

ACCEPTED PAPER

Journal:Â ISRN Spectroscopy

Paper: Laser Induced Breakdown Spectroscopy; fundamentals, applications and challengesÂ

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Abstract: Laser-induced breakdown spectroscopy (LIBS) is a technique that provides an accurate in situ quantitative chemical analysis, and, thanks to the developments in new spectral processing algorithms in the last decade, has achieved a promising performance as a quantitative chemical analyzer at the atomic level. These possibilities along with the fact that little or no sample preparation is necessary have expanded the application fields of LIBS. In this paper, we review the state of the art of this technique, its fundamentals, algorithms for quantitative analysis or sample classification, future challenges and new application fields where LIBS can solve real problems.Â