

Special Issue

Recent Advances in Photoacoustic and Photothermal Gas Spectroscopy

Message from the Guest Editors

The growing interest in developing photoacoustic and photothermal sensors is widely justified by the possibility of avoiding the use of optical detectors while exploiting the high selectivity provided by the spectral characteristics of laser sources. Moreover, these spectroscopic approaches proved to be highly compatible with the engineering and downscaling of sensing devices. So far the developed gas sensor prototypes have promptly satisfied the requests for portability and deployability for out-of-laboratory operations, but now they are called to sustain a further evolution. The challenges posed by the technology and applications market consist in a high level of integrability, miniaturization and compaction, modularity, and versatility for detecting different analytes and working in harsh environments. Furthermore, the sensors must be easy to be integrated into pre-existing measurement tools and immune to external noise at the same time. It is our hope that all the articles collected in the Special Issue will provide useful guidelines for spectroscopists to identify suitable solutions for in-situ and real-time applications.

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