



Xenoliths of mafic/ultramafic igneous rocks as carriers of information on lower crust beneath Złotoryja – Jawor volcanic complex (SW Poland).

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The Cenozoic alkaline volcanic rocks in Lower Silesia (SW Poland) are known for their mantle peridotite xenoliths. However, the mafic and ultramafic xenoliths with cumulative textures and of composition of olivine- or hornblende clinopyroxenite, clinopyroxenite, websterite, norite and gabbro occur in some of the lavas (6 sites) of the Złotoryja-Jawor volcanic complex. The xenoliths are anhydrous, only in Wilcza Góra minor amount of amphibole occurs. The Mg# of clinopyroxene varies from 0.54 (Ostrzyca Proboszczowicka clinopyroxenite) to 0.89 (Góra Świątek clinopyroxenite). Forsterite content in olivine varies from 64% (Winna Góra gabbro) to 86% (Wilcza Góra hornblende clinopyroxenite). Anortite content in plagioclase in nortite and gabbros is 33-56%. The Mg# in amphibole is 0.43 to 0.76. Clinopyroxene trace element composition is typically LREE enriched, but in Wilcza Góra norite and Mnisza Góra clinopyroxenite it is LREE-depleted. The calculated pressures of clinopyroxene crystallization (calculated by the algorithm of Nimis and Ulmer, 1998, CMP, 1998, 122-135, assuming all Fe to be 2+) is from 0.45 to 0.96 GPa pointing to crystallization of the pyroxenitic rocks in lower crust or at crust/mantle boundary. Theoretical melts in equilibrium with clinopyroxene enriched in LREE resemble the alkaline lavas from the area and we suggest they are cognate with host magmas. We explain variations in composition of mafic xenoliths from Wilcza Góra, Winna Góra and Grodziec to be a result of magma fractionation. Xenoliths containing clinopyroxene impoverished in LREE may represent lithologies inherited from Variscan oceanic crust. Megacrysts of clinopyroxene present in some of the localities cannot result from disintegration of mafic xenoliths. This study was possible thanks to project NCN UMO-2014/15/B/ST10/00095 of Polish National Centre for Science.