

Study of wine samples by laser-induced breakdown spectroscopy (LIBS)

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New method for elemental analysis of wine samples by laser-induced breakdown spectroscopy (LIBS) has been applied in cooperation with LIBS laboratory in Lyon, France. LIBS represents simple and fast spectroscopy technique that has proven its remarkable analytical capacity mainly in the analysis of solid and gaseous samples. In order to overcome the obstacles related to the analysis of bulk liquids, such as shock wave and bubble formation, we have developed an alternative way of sample preparation for LIBS analysis of liquids with organic background by drying them on a solid target (aluminium or silicon). Wine samples were doped with known amounts of *Ti*, *Fe* and *Sr* with the purpose to study matrix effects and limits of detection (LODs). We have also analysed elemental composition of commercially available wines coming from two different regions in France and wines samples obtained directly from wine-growers from several different regions in Slovakia. Direct communication with winegrowers helped us to know the conditions of wine fabrication in more detail. Finally, the analytical performance of our method has been evaluated and compared with other methods already applied to such analysis.

Sekce

Biofyzika a fyzika molekulárních systémů

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