

V. I. ALEKSEEV, K. G. SUKHANOVA, Yu. B. MARIN. NIOBIUM MINERALS —
INDICATORS OF GENETIC LINK BETWEEN TIN-ORE ZWITTERS
AND LITHIUM-FLUORIC GRANITES IN THE VERKHNEURMIYSKY MASSIF
(THE AMUR RIVER REGION)

Saint Petersburg Mining University, Saint Petersburg, Russia

The study of niobium minerals in zwitteres and lithium-fluoric granites of the Verkhneurmiysky granite massif in the Amur River region: fergusonite-(Y), euxenite-(Y), samarskite-(Yb), aeschynite-(Y), niobic wolframite, has revealed a similarity of their species composition. Minerals with the same names and related crystal-chemically are characterized, both in zwitteres and granites, by an identical complex of elements-admixtures: W, REE, Mn, Fe, Pb, U, Sc. Thus, the conclusion is made about genetic link between tin-ore zwitteres and lithium-fluoric granites. The difference of niobium minerals composition in granites and zwitteres reflects a change of physical-chemical conditions of the mineral-forming while transition from magmatic stage of the process to the pneumatolytic-hydrothermal stage. Postmagmatic evolution of the niobium minerals composition consists in an increase of Y, Pb, U, Fe contents and the decrease of W, Ta, REE, Ti, Sc and Th concentrations. It is recommended to carry out an appraisal of niobium, yttrium and REE resources in ore-occurrences of the west sector of the Verkhneurmiysky copper-tungsten-tin ore cluster. Fergusonite, samarskite, euxenite, niobium wolframite may be used there as minerals-indicators for the rare-metal ore mineralization.

Key words: fergusonite, euxenite, samarskite, aeschynite, wolframite, zwitter, lithium-fluoric granite, rare-metal mineralization, tungsten-tin deposits, Verkhneurmiysky granite massif, Amur River region, Russian Far East.