

Biomineralization in pyroclastic flow deposit

Motoharu Kawano[1], Katsutoshi Tomita[2]

[1] Fac. Agri., Kagoshima Univ, [2] Earth and Environmental Sci., Kagoshima Univ

<http://chem.agri.kagoshima-u.ac.jp/Shokuryo/soil/index.html>

Biomineralization in a pyroclastic flow deposit in southern Kyushu was investigated to verify the evolution and transformation of minerals in the Earth surface environment by biological interaction. The pyroclastic flow deposit contains variable amounts of allophane as a abiotic weathering product. In addition, it was found that the deposit also contains microbiogenic non-crystalline silicate minerals consisting of Al, Si, and Fe (Al/Si=0.6-1.5, Fe/Si=0.04-1.4). The formation of these microbiogenic minerals was confirmed on the cell surface of most bacteria which was estimated to 4×10^8 - 2×10^9 cell/g.