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Journal launch: Welcome to *Opto-Electronics Plus*

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Optics and electronics, the twin engines of modern technology, have continuously propelled technological revolutions, transforming scientific principles into tools that redefine industries and improve human lives. From the photonic integrated circuits enabling high-performance computing to the photovoltaic cells powering sustainable energy grids, opto-electronic technologies permeate every facet of modern society.

The integration of opto-electronics with other disciplines has unlocked unprecedented possibilities. The development of fiber optics revolutionized the global communication, while the invention of light-emitting diodes transformed lighting and display technologies. In materials science, advances in photonic crystals and metamaterials have unlocked new possibilities for electromagnetic wave manipulation. The rise of integrated photonic circuits now promises to address the growing demands of data centers, offering faster data transmission with reduced energy consumption. Meanwhile, in energy systems, perovskite-based photovoltaics and opto-electrochemical storage devices are paving the way toward decarbonized power grids. In manufacturing, laser precision and optical sensing revolutionize production processes, and in biomedicine, advanced imaging techniques illuminate the mysteries of life at the cellular even molecular level. These examples illustrate how opto-electronics serves as a unifying thread across disciplines, enabling innovations that address both technological and societal needs.

Yet, the path from discovery to applications is fraught with challenges. In materials science, researchers grapple with the stability and scalability of next-generation opto-electronic materials, such as lithium niobate thin films and two-dimensional semiconductors. For information technologies, integrating photonic and electronic components on a single chip requires breakthroughs in thermal manage-

ment and heterogeneous architectures. Energy applications must balance efficiency gains with stability. In manufacturing, the precision of laser-based tools must meet the dual demands of nanoscale fabrication and industrial-scale production. Addressing these challenges demands collaboration across disciplines—uniting physicists, chemists, engineers, and data analysts to develop holistic solutions.

Today, as global challenges demand interdisciplinary solutions, *Opto-Electronics Plus* (OEP) emerges as a dedicated platform to explore the diverse applications of optics and electronics across materials science, information technology, energy systems, sensing, biomedicine, and advanced manufacturing. *Opto-Electronics Plus* is guided by a distinguished Editorial Board of global leaders, the journal is committed to rigorous peer review and the rapid dissemination of high-impact research. It benefits from the strong support of its sister journals, *Opto-Electronic Advances* (OEA) and *Opto-Electronic Science* (OES).

As an open-access journal, *Opto-Electronics Plus* will publish cutting-edge research Articles, Reviews, and Letters, with a scope spanning information technology, energy solutions, materials innovation, advanced manufacturing, sensing and imaging, biomedicine, and interdisciplinary synergies.

We invite researchers worldwide to contribute to *Opto-Electronics Plus*—a dynamic platform where light, electrons, and multidisciplinary innovation converge. Together, let us illuminate the path toward a future empowered by the limitless potential of opto-electronics.



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