

BOOK of ABSTRACTS

**27th Congress
of Chemists
and Technologists
of Macedonia**

ХИМИЈА

20-23 9 2024 OHRID, RN MACEDONIA





Сојуз на хемичарите и технолозите на
Македонија
Society of Chemists and Technologists of
Macedonia

27th Congress of SCTM

BOOK of ABSTRACTS

25–28 September 2024

Metropol Lake Resort

Ohrid, N. Macedonia

Skopje, 2024



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The 27th Congress of SCTM is a



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Dear Esteemed Colleagues and Participants,

We are pleased to present the Book of Abstracts for the 27th Congress of the Society of Chemists and Technologists of Macedonia. Like our previous congresses over the past two decades, this event takes place in the cradle of Slavic literacy—a region with a rich history of intellectual accomplishments. We trust that the heritage, along with the beauty of Lake Ohrid and the city itself, will not only make your stay enjoyable but also serve as an added source of inspiration for your own work.

The SCTM congresses have grown into a prominent platform for regional researchers from all fields of chemistry and chemical engineering. We are honored to welcome plenary and invited speakers not only from Macedonia but also from countries like Czechia, Denmark, Italy, Serbia, Spain, and the United Kingdom. In addition, we are proud to feature a wide range of oral and poster presentations from researchers representing Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Germany, Greece, Italy, Kosovo, Montenegro, Poland, Serbia, Slovenia, Spain, Romania, and Russia. With nearly 200 presentations from 550 authors and co-authors, it is especially gratifying to see many attendees returning as regular participants.

We hope this Book of Abstracts serves as both a source of inspiration and a record of the exceptional work presented at the 27th SCTM Congress. Let's use this opportunity to celebrate not only our achievements but also our resilience, determination, and steadfast commitment to advancing knowledge. Together, we can overcome challenges and, through our collective efforts, continue to drive innovations that make a positive impact on the world.

We extend our heartfelt gratitude to Prof. Jadranka Blaževska Gilev and Prof. Biljana Angjuševa for once again taking on the challenging task of organizing this year's congress. Their tireless efforts and dedication ensured the event's success. We also wish to thank all the members of the scientific and organizational committees who worked tirelessly behind the scenes, with special recognition to Assoc. Prof. Vojo Jovanov, Marija Prosheva and Despina Kostadinova for their management of the website, Book of Abstracts, and other essential tasks.

Our thanks also go to the reviewers and participants whose contributions have been vital to the success of this Congress. Your commitment to the scientific mission emphasizes the value of collaboration, especially during uncertain times. It is through the exchange of ideas, sharing of knowledge, and building of connections that we strengthen our community and advance our fields. Lastly, we express our sincere gratitude to the sponsors, acknowledged at the end of this book, for their generous support.

Prof. Zoran Zdravkovski, president
Society of Chemists and Technologists of Macedonia

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Quantitative Determination of Microelements in Forest Berries from the Pešter Plateau in The Republic of Serbia by ICP-OES Method

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In this study the inductively coupled plasma optical emission spectrometry (ICP-OES) was used to determine the concentration of essential and potentially essential elements such as: Fe, Zn, Cu, Se, Cr and B, Co, Mn, Ni, Si, V. Forest fruit (strawberry (S1-S2), raspberry (R1-R2), and blackberry (B1-B2)) from different locations of the Pešter Plateau in the Republic of Serbia was selected for investigation. The range of microelements found in the analyzed forest berries was as follows: for **Cu**: S1 > R3 > S2 > R2 > B2 > B1 > R1; for **Fe**: R1 > S1 > S2 > R3 > R2 > B1 > B2; for **Cr**: S2 > S1 > R1 > R2 > R3 > B2 > B1; for **Zn**: R3 > R2 > S2 > R1 > B1 > S1 > B2; for **Se**: S1 > R1 > S2 > B1 > B2 > R2 > R3. The average results (concentration \pm SD, $\mu\text{g g}^{-1}$) of essential elements obtained for forest berries are given in Table 1.

Table 1. Essential microelement contents ($\mu\text{g g}^{-1}$) in forest berries samples from the Pešter Plateau

Sampl.	Cu	Fe	Cr	Zn	Se
S1	3.17 \pm 0.13	6.83 \pm 0.33	0.312 \pm 0.002	2.53 \pm 0.02	0.454 \pm 0.039
S2	2.524 \pm 0.045	6.66 \pm 0.20	0.364 \pm 0.026	3.66 \pm 0.06	0.336 \pm 0.007
R1	0.903 \pm 0.020	7.842 \pm 0.055	0.2882 \pm 0.0024	3.58 \pm 0.07	0.391 \pm 0.004
R2	1.59 \pm 0.11	5.51 \pm 0.28	0.23 \pm 0.01	5.02 \pm 0.29	0.112 \pm 0.028
R3	2.511 \pm 0.069	6.66 \pm 0.60	0.190 \pm 0.002	6.75 \pm 0.14	0.045 \pm 0.029
B1	1.327 \pm 0.022	4.244 \pm 0.042	0.130 \pm 0.001	3.17 \pm 0.31	0.3030 \pm 0.0003
B2	1.360 \pm 0.096	3.43 \pm 0.77	0.139 \pm 0.007	1.74 \pm 0.08	0.302 \pm 0.010

S1, S2 = strawberry; R1, R2, R3 =raspberry; B1, B2 = blackberry.

Keywords: forest berries; microelements; ICP-OES; Pešter Plateau.