Guest Editorial Special Issue on Advances in Fiber Optic Sensing Technologies

FIBER optic sensors have contributed a huge market for sensing some quantity, typically temperature or mechanical strain, and even for displacements, vibrations, pressure, acceleration, rotations, or concentrations of chemical species. The application in defense and engineering remains the largest market for fiber optic sensors (FOSs). The success of the bulk fiber optic sensor has greatly motivated the success of new types of fiber sensors, especially nanophotonics, biodiagnostics, and biophotonics.

The novel FOS sensors have been updated quickly in recent years. The ideas are proposed based on the advanced developments of new functional materials, new fabrication techniques, and new photonic structures. The collection of all the updated achievements will supply more sparks and opportunities to academics and industries. This IEEE SENSORS JOURNAL's Special Issue "Advances in Fiber Optic Sensing Technologies" aims to develop mutual collaborations and network opportunities in the IEEE SENSORS JOURNAL to support the field both in research, application, commercialization, and perhaps most importantly training the next generation of young researchers and leaders. Finally, ten papers have been accepted in this Special Issue of the IEEE SENSORS JOURNAL, which present the state-of-the-art in Advances in Fiber Optic Sensing Technologies including fiber optic chemical, gas, biological, environmental, and medical sensors; physical, mechanical, acoustic, and electromagnetic sensors; micro- and nanostructured fiber sensors; new fibers and photoelectric devices; sensor interrogation techniques; multiplexing and networking of fiber optic sensor; and novel concepts for fiber optic sensing.

Fiber optic sensing technologies have always been developing as a prospective technology for applications in various fields. Monfared *et al.* proposed a quasi-D-shaped fiber optic plasmonic biosensor for high-index analyte detection. Chu *et al.* analyzed the influence of subpeak of secondary surface plasmon resonance onto the sensing performance of a D-shaped photonic crystal fiber sensor. Ma *et al.* developed a highly sensitive optical fiber interferometer sensor for acoustic emission detection of partial discharge in power transformer. Thathachary *et al.* investigated polymer waveguides for improved sensitivity in fiber Fabry–Perot ultrasound detectors. Yang *et al.* proposed the polydimethylsiloxane coated fiber optic for all fiber temperature sensing based on the multi-thin-multi-fiber structure. Kumar *et al.* developed a highly sensitive, selective, and portable sensor probe using a Germanium-doped photosensitive optical fiber for ascorbic acid detection.

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