

3D Shape and Inner Texture of the experimentally-reproduced Flame Structure

*Wataru Kojima¹, *Souta Urayama¹

1. Saitama Prefectural Kasukabe High School

We observed the flame structure at Jogashima in Miura Peninsula, during a geological excursion in club activity. However, the three-dimensional structure could not be elucidated in the field survey. Therefore, we conducted a reproduction experiment of the flame structure and studied how to form it. We made an alternating strata of white volcanic ash and black volcanic ash in a water-filled tank and vibrated it to reproduce the flame structure. We scraped off the bedding plane, every 3mm thickness parallel to the layered surface. We collected data from 22 photographs of scraped surface to create the three-dimensional diagram, and considered the process of forming it. In conclusion, we thought that the flame structure was formed by coarse-grained particles of white volcanic ash mixed with water, because they were moved by vibration, spouting upward.

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