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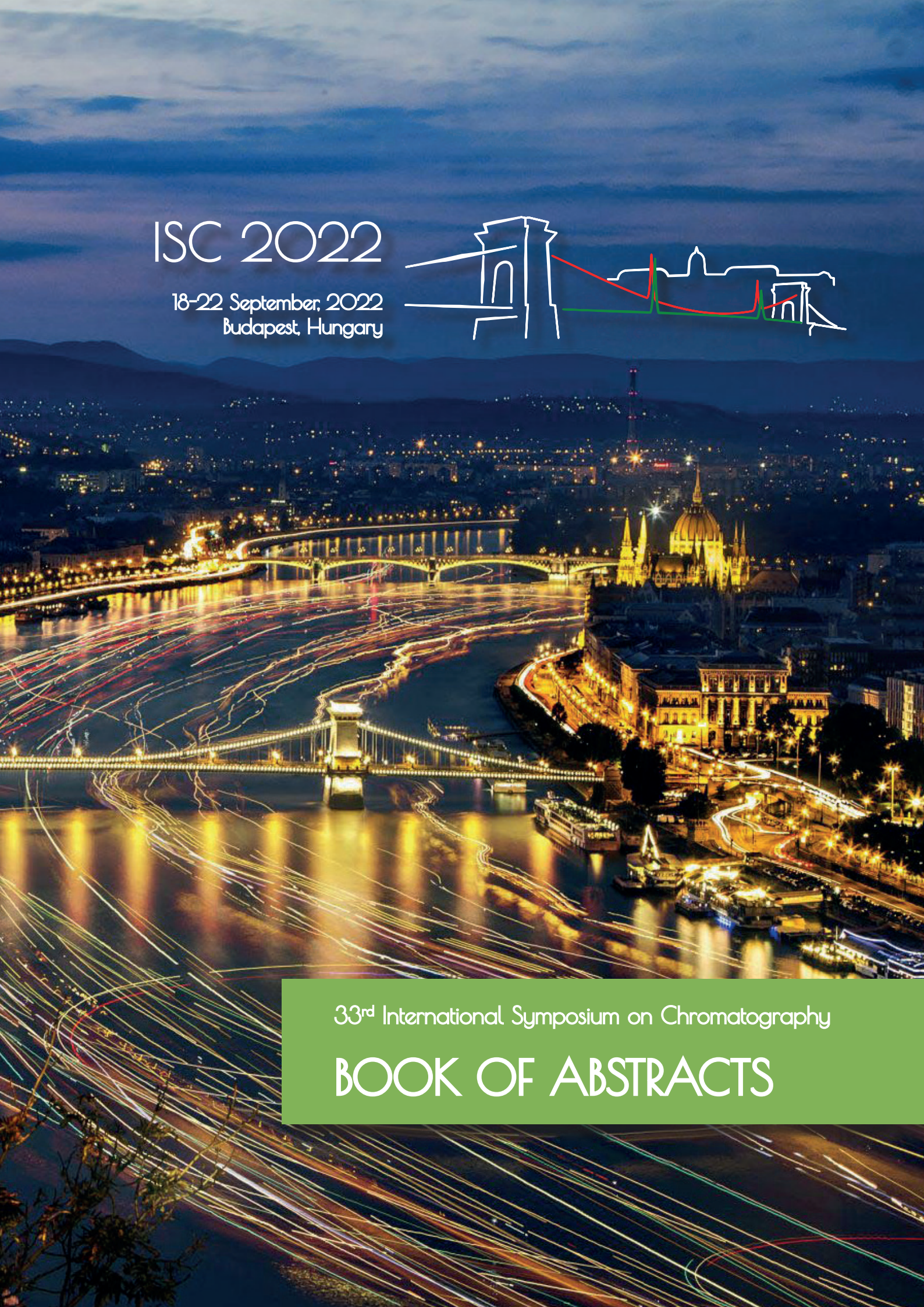

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BOOK OF ABSTRACTS

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The Analysis of Semi-volatile Additives in Wines by Vacuum-assisted Headspace Solid-Phase Microextraction method

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The purpose of this study is to develop and improve of the Vac-HS-SPME method and determining semi-volatile components for analyzing of alcohol containing products, with a focus on wine analysis. The adoption of an effective GC-MS technique of analysis is offered as a solution. Furthermore, the emerging process adheres to "green" chemical concepts.

Vac-HS-SPME was effectively used to detect diverse classes of semi-volatile compounds in food samples; the reason is it provides superior extraction. HS-SPME is a more suited and effective approach for identifying chemicals in wine. In SPME, volatile analytes were always extracted quicker than semi-volatiles, therefore analysis required a higher temperature. Vacuum-assisted HS-SPME was also shown to consistently provide excellent extraction efficiencies and sensitivities in short sample durations and at low temperatures.

Wine quality is determined by semi-volatile organic components, which determine fragrance and varietal characteristics. The yeasts manufacture some of the volatile molecules that give wine its flavor from semi-volatile chemicals during fermentation. Propylene glycol, sorbic and benzoic acids, as the main wine's semi-volatile additives were identified by GC-MS combined with Vac-HS-SPME. The preliminary optimized method has been approved for identification of these and other supplement preservatives in various types of wine by fiber coating, which has the following specified parameters: evacuation tense (t = 2 min), extraction time (t = 30 min), temperature of extraction (T = 60 ^{O}C), without pre-incubation time.

The data of screening results of different wines were received by using the parameter optimized Vac-HS-SPME method and analysis on GC-MS. Concentration of each analytes was determined by the standard addition method. LOQs of Propylene glycol, Sorbic acid, and Benzoic acid were 0.01–150 mg/L, 0.1–1500 mg/L and 1–100 mg/L respectively.

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Keywords:Food Science, Wine quality, Semi-volatile additives, Gas Chromatography-Mass Spectrometry, Vacuum-assisted Headspace Solid-Phase Microextraction