XXVI. HSKIKI

26 HSKIKI

HRVATSKI SKUP KEMIČARA I KEMIJSKIH INŽENJERA
s međunarodnim sudjelovanjem | 4. simpozij "Vladimir Prelog"
9. – 12. travnja 2019. • Šibenik, Amadria Park (Solaris)

CROATIAN MEETING OF CHEMISTS AND CHEMICAL ENGINEERS
with international participation | 4th Symposium "Vladimir Prelog"
April 9–12, 2019 • Šibenik, Amadria Park (Solaris), Croatia

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Hrvatsko društvo kemijskih inženjera i tehnologa
Croatian Society of Chemical Engineers

Hrvatsko kemijsko društvo
Croatian Chemical Society

Knjiga sažetaka
Book of Abstracts
Šibenik, Amadria Park (Solaris)

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HDKI HRVATSKO DRUŠTVO KEMIJSKIH INŽENJERA I TEHNOLOGA

HKD 1926

Fotografija Šibenika: Zvonimir Katančić | dizajn: Zdenko Blažeković

26. hrvatski skup kemičara i kemijskih inženjera

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Knjiga sažetaka

26th Croatian Meeting of Chemists and Chemical Engineers

with international participation

4th Symposium Vladimir Prelog

9–12 April 2019

Šibenik, Amadria park (Solaris), Croatia

Book of Abstracts

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Grafička priprema programa / *Design & Layout*

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IMPRESUM

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Hrvatsko društvo kemijskih inženjera i tehnologa
Croatian Society of Chemical Engineers
Hrvatsko kemijsko društvo
Croatian Chemical Society

Izdavač / *Published by*
Hrvatsko društvo kemijskih inženjera i tehnologa
Croatian Society of Chemical Engineers

Urednici / *Editors*
Nives Galić / Marko Rogošić

Grafička priprema / *Design & Layout*
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ISBN: 978-953-6894-67-3

Mjesto održavanja Skupa / *Meeting Venue*
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Zagreb, 2019.

Supercritical CO_2 extraction of plant biologically active compounds
Superkritična CO_2 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 (CO_2) 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 CO_2 will be presented.

References

[1] M. Cvjetko Bubalo, S. Vidović, I. Radojčić Redovniković and S. Jokić, *Food Bioprod. Process.* **109** (2018) 52-73.

[2] S. Jokić, G. Horvat and K. Aladić, *Design of SFE system using a holistic approach – problems and challenges*, in: J. Lindy (Ed.) *Supercritical Fluid Extraction: Technology, Applications and Limitations*, Nova Science Publishers, Inc., 2015, NY, USA, pp. 95-122.