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Raman and photoluminescence spectra of Precambrian zircon in Kamiaso-conglomerate

Tomoko Handa[1], Hiroyuki Kagi[2], Mamoru Adachi[3]

[1] Lab. Earthquake Chem., Grad. School Sci., Univ. Tokyo, [2] Lab. Earthquake Chem., Grad. School Sci. Univ. Tokyo, [3] Nagoya University, University Museum

This study searched for spectroscopic changes of zircon resulting from radiation damage and impurities. Zircon samples were from Kamiaso, Gifu, Japan. We focus on four main Raman bands of zircon. It was reported that the 1002 cm-1 band becomes broader and shifts toward lower wavenumber with increasing radiation-damage. Similar positive correlation was observed for all other bands. This result suggests a possibility of Raman geochronometer for radiation-damaged natural zircons.