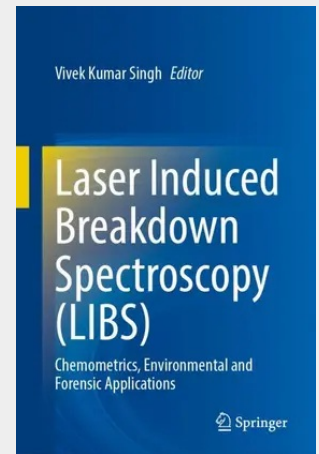


Laser Induced Breakdown Spectroscopy (LIBS)

Chemometrics, Environmental and Forensic Applications

This book provides a comprehensive overview of the latest applications of laser-induced breakdown spectroscopy (LIBS) in the environmental and forensic sciences along with chemometric methods. Environmental and forensic science increasingly requires multidisciplinary scientific methods, and LIBS has proven itself a more sensitive and user-friendly technology that can meet the demands of these fields. In addition, LIBS coupled with chemometric modeling approaches creates a powerful tool for detecting and quantitatively predicting the chemical composition of a variety of samples. As a result, this book consolidates essential developments in LIBS, data analysis using chemometrics, and breakthrough applications in environmental and forensic sciences. Beginning with an introduction of the principles of LIBS, the reader is then guided through field and sample-specific applications. An overview of LIBS-Raman instrumentation from basic to more advanced set-ups is also included. The analytical capabilities of the methods in terms of detection limits, accuracy, and precision of measurements for forensic and environmental samples is specifically covered. This book effectively translates the latest developments in algorithms for spectroscopic data and interpretation into these fields. Highlighting the utility of LIBS in environmental and forensic sciences, this book is an essential text for researchers well versed in the fields and as well as readers wanting to familiarize themselves with LIBS as a whole.

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