

Stability and crystal structures of silicate perovskites and their solubility relations

Kiyoshi Fujino[1]; Hiroyuki Izumi[2]; Yasutomo Shizuku[3]

[1] Divi. of Earth and Planetary Sci., Hokkaido Univ.; [2] Earth and Planetary Sci., Hokkaido Univ; [3] Earth Sci.,Hokkaido Univ.

<http://www.ep.sci.hokudai.ac.jp/~fujino/>

Studies on the stability and structures of silicate perovskites and their solubility relations are important to understand the mineral composition and dynamics of the lower mantle. Syntheses and crystal symmetries of several silicate perovskites including MgSiO₃, FeSiO₃ and CaSiO₃ are discussed with related to their tolerance factors. In addition, solubility relations between MgSiO₃ and FeSiO₃, and CaSiO₃ and FeSiO₃ are also discussed with the temperature and/or pressure dependencies.