

Temperature-pressure paths deduced from chemical zoning of garnet from the Sambagawa metamorphic belt, central Shikoku

Mutsuko Inui[1], Mitsuhiro Toriumi[2]

[1] Geological Institute, Univ. Tokyo, [2] Complexity S and E., Univ. Tokyo

Chemical zoning in garnet provides data to deduce temperature and pressure changes during garnet growth, assuming chemical equilibrium, through differential thermodynamic method. Composite zoning of garnet found in the vicinity of the Iratsu metagabbro mass, central Shikoku, were also analyzed to extract the T-P change due to the emplacement of the tectonic block. Paths derived from garnet with normal zoning showed heating and compression, which indicated that high peak temperature was achieved during the subduction stage. Composite zoning indicated growth interruption and cooling in the midst of the growth. It is suggested that the tectonic block was incorporated into the Sambagawa belt during the subduction stage and caused surrounding rocks to flow.