

## Textural and PGM characteristics of subarc podiform chromitite xenoliths from Takashima, southwest Japan

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The chromitite xenoliths from Takashima alkali basalt, the Southwest Japan, represent current subarc chromitites, possibly of podiform type in terms of the occurrence, mineral chemistry and textures (Arai and Abe, 1994). We found laurite, one of PGM (platinum-group mineral), and pentlandite in the Takashima chromitite. The finding is the first report on the occurrence of PGM from chromitites as xenoliths to our knowledge.

Laurite was commonly found as minute (<5 microns across) solitary grains of euhedral shape embedded in chromian spinel. Sometimes, very fine (around 1 micron) grains of Cu-bearing pentlandite are associated with the primary silicate mineral (mainly pyroxenes) inclusions in spinel. Chondrite-normalised PGE pattern of the Takashima chromitite shows a slightly negative slope from Ru to Pt, which is analogous to that of some podiform chromitites from ophiolites, such as the Oman ophiolite. In addition, laurite is one of most common PGM in podiform chromitites from ophiolites (Ahmed and Arai, 2003).

The textures (layered, massive, schlieren, unti-nodular and rarely nodular texture) of Takashima chromitites (Arai and Abe, 1994) are analogous to that of some chromitite from ophiolite, especially the Oman ophiolite. Spinel in Takashima chromitite show a relatively high Cr# (= Cr/(Cr+Al) atomic ratio), 0.6 to 0.8, and a low TiO<sub>2</sub> content, 0.16 to 0.63wt% (Arai and Abe, 1994). Spinel in Rajmi discordant chromitite, Oman, also show a similar high Cr#, 0.75 to 0.78, and a low TiO<sub>2</sub> content, 0.15 to 0.2wt%. Both the Takashima and Oman chromitites are comparable in the spinel chemistry with some arc-related plutonic rocks (Arai et al., 2011). This indicates that some of the podiform chromitites from ophiolites, including those from the Oman ophiolite, are of subarc origin.

Keywords: laurite, PGM, chromitite xenoliths, Takashima, subarc chromitite