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EDITORIAL

Field laser applications in industry and research

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This topical issue is comprised of papers describing scientific and technological achievements that were presented during the last edition of the FLAIR (Field Laser Applications in Industry and Research) conference, held September 12–16, 2016 in Aix-les-Bains, France.

Just like the conference, this issue deals with the latest advances in (mostly infrared) laser spectroscopic measurements originating from academic and industrial research laboratories. All aspects of the measurement process, including: components, techniques, devices and their characterization, laboratory and field applications pass the revue. This all-encompassing focus, exemplified by the conference talks, exhibits extensive interactions in informal settings, and selected papers in this issue are unique aspects of FLAIR. The close multi-disciplinary interaction of academic and industrial researchers during the previous FLAIR conferences has demonstrably led to fruitful collaborations and accelerated progress on both the technological and scientific fronts. Examples are shown of breath analysis with spectroscopic devices, new developments of novel detection techniques involving optical frequency comb (OFC) sources, combustion and atmospheric studies, as well as progresses in cavity ring-down techniques. Several papers in this topical issue, and in particular those by Khodabakhsh et al. [1], Westberg et al. [2], and Mordmüller et al. [3], as well as a dedicated session during the conference, bear witness to the major contributions to the laser detection field made by the Rice University groups of Profs. Robert Curl and Frank Tittel. For the second time now, three of our sponsors (Aerodyne, LI-COR and Thermo Electron SAS) supported the Peter Werle Award. This prize recognizes outstanding early career scientists. The 2016 Peter Werle Early Career Scientist Award has been awarded to Dr. Aleksandra Foltynowicz-Matyba from the Umeå University in Sweden. Her most recent work has been published among the papers of the topical issue of Applied Physics B related to FLAIR 2016 [1].

Besides thanking our sponsors for financial support, and all contributors for keeping the scientific level of the conference at the usual high level, we want to thank the members of the advisory board, the scientific secretariat and the local organizers, in particular Dr. Silvia Viciani (CNR-INO) and Dr. Roberto Grilli (CNRS-Grenoble). We are pleased to announce that the next edition of FLAIR will be held from September 10–14, 2018 in Italy.

This article is part of the topical collection "Field Laser Applications in Industry and Research" guest edited by Francesco D'Amato, Erik Kerstel, and Alan Fried.

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