A New Approach for Revealing of Mineral Typomorphic Features for Mineralization Estimation

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Quartz, fluorite, apatite, and other minerals from deposits of W, Sn, Be, TR and fluoric spar are studied by methods of EPR, Mossbauer, and luminescence spectroscopy, INAA and X-ray diffraction. It is established that real structure pecularities of these minerals are typomorphic, that is, reflect formation conditions of geological objects. Fluorite, apatite, and plagoiclase from Be deposits, related to mesoabyssal granites, have a positive anomaly of Eu (Eu/Eu*>1), but the same minerals from deposits, related to hypabissal granites, show Eu deficit. Fluorite from ores of the deep beryllium formation is characterized by a very high intensity of TR^{2+} picks at termoluminescence spectra, and apatite has a high intensity of Mn^{2+} and Eu^{2+} bands at fotoluminescence spectra as opposed to deposits of the low-deep Be-F formation. The clear-cut distinctions in Ge and Ti center concentrations in quartz from Sn deposits of different formation series and mineral types have been revealed by EPR method. The variations of Fe oxidation coefficients for tourmaline from different hypsometric levels of Sn deposits from Chukotka and Far East have been established by Mossbauer spectroscopy. The revealed typomorphic pecularities are useful in deposit estimation at early stages of their study.