



BOOK OF ABSTRACTS

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DISPERSION OF SEDIMENT CAUSED BY LAND USE CHANGE

Nevena Antić ^{1, *}, Milica Kašanin-Grubin¹, Branimir Jovančićević ²

1 Institute of Chemistry, Technology, and Metallurgy, University of Belgrade, 11000 Belgrade, Serbia

2 University of Belgrade - Faculty of Chemistry, Studentski trg 12-16, 11000 Belgrade, Serbia

* nevena.antic@ihm.bg.ac.rs

Mining regions in case of exploration of mineral resources could be exposed to extensive land-use and land cover changes. Land-use and land-cover change coupled with climate changes have environmental and social impacts and require better understanding of processes occurring in the field that would lead to better prediction of future land-use changes and innovations in land management approaches.

Neogene lacustrine basins in the Balkans have recently attracted a lot of attention and are extensively investigated for the purpose of finding mineral deposits, namely boron and lithium minerals. In the case of open-pit exploration, once they are exposed to the surface conditions dispersion properties of soft-sediments will become an important factor in future surface processes. Consequently, depending on their sensitivity, the appropriate land management practices will be necessary.

Due to that, forty-seven sediment samples from four lacustrine basins were analyzed in order to determine and compare the dispersivity of sediments. Twelve were sampled from the Valjevo-mionica basin were more than a half are carbonate sediments, while the rest are marls; thirteen carbonate and marl sediment samples were taken from the Lopare basin; eight samples from Aleksinac basin are marls and oil shales, while fourteen samples from Toplica basin are mainly sandstone, clay and tuffs and marls in smaller portions. Electrical conductivity (EC), pH and elemental composition were measured, while dispersivity index sodium-adsorption ratio (SAR) was calculated from the concentration of cations.

The obtained results show that the pH values of all analyzed samples vary from neutral to base (pH 6.96 – 11.65). EC, organic matter content (C_{org}) and SAR cover a wide range of values (EC 93.6–2840 μScm^{-1} ; C_{org} 0.15–32.85%; SAR 0.03-17.80), in which in Aleksinac basin were measured the lowest EC and SAR values and the highest C_{org} values.

According to the carbonate and organic matter content, samples were organized into three groups: carbonates (Lopare and Valjevo-mionica basin), marls (Lopare, Valjevo-mionica and Toplica basin) and marls rich in organic matter (Aleksinac basin).