New estimation method of temperature of subaqueous pyroclastic rocks -Textural analysis of microcrack in volcanic glass-

Kazuyuki Akaishi [1], Takaaki Shimada [2], Teiji Yamazaki [3]

[1] Natural Science, Osaka Kyouiku Univ., [2] Pure and Applied Sci.,Osaka Kyoiku Univ, [3] Natural Sci.,Osaka Kyoiku Univ

http://www.sci.osaka-kyoiku.ac.jp/nsystem/akaishi/

Texural analysis of pyroclast reveals whether pyroclastic rocks settled in subaqueous region and whether pyroclast had high temperature. But, quantitative analysis and experimental study of water-quenching pyroclast not exist until this study. This study was carried out to describe and to classify microcrack in glass shards. Water-quenching experiment using natural glass shard indicate that "close type" microcrack formed at temperature over stress point and under glass transition point, and "Open type" microcrack formed temperature above glass transition point. These result can be applied to estimate settling temperature of pyroclastic rocks.