Special Issue

Advances in Photonics

Message from the Guest Editor

Symmetry-related properties in condensed matter systems provide the foundation of photonics for controlling lightwaves in optical communications and signal processing. Electro-optic effect of ionic atoms in non-centrosymmetric dielectric crystal and electro-refraction effect in centrosymmetric crystalline silicon, for instance, have been key items for optical signal generation in high-speed optical communications. The nonreciprocal magneto-optic effect plays essential roles in the magneto-optical memory in storage and computing and the optical isolator in laser application. Photonic integration platforms on silicon and III-V semiconductors enable versatile optoelectronic circuits in ultrasmall footprints. Further, the photonic integration platforms allow photonic devices consisting of artificial structures such as photonic crystals, metamaterials and plasmons which reveal topological effects in the propagation of lightwaves, which will open up a new arena in photonics.

Guest Editor

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Editor-in-Chief

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