

Non-invasive identification of substances with neutrons and lasers: status and prospects

Monday, 4 November 2024 13:00 (1 hour)

In an era of growing armed conflicts and the threat of terrorist attacks, the search for effective methods for detecting and neutralizing hazardous materials is becoming particularly important. They are important not only in the context of protecting the population but also the natural environment. The seminar will discuss methods for detecting explosives and other hazardous substances using neutrons and laser-induced plasma. They enable non-invasive and fast determination of the stoichiometry of the tested substance and are based on the use of neutrons interaction with matter and spectroscopy of gamma radiation generated as its result. This allows for determining not only the shape but also the stoichiometry of the tested objects. Using neutrons is a good alternative or complement to the techniques used so far, and its potential may be increased even more by subsequent application of Laser-Induced Breakdown Spectroscopy (LIBS).

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