
Photonic Fiber and Crystal Devices: Advances in Materials and Innovations in Device Applications XIII

This conference has an open **call for papers**:

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Important Dates

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Abstract Due:
30 January 2019

Author Notification:
8 April 2019

Manuscript Due Date:
17 July 2019

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Call for Papers

The Photonic Fibers and Crystal Devices Conference aims to establish a well-defined forum with focus on innovations of photonic, optoelectronic, and optical devices that depend essentially on advancement in materials processing, optical and photonic property, wave mixing, and photorefractive phenomena. This conference is a continuation of the successful SPIE conferences on Photorefractive Fiber and Crystal Devices with strengthened topics on crystal growth of nonlinear optic materials. The scope of applications this conference encompasses covers a broad range from components to systems architectures in optical signal processing, optical storage, optical networks and communications, and photorefractive material-based novel photonic devices. The objective of this conference is to promote scientific interaction that bridges advancement in photonic fibers and bulk crystal materials with innovations in photonic technology and device development.

Sessions will focus on the latest achievements on both photonic materials and device technologies that can lead to further advances in the communication, sensing, data storage, display, biomedical, and defense applications. The status and future challenges in these areas also will be reviewed by invited speakers.

Authors are encouraged to submit papers addressing the following session topics:

Photonic Fibers and Crystal Materials



- novel photorefractive, electro-optic, and nonlinear optical fibers and crystals including glasses, semiconductors, ferroelectrics, polymeric, and magneto-optic materials
- crystal growth, defect and doping control, quasi phase matching and domain manipulation
- photonic fibers, 2 and 3-dimensionally engineered photonic crystal, and photonic bandgap materials
- photosensitivity and spectral responses, physical and optical characterizations
- experiments and theory that elucidate correlations between materials doping and defect-structure with photonic properties
- chalcogenide photonics
- hollow-core photonic crystal fiber design and applications
- polarization maintaining photonic crystal fiber designs and applications
- progress in high peak power capable photonic fibers
- work on understanding the fundamental mechanisms on photodarkening in fibers along with process and design improvements to reduce photodarkening effects
- advances in software for the design and simulation of photonic fibers and photonic fiber based systems.

Photonic Devices and Applications

- components for optical communication, sensing, and data storage, including transmission, amplification, modulation, detection, dispersion management, switching, data handling, and packaging
- integrated optical components, nonlinear frequency converters, diffractive devices, three-dimensional optical memory, and dynamic memories
- dynamic sensing for chemical, harsh environment, biophotonic, and defense applications
- adaptive optical devices utilizing coupled effects such as electro-optic, elasto-optics, photostriction, magneto-optics, and pyro-optics
- novel free-space and waveguiding optical components, devices and subsystems including supercontinuum lasers for photonic computing, optomechanics, interconnects, switching, and packaging of photonic processors
- analog and digital holographic data storage, holographic miniaturization of functional mapping, holographic image amplification, volume holographic imaging, 3D imaging and display
- photonic bandgap switches and modulation-based switching devices
- photonic devices for energy conversion and harvesting
- electromagnetics (nonlinear phenomena and propagation of light in nonlinear crystals/optical media)
- crystalline fiber lasers.

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