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

SIT039-P07 Room:Convention Hall Time:May 24 14:00-16:30

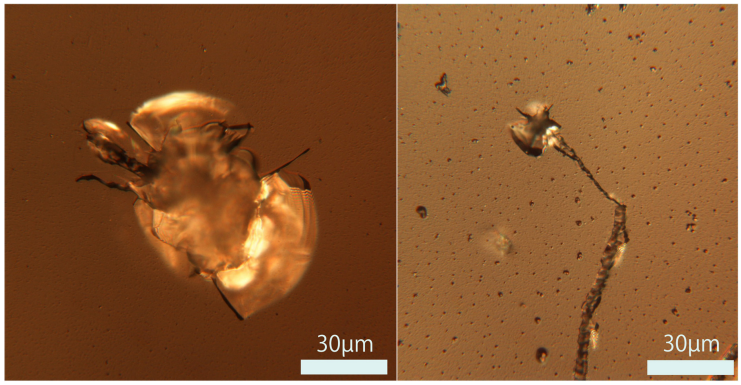
Rapid pressure solution of point-loaded quartz in H2O fluid at a sub-critical condition

Yusuke Moriya[1*], Yasutomo Omori[1], Toshiaki Masuda[1]

[1]Inst. Geosci., Shizuoka Univ.

We performed a pressure-solution experiment of single crystal quartz perpendicular to the c axis loaded with a triangular pyramidal corundum indenter within H2O at 350 C and 25 MPa. The specimen was finally polished with abrasive aluminum gel of about 60nm diameter. The specimen was put on a corundum indenter. Then, water temperature and pressure was raised up to 350 C and 25MPa with a constant H2O flow of 5.0 g per minute. After keeping this condition for 215 minutes, temperature and pressure were released to room condition.

We observed the speciment with an optical microscope, a confocal laser scaning microscope, and an atomic force microscope. The point loaded part of quartz are widely dissolved as shown in Figure. At the poster, we explain precisely what we did.



Keywords: quartz, pressure-solution, point-contact, super-critical fluid