

Special Issue

Materials and Applications of Photonic and Optoelectronic Devices

Message from the Guest Editors

Advances in photonic and optoelectronic materials are enabling a new generation of devices capable of controlling light with exceptional precision and efficiency. These materials—ranging from traditional semiconductors like silicon and gallium arsenide to emerging options such as perovskites, quantum dots, and two-dimensional materials—enable light generation, modulation, and detection across a broad spectrum. Their integration into compact, high-speed systems is transforming fields such as optical communication, biomedical imaging, environmental sensing, and quantum information technologies. A major challenge lies in translating material-level innovations into scalable applications that remain stable under real-world conditions, including thermal fluctuations, mechanical stress, and electromagnetic interference. Addressing this requires both advanced fabrication techniques and deeper insights into nanoscale light–matter interactions. This Special Issue of *Applied Sciences* welcomes original research articles, communications, and reviews on the synthesis of organic and metal-based complexes and materials for current or potential photonic and optoelectronic applications.

Guest Editors

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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