**Albitites from Dmytrivka (the Oktriabski Massif, Ukraine) - evidence of fluid-rock interaction triggered by fenitization processes**

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Albitites represent very uncommon rocks of a quite simple mineralogy, which are almost entirely composed of albite with subordinate amounts of quartz, K-feldspar, mica, apatite, zircon, and titanite (e.g. Castorina et al., 2006; Mohammad et al., 2007). The possible origin proposed for these rocks include: (1) metasomatism of granitic rocks by hydrothermal fluids (Cathelineau, 1988), (2) direct precipitation from solution (Jahnson and Harlow, 1999), and (3) crystallization from sodium enriched magma (Schwartz, 1992). Hence, they are found in both magmatic and hydrothermal geological settings. Albitites from Dmytrivka form vein- like structure within pyroxene fenites. They occur in a near vicinity of granitoids, pyroxenites, and mariupolites (albite-aegirine nepheline syenite) belonging to the Oktiabrski Massif. According to Krivdik (2017), albitites were formed as a result of metasomatic alteration of host fenites. Albitite of Dmytrivka are mostly composed of albite forming either larger non-turbid euhedral plates, or fine-grained (up to 0.3 mm), non-turbid crystals which are characterized by anhedral shape and straight grain boundaries exhibiting interfacial angles of 120° (triple-point junctions). All forms of albite show characteristic red CL colours activated by Fe3+ (White et al., 1986; Götze 2000). Locally, poorly-laminated texture, characterized by subparallel arrangement of tabular albite crystals, is observed. Sodium plagioclase is accompanied by relatively larger (up to 1.0 mm) cross-hatched microcline, acicular pyroxene (aegirine), and zircon. The latter forms large, bipyramidal-like crystals with sizes of 0.1-1.0 mm irregularly scattered within the rocks. The vast majority of K-feldspars exhibit pink, brown-red, or brown CL colours attributed to Fe3+ impurities occupying Al3+ tetrahedral sites in feldspar (White et al., 1986; Götze, 2000). Only a few of them luminescence in grey-blue and blue which is caused by emission centres of Al-O--Ti (Kayama et al., 2010) and Al-O--Al (Götze, 2000 ). Zircon crystals are strongly fractured and show irregular domains with yellow and dark navy-blue cathodoluminescence colours. The dominant yellow CL is attributed to extrinsic defects such as Dy3+ and Tb3+ (Götze, 2000;Gorobets and Rogojine, 2002; Blanc et al., 2000;Gaft et al., 2005), whereas dark blue CL is mainly caused by intrinsic defects in the zircon structure (Gorobets and Rogojine, 2002;Gaft et al., 2005). The relatively large size and distinctive shape of zircon crystals may imply their hydrothermal origin. On the other hand, strong fracturing indicate that they might be also overprinted by strong deuteric alteration (Yang et al., 2013). Chlorite, ilmenite-pyrophanite minerals occur as accessory phases of albitites.

 CL observations of albitites show that all feldspars were strongly affected by fluid-rock interaction triggered by migration of fenitizing solutions enriched in Fe3+ (Marshall, 1988; Finch and Klein, 1999). Moreover, the local presence of granoblastic texture, reflected by the presence of polygonal albite crystals, indicate subsolidus textural maturation of these rocks (Suikkanen and Rämö, 2017) which is consistent with CL observations. Nevertheless, the metasomatic origin of these rocks suggested by Krivdik (2017) still demand further investigations. The reason is that no traces of typical replacement of K-feldspar by albite were observed during CL and microscopic observations, although pervasive fluid overprint seems to be undisputed.

**Acknowledgements:**This study was supported by Grant No. 11.11.140.158 (AGH University of Science and Technology, Krakow)

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