

## **MINERAL CHEMISTRY AND EARLY PROTEROZOIC <sup>40</sup>AR/<sup>39</sup>AR AGES OF SYNKINEMATIC HORNBLENDENES SOUTH OF THE RED RIVER SHEAR ZONE IN VIETNAM**

<sup>1</sup>NAM, T.N., <sup>2</sup>HYODO, H., <sup>2</sup>ITAYA, T., <sup>3</sup>MATSUDA, T. and <sup>1</sup>TORIUMI, M.  
<sup>1</sup>Geological Institute, the University of Tokyo, Tokyo, Japan. <sup>2</sup>Research Institute of Natural Sciences, Okayama University of Science, Okayama, Japan. <sup>3</sup>Faculty of Science, Himeji Institute of Technology, Himeji, Japan.

Hornblendes from orthogneiss and amphibolite samples, which were collected from pre-Mesozoic metamorphic belt south of the Day Nui Con Voi - Red River shear zone in Vietnam, were analyzed chemically and chronologically by EPMA and Ar/Ar methods. Hornblendes in the gneiss and the amphibolite have similar average compositions. However, the Fe<sup>3+</sup> content of hornblende is heterogeneous in a thin section though total Fe is nearly the same among the analyses. The rim of each crystal is higher in Fe<sup>3</sup>/(Fe<sup>3</sup> + Fe<sup>2</sup>) ratio than the core. This suggests that the hornblendes have suffered significant oxidation, in particular for the gneiss. Ar/Ar analyses yield plateau ages, which are the same for two hornblende grains of the amphibolite (2056 ± 14 and 2044 ± 21 Ma), but vary among three grains of the gneiss (1977 ± 19, 2089 ± 14 and 1873 ± 13 Ma). All grains of both samples have excess ages in the first few fractions on low temperatures and depleted ages between the excess and plateau spectra. The Ca/K ratios indicate some disturbed phases for the lower temperature spectra but the depleted ages are also derived from hornblende phase. These facts suggest that hornblende in the gneiss has experienced significantly partial argon loss by oxidation and/or thermally activated argon diffusion process. However, the gneiss and amphibolite have recorded the Early Proterozoic tectono-metamorphic event in hornblende crystal except for its rim part.