Special Issue

Advancements in Fire Detection Technologies: Innovations for Extreme Environments

Message from the Guest Editor

Fire detection in extreme conditions presents unique challenges that require specialized sensor technologies capable of operating effectively under harsh environmental circumstances, such as in high temperatures, dense smoke, fluctuating humidity, and with volatile chemical compositions. To address these challenges, cutting-edge sensing technologies are being integrated into early fire detection systems, particularly in environments prone to rapid fire spread and limited accessibility. These systems must incorporate advanced sensor modules, distributed heat sensors, and chemical detectors designed to withstand intense environmental stress while ensuring consistent and accurate performance. Highly accurate, air pollution sensors can enhance early warning capabilities and provide timely alerts in hazardous conditions. This Special Issue aims to explore the latest advancements in fire detection technologies, highlighting innovations tailored to extreme environments and discussing the future trajectory of intelligent, resilient, and affordable fire sensing solutions. For more details, please visit here.

Guest Editor

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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