave of implementing large-scale intelligent applications such as vision, voice, and natural language classification. The purpose of this Special Issue is to highlight the progress in photonic-enabled neural networks, including key components, heterogeneous architectures, and intelligent applications. We believe that photonic involvement will foster new technologies for disruptive computing devices and architecture.

---

### Guest Editors

Prof. Dr. Weiwen Zou

Prof. Dr. Zhi Wang

Dr. Wenjia Zhang

---

### Deadline for manuscript submissions

closed (15 February 2022)



## Photonics

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.1  
CiteScore 2.6



[mdpi.com/si/92716](https://mdpi.com/si/92716)

*Photonics*

MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[photonics@mdpi.com](mailto:photonics@mdpi.com)

[mdpi.com/journal/  
photonics](https://mdpi.com/journal/photonics)





# Photonics

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.1  
CiteScore 2.6



[mdpi.com/journal/  
photonics](https://mdpi.com/journal/photonics)



## About the Journal

### Message from the Editor-in-Chief

You are invited to contribute a research article or a comprehensive review for consideration and publication in *Photonics* (ISSN 2304-6732). *Photonics* is an online open access journal covering both the fundamental and applications of optics and photonics. *Photonics* strives to provide an avenue to allow authors to disseminate their scientific findings—both theoretical/ simulations and experimental works—in highly accessible peer-reviewed journal publications. The manuscript in *Photonics* will be handled with quick turnaround production processing time. We welcome authors to submit their manuscripts for publications in *Photonics*. Our goal in *Photonics* is to enable fast dissemination of high impact works to the scientific community.

---

### Editor-in-Chief

Prof. Dr. Nelson Tansu

School of Electrical and Electronic Engineering (EEE), The University of Adelaide, Adelaide, SA 5005, Australia

---

### Author Benefits

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, Ei Compendex, CAPlus / SciFinder, and other databases.

#### Journal Rank:

JCR - Q2 (Optics)

#### Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 14.9 days after submission; acceptance to publication is undertaken in 1.9 days (median values for papers published in this journal in the second half of 2024).