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9. – 12. travnja 2019. • Šibenik, Amadria Park (Solaris)

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with international participation | 4th Symposium "Vladimir Prelog"

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Supercritical CO₂ extraction of plant biologically active compounds Superkritična CO₂ ekstrakcija bioaktivnih komponenti iz biljnog materijala

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Recent trends in the extraction techniques have largely focused on finding solutions that minimize the use of harmful solvents and allow the use of alternative, so called “green” solvents that ensure safe and high quality extracts. Supercritical fluid extraction (SFE) emerged in the last few decades as a promising green technology and a good alternative in food and natural products processing. By using carbon dioxide (CO₂) as a solvent, the SFE becomes environmentally friendly process resulting in solvent-free extracts/without any trace of toxic solvents, and are thereby highly valued [1].

Today, SFE is not only used in laboratories, namely, it is, even more often, also used on a large scale for a lot of industrial applications. During the SFE it is very important to understand the effects of the different parameters on the yield and extract quality. The knowledge of these effects is not only useful for the optimization and economic evaluation of the process, but also for the ability to predict the extraction process, which is useful for *scale-up* as well as for the design and the optimization of future industrial plants [2].

SFE has a wide application area and is capable of extracting a wide range of diverse compounds from variety of raw material matrices. A brief overview of the up to date knowledge regarding supercritical fluids will be presented, with special emphasis on the design and development of SFE laboratory plant and *scale-up* criteria for SFE. The selected examples of the extraction of plant biologically active compounds by supercritical CO₂ will be presented.

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