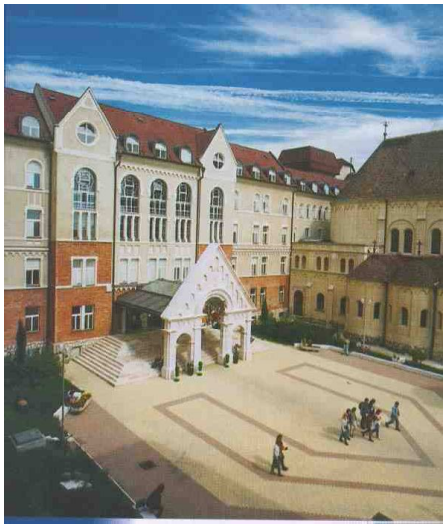
9th INTERNATIONAL SYMPOSIUM

ON

INSTRUMENTAL ANALYSIS



FINAL PROGRAM

AND

ABSTRACTS

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ANALYSIS OF WINE AND GRAPE SAMPLES WITH MALDI-TOF-MS

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A rapid MALDI-TOF-MS method introducing a new matrix, fullerene [C_{70}], has been developed for fingerprinting and for analyzing the anthocyanin content of wine and grape samples. Anthocyanins are red pigments, localized in the skin of the grapes, in the first external layers of the hypodermal tissue and exclusively in the vacuoles. They are based on five anthocyanins (cyanidin, peonidin, petunidin, delphinidin and malvidin). Those compounds are present in aglycone forms in the grapes skin and glycoside forms in the wines. Malvidin-3-glycoside is the main component responsible for the red color of the wine. The wine and grape samples have been analyzed without preparation. Different MALDI matrices have been tested: α-cyano-4-hydroxycinnamic acid, 2,5-dihydroxy-benzoic acid, sinapic acid, fullerene [C_{70}] and measurements of some samples without matrix have been done. It was found that fullerene C_{70} gave satisfactory results for identification of the anthocyanins. Sandwich method has been applied for measurements of grapes and wines from Vranec, Merlot, Chardonnay and Smederevka varieties (harvest 2007). The wine samples have been obtained by different technological wine-making techniques in order to check the effect of two doses of SO_2, two yeasts (*Saccharomyces cerevisiae*, the most commonly used) from different manufactures (Macedonian yeast-Vinalko and French yeast-Levuline CHP) and the maceration time of 3, 6 and 10 days (only for red wines).

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