Determination of densuty of subducted oceanic plate in the lower mantle

Shigeaki Ono[1]

[1] IFREE, JAMSTEC

Mineral chemistry of normal-type mid-oceanic ridge basalt (N-MORB) was investigated under pressures of up to 52 GPa and temperatures of 2060 K by a laser-heated diamond anvil cell experiment, with an angle-dispersive X-ray diffraction using synchrotron radiation source (SPring-8, Japan) and a 6-8 type multi-anvil press using sintered diamond. We measured the volumes and chemical compositions of minerals in the subducted oceanic crust at high pressures and high temperatures, and estimated a density of subducted MORB up to a depth of 1300 km in the lower mantle.