

CHARACTERIZATION OF ANCIENT BURNT RICE EXCAVATED
IN THAILAND ARCHAEOLOGICAL SITESK. Won-in¹, T. Sako², W. Pattanasiriwisana³, S. Tancharakorn³, and P. Dararutana^{4*}¹*Department of Earth Sciences, Faculty Science, Kasetsart University, Bangkok 10900 Thailand*²*The 3rd Regional Office of Fine Arts, Phra Nakhon Sri Ayuttaya 10300 Thailand*³*Synchrotron Light Research Institute, Nakhon Ratchasima 30000 Thailand*⁴*The Royal Thai Army Chemical Department, Bangkok 10900 Thailand**Keywords: ancient Thai burnt rice, SRXRF, SEM-EDS***e-mail: pisutti@hotmail.com*

Rice is the main foodstuff for about half of the world's population, especially in Asia [1]. In Thailand, it is the essence of life. Archaeological evidence which based on the paddy rice revealed that rice has been planted in northeastern area of Thailand more than 5,500 years ago. The burnt rice grains were found in various archaeological sites in Thailand which related with the religious ceremony and the home prosperity [2]. In this work, the ancient burnt rice from Nakorn Nayok, Suphan Buri and Prachin Buri Provinces was elementally analyzed using micro-beam XRF based on synchrotron radiation. SEM-EDS was carried out to characterize the structure and composition. IR spectroscopy was also used to study the chemical composition and bio-molecular structure. The grains were oblique in shape with a rough surface. It was found that major elements contained C, Si, Ca and Al. Other trace elements such as Ti, Mn, Fe, Cu and Zn were also

detected. The IR spectra gave some information about the presence of molecular bonds.

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References

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