

## Structural and petrological analyses of Imono peridotite body, Sambagawa metamorphic belt, SW Japan

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Imono peridotite body in the Sambagawa high-pressure/low- temperature metamorphic belt is a few hundred meter-scale dunite body with some degree of serpentinization. Microstructures in this body vary from relatively coarse granular texture to fine-grained intensely sheared texture. Olivine crystal preferred orientation pervasively shows (010)[001] pattern, which is B-type fabrics of Jung and Karato (2001). Higashi-Akaishi peridotite body also has B-type olivine fabrics developed under 750-800C and above 2.8GPa conditions. Imono peridotite body has many structures, which are comparable with those in Higashi-Akaishi body.

The Imono body is petrologically characterized by olivine values ( $Mg\#$ ) of  $100Mg / (Mg+Fe) = 90-94.5$  and chromite values ( $Cr\#$ ) of  $100 Cr / (Mg+Fe) = 80-97$ , spinel  $TiO_2=0.01-0.18wt\%$ . It suggests that they have boninitic chemical composition, resulting from cumulate from a high-depleted boninitic melt. Since Boninite appears to occur under 1250C and 0.3-0.8GPa condition, Imono peridotite body could have occurred at such very high temperature and shallow condition.

As a consequence, tectonic evolution of Imono peridotite body can be summarized as follows. The dunites of Imono peridotite body have been generated in relation to boninitic magma at shallower level (less than 0.3-0.8GPa). Subsequently, Imono body has been flowed to the deeper level of the mantle wedge up to above 2.8GPa along a subducting slab, where Imono body has been trapped within metamorphic oceanic materials. Eventually, Imono body were exhumed and outcropped within the Sambagawa metamorphic rocks.