



Tourmalinization in Roudgaz granitoid body, south of Bajestan, Khorasan-Razavi

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Abstract: Roudgaz granitoid is located in south of Bajestan. In this granitoid body, tourmaline occurred in two forms, as luxullianite and as veins of quartz-tourmaline with a 30 cm width. Based on petrography and electron microprobe analyses data, these tourmalines are schorl-dravite-foitite in composition, with a tendency toward schorl end member, and belongs to alkali and vacancies groups. In comparison with the ideal composition of schorl-dravite, many of tourmaline samples have high Al contents and alkali – site vacancies. The increase of the amount of octahedral aluminum reflects a combination of substitutions in tourmaline involving deprotonation (O-OH exchange) and vacancies in the alkali-site and therefore they have originated from magmatic source. In contrast, the presence of zoning, its occurrence as vein form, having a high Mg compared to samples with high Fe and tendency away from alkali-deficient and proton-deficient tourmaline vectors, shows that tourmaline in the luxullianite as well as the vein tourmalines are hydrothermal in origin. So, based on the evidence described above, tourmaline veins have formed by interaction of boron on-rich magmatic-hydrothermal fluids of the origin of mass granitoid rocks along with various quartz-tourmaline and metapelitic-metapesamitic host rocks.

Keywords: *Lut; Bajestan; Roudgaz; granitoid; luxullianite; quartz tourmaline.*

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