

Juvenile material in volcanic ash erupted during the initial stage of volcanic activities

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In order to facilitate identification of juvenile material in volcanic ash erupted during the initial stage of volcanic activities, we examined vesiculated volcanic glass erupted from Unzen volcano in 1991 and volcanic rock in Unzen volcano by SEM and microscope observation. The vesiculated glasses were not included in such pre-existed volcanic rock. Then we measured refractive indices of the vesiculated volcanic glass as well as hydrated volcanic glass from AT(22-25ka) and Handa pyroclastic-flow deposits(80ka). As the refractive indices kept the same range after annealing, the vesiculated glass is considered to be unhydrated, indicating juvenile material from ascending magma before its appearance.