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North American Symposium on Laser-Induced Breakdown Spectroscopy: Introduction to the feature issue

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This feature issue highlights the topics presented at the 2009 North American Symposium on Laser-Induced Breakdown Spectroscopy, in New Orleans, Louisiana, held 13–15 July 2009.

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This 2009 North American Symposium on Laser-Induced Breakdown Spectroscopy (NASLIBS) was the second NASLIBS symposium, the first being held in 2007. The purpose of the NASLIBS has been to disseminate rapid developments in the underlying fundamental science and in the applications of laser-induced breakdown spectroscopy (LIBS) that are appearing on an almost monthly basis—far too rapid to be effectively presented at the bi-annual international LIBS conference. In addition, special emphasis was placed on encouraging student presenters and authors to participate and interact with more senior or well-established participants. The topics presented covered a broad range of fundamental science and applied technologies related to LIBS applications and development and were loosely organized into the following categories: security and forensics, biomedical and environmental applications, liquid analysis and fundamentals of LIBS, instrumentation and commercialization, fusion of other optical sensing modalities with LIBS, and new frontiers.

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NASLIBS was organized to bring together experts and young researchers in academia, specialists from analytical laboratories, engineers from industry, and exhibitors and representatives from companies specializing in LIBS apparatus and spectroscopic equipment. Not only was NASLIBS launched to showcase recent progress made in the areas of LIBS applications and instrumentation, but also to bring together experts to define the needs for future development of LIBS technology and its applications as a whole. To this end, the central theme of NASLIBS 2009, LIBS: from the Lab to Dual-Use Applications, aimed to emphasize the contribution of fundamental knowledge to analytical and instrumental technology, as well as to highlight the growth in the usefulness of LIBS for a variety of societal applications. A unique feature of this technique has been its potential to make remote, real-time determinations of the chemical composition of any sample matrix, specifically in the case of nuclear, chemical, and biological threats for homeland security and other applications, both in close contact as well as at standoff ranges in excess of 100 m.

There were 150 participants from the USA, Canada, Belgium, Italy, Japan, Germany, England, Brazil, Peru, Poland, China, and India. Eight vendors

participated and displayed their products over the course of the symposium. Participation in this second NASLIBS increased ~50% in comparison with the first NASLIBS, and plans are under way for a third NALSIBS symposium, tentatively scheduled for 2011 in Miami, Florida. Guest editors are pleased to have the contribution of 27 papers in this feature issue covering various LIBS related topics.

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