

Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

©2011. Japan Geoscience Union. All Rights Reserved.



SMP045-05

Room:301B

Time:May 24 15:15-15:30

Exploratory studies on state observation of magma by neutron imaging

Hiroshi Arima^{1*}, Toru Inoue², Jun Abe¹, Takanori Hattori¹

¹Japan Atomic Energy Agency, ²GRC, Ehime Univ.

Water is one of the important volatile components of the Earth. In low pressure condition, the silicate component bearing liquid and water bearing fluid can be distinguished by the existence of the immiscible region, and hydrous solidus can define clearly. In higher pressure, however, the immiscible region should be disappeared to form miscible region.

Main obstacle to observing such a phenomenon is weak contrast difference between magma and fluid. The main advantage of neutron imaging technique is that light elements can be detected in silicate melt such as magma. In this presentation, we report preliminary results of neutron imaging method at BL11 of MLF/J-PARC, which is a neutron beamline dedicated for neutron science under high pressure and high temperature conditions.

Keywords: high pressure and high temperature, silicate melt, neutron imaging