



Society of Physical Chemists of Serbia

PHYSICAL CHEMISTRY 2021

*15th International Conference on
Fundamental and Applied Aspects of
Physical Chemistry*

PC2021

The Conference is dedicated to the

30th Anniversary of the founding of the Society of Physical Chemists of Serbia

and

100th Anniversary of Bray-Liebhaafsky reaction



PHYSICAL CHEMISTRY 2021

15th International Conference on Fundamental and Applied Aspects of Physical Chemistry

Organized by

The Society of Physical Chemists of Serbia (SPCS)



in co-operation with

Institute of Catalysis, Bulgarian Academy of Sciences



Boreskov Institute of Catalysis, Siberian Branch of Russian Academy of Sciences



and

Members of the University of Belgrade:



Faculty of Physical Chemistry



Institute of Chemistry, Technology and Metallurgy



VINČA Institute of Nuclear Sciences



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and

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K-14-P**IMPACT OF PHARMACEUTICAL LEVELS IN UNTREATED WASTEWATER ON BELGRADE RIVER WATER QUALITY**

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In the city of Belgrade, raw sewage is discharged directly into the Sava and the Danube rivers affecting the quality of river water. To determine the level of this impact, eight frequently used and detected pharmaceuticals were selected for the study. A previously developed method for analysis of pharmaceuticals in different water matrices was used. Sample extracts were analyzed by liquid chromatography-tandem mass spectrometry, using the electrospray ionization technique. The most commonly detected analytes in both municipal wastewater and surface water were carbamazepine, known for its high environmental stability, and diclofenac, known as having high acute ecotoxicity. The dilution effect, noted for most of the detected drugs, was not as pronounced with diclofenac, indicating a higher risk for aquatic organisms.

K-15-P**DOES EXPOSURE TO A SINGLE DOSE OF MICROPLASTIC REPRESENTS A HEALTH RISK?**

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Worldwide pollution with plastic debris represents tremendous environmental issue. Small particles originated from plastic bottles exert various effects in organisms when exposed chronically, while the effects of a single exposure are completely unknown. Thus, to test their potential health impact, male Wistar rats were exposed by oral gavage to a single dose of microplastic particles (MP) derived from polyethylene terephthalate (PET) bottles (1.4, 35 or 125 mg/kg with median diameter of 85 µm). Food and water intakes were monitored, and neurological and clinical tests were conducted. Obtained results point to lower food and water intakes in groups that received two higher MP doses indicating to interference with normal digestion. None of three used MP doses provoked neurological and clinical impairments either due to short-term exposure and/or lack of MP cumulative effect. Overall, presented results indicate that exposure to a single dose of MP can initiate health issues.