

Local structure transformation of liquid and solid phases in AgI under high temperature and high pressure.

Akira Yoshiasa[1]; Osamu Ohtaka[2]; Maki Okube[1]; Hiroshi Arima[3]; Hiroshi Fukui[2]; yoshinori katayama[4]

[1] Earth and Space Sci., Osaka Univ.; [2] Earth and Space Science, Osaka Univ; [3] Earth and Space Sci., Osaka Univ; [4] JAERI

Diffraction and XAFS experiments were performed under high temperature and high pressure using a large-volume press and synchrotron radiation from Spring-8. Local structure and Anharmonic effective pair potentials, $V(u)=au^2/2+bu^3/3!$, around I ions in liquid and solid phases in AgI under pressure were investigated by the EXAFS and XANES methods. Coordination number for I ion in liquid phase changes gradually from four fold to six fold. The statistical distribution of Ag in solid phases and ionic conduction mechanism was discussed based on the results of XAFS and diffraction experiments.