УНИВЕРЗИТЕТ У БАЊОЈ ЛУЦИ
UNIVERSITY OF BANJA LUKA
ТЕХНОЛОШКИ ФАКУЛТЕТ
FACULTY OF TECHNOLOGY

# BOOK OF ABSTRACTS

**OCTOBER 21-22, 2022**

ACADEMY OF SCIENCES AND ARTS
OF THE REPUBLIC OF SRPSKA,
BANJA LUKA, REPUBLIC OF SRPSKA, B&H

INTERNATIONAL SCIENTIFIC CONFERENCE

## XIV CONFERENCE OF CHEMISTS, TECHNOLOGISTS AND ENVIRONMENTALISTS OF REPUBLIC OF SRPSKA

# XIV CONFERENCE OF CHEMISTS, TECHNOLOGISTS AND ENVIRONMENTALISTS OF REPUBLIC OF SRPSKA

## BOOK OF ABSTRACTS

*Publisher:*
*University in Banjaluka, Faculty of Technology*

*Editorial board:*
*Borislav Malinovic, PhD, dean*

*Design and computer processing*
*Pero Sailovic, PhD*
*Msc Branka Ruzicic*

CIP - Каталогизација у публикацији
Народна и универзитетска библиотека
Републике Српске, Бања Лука

66(048.3)(0.034.2)
661:663/664(048.3)(0.034.2)
677(048.3)(0.034.2)
655(048.3)(0.034.2)
502(048.3)(0.034.2)

CONFERENCE of Chemists, Technologists and Environmentalists of Republic of Srpska (14 ; Banja Luka ; 2022)
Book of Abstracts [Електронски извор] / XIV Conference of Chemists, Technologists and Environmentalists of Republic of Srpska, Banja Luka, October 21-22, 2022 ; [editorial board Borislav Malinović]. - Onlajn izd. - El. zbornik. - Banja Luka : University in Banjaluka, Faculty of Technology = Tehnološki fakultet, 2022

Sistemski zahtjevi: Nisu navedeni. - Način pristupa (URL): https://savjetovanje.tf.unibl.org/. - El. publikacija u PDF formatu opsega 207 str. - Nasl. sa naslovnog ekrana. - Opis izvora dana 20.10.2022.

ISBN 978-99938-54-96-8

COBISS.RS-ID 137004033

# BINARY MIXTURES OF SUBSTANCIES WITH DOULBE AND SINGLE BONDS

Milana Zarić[1,2], Ivona Radović[3], Mirjana Kijevčanin[3]

[1]Institute of Chemistry, Technology and Metallurgy, University of Belgrade – Belgrade, Serbia
[2]Centre of Excellence in Environmental Chemistry and Engineering – ICTM, University of Belgrade – Belgrade, Serbia
[3]Faculty of Technology and Metallurgy, University of Belgrade – Belgrade, Serbia
Corresponding author email: milana.zaric@ihtm.bg.ac.rs

## Abstract

Studies of thermodynamic and transport properties (density, viscosity, refractive index and speed of sound) of pure substances and their mixtures give data on the behaviour of liquids that can be very important for processes in industry. In our previous work we studied pure substances cis-3-hexen-1-ol, 1-hexanol and n-hexane and their binary systems cis-3-hexen-1-ol + n-hexane and 1-hexanol + n-hexane. The results indicate double bond influence on the properties of the mixtures. In this work, we continue the study of the influence of double bonds on properties of mixtures in systems with double and single bonds. All thermodynamic properties measurements are reported in the range (288.15 to 318.15) K and at atmospheric pressure. Excess molar volume ($V^E$), viscosity deviation ($\Delta\eta$), refractive index deviation ($\Delta nD$) and speed of sound deviation ($\Delta u$) were calculated based on the experimental data. Derivate properties are fitted using Redlich-Kister equation. In order to additionally study molecular interaction, the FT-IR spectroscopy and quantum chemical calculations are performed. The comparison of systems with and without double bond shows the potential influence of double bond on thermodynamic properties of mixtures, that can be important in industry.

**Keywords**: thermodynamic properties, double bond, binary mixtures, FT-IR spectroscopy, intermolecular interactions.