

## Pseudotachylyte in the Shikanoshima Granodiorite at the northwestern part of Shikanoshima Island, north Kyushu

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The Shikanoshima Island is in aftershock region of the West off Fukuoka Prefecture Earthquake that occurred on March 20th 2005, and between hypocenter and the Kego fault system. Many fractures, which have been formed at various depth and age, are recorded in Cretaceous plutonic rocks in this island (Yuhara et al., 2005, 2006). Thus, analysis of process of these fracture will provide important data for prediction of the Kego fault activity. The fractures in the Shikanoshima Granodiorite exposed at the northwestern part of the Shikanoshima Island are divided into four groups: fractures filled with aplite, faults filled with green fault rock, faults associated with cataclasite, and faults filled with zeolite vein (Yuhara et al., 2006). Based on the crosscut relationships of these faults and the mineralization along fault planes, the formation process of the fractures involves four stages; stage1: formation of fracture filled with aplite, stage2: formation of minor fault with green fault rock, stage3: formation of minor fault with cataclasite (left-lateral strike-slip faulting), stage4: opening of the minor fault with cataclasite (formation of zeolite vein by hydrothermal activity). The minor fault with cataclasite was formed by activity of the Iki and/or Muromi Faults, because strike of these minor faults are N-S and are different from that of the Kego fault system (Yuhara et al., 2006).

The pseudotachylytes have been found from the western part of cataclasite zone reported by Yuhara et al. (2006). These pseudotachylytes are black to dark-green in color and composed of fault veins and injection veins. These veins vary from a few mm to 10 mm in thickness. They consist of angular fragments of quartz, feldspar and biotite, and some fine-grained materials. The melting-quenching textures including microlite, chilled margin and crystals with embayment, have not been found in pseudotachylyte veins. These textural results suggest that the pseudotachylytes were formed by crushing but not by melting. The pseudotachylytes were formed after formation of cataclasite (Stage3), before hydrothermal activity (Stage4) at about 15Ma (Yuhara et al., 2005, 2006).