

*Centrum HiLASE Vás zve na seminář*

## **Laser Ablation Fundamentals and Applications**

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Our group has developed for several years experimental and theoretical capabilities for the fundamental study of the complex processes involved in laser ablation and its applications in various fields. Fundamental studies on laser ablation plasma plume dynamics have been performed both experimentally by optical (ICCD fast imaging, space- and time-resolved optical emission spectroscopy) and electrical (Langmuir probes, mass spectrometry) methods, and theoretically (development of a new model based on fractal concepts). Various laser pulse durations have been explored (from ns to ps to fs) and some peculiar features have been evidenced in both experimental and theoretical data [1, 2].

Applications of laser ablation were mainly developed in three fields: environment (analysis of soot particles [3, 4], ices resonant desorption in IR [5]), medicine (real-time analysis of cancer markers [6]), and materials science (pulsed laser deposition of various thin films [7], study of the accelerated erosion of ceramic materials used in plasma space propulsion [8], etc.). Parametric studies and coupling with other on-line or off-line techniques led to outstanding results in terms of, e.g. sensitivity, selectivity or space- and time-resolution for the proposed analytical methods.

An overview of these fundamental and applied studies will be presented.

***který se bude konat v pondělí 15. 12. 2014 od 15:00***

***v přednáškové místnosti centra HiLASE***

***Za Radnicí 828, Dolní Břežany***