

FLUID INCLUSION STUDY OF JOTUNITES FROM THE SUWALKI AND SEJNY ANORTHOSITE INTRUSIONS - NORTH-EASTERN POLAND

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Jotunite is a minor component in most Proterozoic anorthosite intrusions but it plays a significant role for the origin recognition of anorthosites and related rocks. The fine grained jotunites (orthopyroxene monzodiorites), found as pseudolayers in Sejny 1 borehole, has been interpreted as typical chilled margins and dyke-shaped bodies in anorthosites of the Udryn-18 borehole (Suwalki massif). They are characterised by high Fe, Ti and P contents. Mineral and chemical composition of the jotunites from the Sejny and Suwalki intrusions are similar to those of jotunites from the Rogaland province (Norway), apart from a slightly higher Fe_2O_3 (total), CaO and REE(total) contents, and a lower K_2O content. The REE patterns exhibit enrichment in light REE and negligible Eu anomalies. The melting experiments performed on jotunites from Rogaland showed that such melts might be parent ones for anorthosites due to partial melting of a mafic plagioclase-orthopyroxene-clinopyroxene rock in the lower crust at 11.5 kb and 1300°C. Pyroxenes in the jotunites from the Sejny intrusion contain silicate melt inclusions up to 10 μm in size. The inclusion fillings start to melt at 780°C, producing small contraction bubble and blebs of an immiscible melt, which were identified in quenched, opened and analysed by means of electron microprobe inclusions as droplets of carbonate and phosphate phase. The bubble and the blebs homogenised with silicate melt at 1090-1180°C. The inclusion filling suggests a genetic connection with nelsonites