

Archeological material and archeo-sediment analysis using luminescence method

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Thermoluminescence (TL) and optically stimulated luminescence (OSL) methods have served important roles in providing a chronology in support of archaeological science studies. These methods have been used for dating, and assessment of firing temperatures.

For this study, TL dating of a burnt block was performed. The burnt block was found at the Tako-Gunga ancient country office site in Gunma, Japan. The site is granary of an ancient country office that was destroyed by fire as result of the archeological excavation. The date of burning shows evidence of fire, because TL signal is reset by heating. Quartz inclusion method was used to estimate the paleodose and achieve TL dating. Results suggest the TL age as 1.29 ± 0.25 ka. The horizon at which the burnt block was found was below the tephra layer (Asama-B), inferred as A.D. 1108, which means that this TL age is consistent with stratigraphy.

Keywords: archaeological science studies, dating, assessment of firing temperatures, thermoluminescence, optically stimulated luminescence