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Željana Sekulić[1], Ksenija Stojanović[2], Achim Bechtel[3], Reinhard F. Sachsenhofer[3], Momir Petrović[4], Ivan Kojić[5], Dragana Životić[6]*

[1]: *Mining and Metallurgy Institute, Zeleni Bulevar 35, 19210 Bor, Serbia*
[2]: *University of Belgrade, Faculty of Chemistry, Studentski trg 12-16, 11000 Belgrade, Serbia*
[3]: *Montanuniversität Leoben, Department of Applied Geosciences and Geophysics, Peter-Tunner-Str. 5, A-8700 Leoben, Austria*
[4]: *JP PEU Resavica, Design and Development Office - Belgrade, Makedonska 33, 11000 Belgrade, Serbia*
[5]: *University of Belgrade, Innovation Center of the Faculty of Chemistry, Studentski trg 12-16, 11000 Belgrade, Serbia*
[6]: *University of Belgrade, Faculty of Mining and Geology, Đušina 7, 11000 Belgrade, Serbia*
*: *Corresponding Author:* ***dragana.zivotic@rgf.bg.ac.rs***

The Lower Miocene subbituminous coal from the Dubrava field (Aleksinac Basin, Serbia) is studied. Samples were collected from a single borehole, representing different parts of the Main coal seam and coal layers within and under lower oil shale package. Since vitrinite reflectance (%Rr, 0.44 ± 0.03 - 0.46 ± 0.02) and biomarker compositions indicate the same maturity stage of organic matter (OM), corresponding to late diagenesis and early catagenesis, petrographic data, biomarker proxies and stable carbon isotope ratios ($\delta^{13}C$) of individual biomarkers were used to evaluate the origin and depositional environment of OM.

The content of vitrinite group macerals increases from top to bottom of the Main coal seam which is associated with a notable decrease of liptinite and mineral matter (MM). Contents of collotelinite, collodetrinite and corpogelinite increase downward through the Main seam, whereas content of vitrodetrinite shows the opposite trend.

Non-hopanoid triterpenoids and hopanoids are the most abundant hydrocarbons in extractable OM of samples from the Main coal seam. This implies prevalence of angiosperm derived precursor OM, and pronounced microbial activity during diagenesis. Conifer diterpenoids are also present. The ratio of diterpenoids to the sum of diterpenoids and non-hopanoid triterpenoids notably decreases downward through the seam indicating lower conifer input. Typical feature of coal is high content of fernene derivatives, which decreases through the seam. The stable carbon isotopic composition of fernene derivatives implies that they mostly originate from ferns, whereas $\delta^{13}C$ values of the most abundant hopanoids, belonging to 13(18)-neohopene series, suggest in addition to ferns, contribution of chemoautotrophic bacteria.

Content of total *n*-alkanes increases through the seam, which is associated with notable decrease of content of short-chain (C_{15}-C_{20}) and increase of long-chain (C_{26}-C_{33}) homologues. The obtained results suggest lowering of the water table during the formation of the Main coal seam. This change resulted in lesser inundation and deposition of MM associated with smaller input of bacterial and algal OM and higher contribution of angiosperm vegetation. Very similar characteristics are observed for samples in coal layer, located within the lower oil shale package, suggesting the cyclic repetition of environmental conditions. The deepest coal layer, located under the lower oil shale package, contains higher amount of MM, associated with high amount of pyrite. Biomarker composition is relatively similar to that of samples from deeper parts of the Main coal seam and coal layer located within the lower oil shale package, however with slightly higher input of gymnosperm vegetation and hopanoids.

It is noteworthy to mention that compounds with lanosta(eupha)-hexaene skeleton are identified in all samples in relatively high content. Their $\delta^{13}C$ values in range from -28 to -29 ‰ and same concentration trends as observed for non-hopanoid triterpenoids imply angiosperm origin.