



## Call for Papers

Announcing a Special Issue of the  
*IEEE Journal of Selected Topics in Quantum Electronics* on  
**Integrated Optoelectronics for VR/AR/MR**

Submission Deadline: **June 1, 2023**  
Hard Copy Publication: March/April 2024

The IEEE Journal of Selected Topics in Quantum Electronics (JSTQE) invites manuscript submissions in Integrated Optoelectronics for Virtual Reality/Augmented Reality/Mixed Reality (VR/AR/MR) systems. VR/AR/MR devices provide a platform of basic infrastructure for the next-generation human-computer interfaces. Integrated Optoelectronics for VR/AR/MR technologies plays an essential role in improving the performance and reducing the size/volume/weight/power consumption for VR/AR/MR systems, and it has become a hot research topic in recent years. Advancing this multi-disciplinary research topic requires scientific understanding and technological innovation across a broad range of interdisciplinary fields ranging from optics, electronics, computing, materials, and ergonomics, as well as applications in diverse areas from industry, medicine to daily life. The goal of this special issue is to provide an overview of the ongoing progress and trends in advancing the technologies and novel applications of Integrated Optoelectronics for VR/AR/MR systems. Areas of interest include (but are not limited to):

<b>VR/AR systems</b> <ul style="list-style-type: none"><li>Biocular/binocular optics</li><li>Foveated displays</li><li>Head-up displays</li><li>Laser scanning and retinal displays</li><li>Light field and holographic displays</li><li>Near-eye/head-mounted displays</li><li>Vari-focal/multi-focal/zoom systems</li></ul> <b>Human factors and perception</b> <ul style="list-style-type: none"><li>Color uniformity and brightness uniformity</li><li>Ergonomics/human factors/cybersickness</li><li>Integration of prescription/vision correction</li><li>Large eyebox</li><li>Occlusion support</li><li>Wide field of view</li></ul>	<b>Key components</b> <ul style="list-style-type: none"><li>Aspherical/Fresnel/catadioptric/freeform optics</li><li>Beam splitting films</li><li>Compact projection engines</li><li>Diffraction/nano optics</li><li>Microdisplay/medium-sized display devices</li><li>Transparent/see-through display devices</li><li>Waveguide solutions</li></ul> <b>Related optical technologies</b> <ul style="list-style-type: none"><li>Eye/gaze tracking</li><li>Design and simulation methods</li><li>Metrology/measurement/benchmark/standardization</li><li>Optical manufacture technologies</li></ul> <b>Applications in different areas</b>
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**Primary Guest Editors:** Dewen Cheng, Beijing Institute of Technology, China  
Yongtian Wang, Beijing Institute of Technology, China

**Guest Editors:** Daping Chu, University of Cambridge, UK  
Hong Hua, University of Arizona, USA  
Jae-Hyeung Park, Inha University, Korea  
Shin-Tson Wu, University of Central Florida, USA

**Website submissions:** ScholarOne Manuscripts: <http://mc.manuscriptcentral.com/jstqe-pho>

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The following documents are required: PDF or MS Word manuscript (double column format, up to 12 pages for an invited paper, up to 8 pages for a contributed paper). Manuscripts over the standard page limit will have an overlength charge of \$220.00 per page imposed. Biographies of all authors are mandatory, photographs are optional. See the Tools for Authors link: [www.ieee.org/web/publications/authors/transjnl/index.html](http://www.ieee.org/web/publications/authors/transjnl/index.html)