



Special Issue Reprint

State-of-the-art Laser Gas Sensing Technologies

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Trace gas sensing technologies are widely used in many applications, such as environmental monitoring, life science, medical diagnostics, and planetary exploration. On the one hand, laser sources have developed greatly due to the rapid development of laser media and laser techniques in recent years. Some novel lasers such as solid-state, diode, and quantum cascade lasers have experienced significant progress. At present, laser wavelengths can cover the range from ultraviolet to terahertz, which could promote the development of laser gas sensing technologies significantly. On the other hand, some new gas sensing methods have appeared, such as photothermal spectroscopy and photoacoustic spectroscopy. Laser spectroscopy-based gas sensing techniques have the advantages of high sensitivity, non-invasiveness, and allowing in situ, real-time observation. Due to the rapid and recent developments in laser source as well as the great merits of laser spectroscopy-based gas sensing techniques, this book aims to provide an updated overview of the state-of-the-art laser gas sensing technologies.



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