

Paleomagnetism and rock magnetism of Nishiyama old kilns of Shino old kiln complex

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Sue wares are produced during the 5-10th century in the many part of Japanese islands, which was followed by the posterior and developed potteries. Sue wares were baked in the closed semi-underground or full-underground kilns with high temperature and anoxic environment. Therefore, the main magnetic mineral remaining is magnetite and it is thought to be very suitable for paleomagnetic analyses and there have been many paleomagnetic achievements.

Shino old kiln complex is located in the west of Kyoto old capital and includes over 100 old kilns. They were operated mainly in the 8-11th century, which follows the main period of the Sue-mura and other Sue-ware complexes. Paleomagnetic results from Shino kilns are expected to fill the gap between Sue-ware period and the new-generation potteries after the 11th century.

Here we report the paleomagnetic results from Nishiyama 1-1 and 1-2 old kilns in the Shino group. The paleodirections from the two kilns show a difference, which indicates the gap of the operated dates. Actually the archaeological investigations of the pottery morphology and stratigraphy of the ash field also show the same result that the 1-2 kiln is half-of-century newer than the 1-1 kiln.

The age of the kilns estimated by matching of the direction onto the legacy geomagnetic secular variation curve (Hirooka, 1977) is different from the archaeological age. However, in case of using our new secular variation model, there is a consistency between paleomagnetic and archaeological ages.

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