

Special Issue on Advances in Photonic Crystals

Photonic crystals are composed of periodic dielectric or metallo-dielectric nanostructures that affect the propagation of electromagnetic waves (EM) in the same way as the periodic potential in a semiconductor crystal affects the electron motion by defining allowed and forbidden electronic energy bands. Essentially, photonic crystals contain regularly repeating internal regions of high and low dielectric constant. Photons (behaving as waves) propagate through this structure - or not - depending on their wavelength. Wavelengths of light that are allowed to travel are known as modes, and groups of allowed modes form bands. Disallowed bands of wavelengths are called photonic band gaps. This gives rise to distinct optical phenomena such as inhibition of spontaneous emission, high-reflecting omni-directional mirrors and low-loss-waveguiding, amongst others.

Since the basic physical phenomenon is based on diffraction, the periodicity of the photonic crystal structure has to be of the same length-scale as half the wavelength of the EM waves i.e. ~350 nm (blue) to 700 nm (red) for photonic crystals operating in the visible part of the spectrum - the repeating regions of high and low dielectric constants have to be of this dimension. This makes the fabrication of optical photonic crystals cumbersome and complex.

In this special issue, we intend to invite front-line researchers and authors to submit original research and review articles on exploring Advances in **Photonic Crystals**.

Authors should read over the journal's [Author's Guidelines](#) carefully before submission, Prospective authors should submit an electronic copy of their complete manuscript through the journal [Paper Submission System](#).

Please kindly notice that the “**Special Issue**” under your manuscript title is supposed to be specified and the research field “**Special Issue-Advances in Photonic Crystals**” should be chosen during your submission.

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