

The 429th Geodynamics Seminar

Diamond? from ultrahigh pressure chromitites from Japan

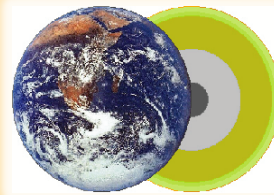
Dr. Hiroaki Ohfuji (Associate Professor, GRC)

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Abstract

Diamonds occur not only in kimberlites and lamproites, but also in some ultra-high pressure metamorphic rocks such as of Kokchetav massif, Kazakhstan and Erzgebirge Germany usually as microcrystalline particles. Microdiamonds have also been found recently in chromitite from Luobusa ophiolite of Tibet. Chromitite is an igneous cumulate rock composed mostly of chromian spinel and olivine and occurs commonly in mantle peridotite as a member of layered intrusions or as nodular-like masses referred to as “podiform”. The podiform chromitite from Luobusa ophiolite contains many microdiamonds as well as coesite, moissanite (SiC), etc. and is thus thought to be of deep origin (deeper than 150 km).

Recently, Prof. T. Nishiyama and his students of Kumamoto University found many syngenetic micro-inclusions in chromitites collected from Higo and Nishisonogi metamorphic belts in Kyushu, Japan. They reported that some of those micro-inclusions are rich in carbon and show a broad but intense Raman peak at 1332 cm^{-1} which is characteristic to the T_{2g} mode of diamond in addition to another broad peak at 1580 cm^{-1} assignable to the E_{2g} mode of graphite. These results suggest that the inclusions likely consist of a mixture of diamond and graphite, and the chromitite samples from the two metamorphic belts may be of deep origin. I have been involved in the project to find direct evidence for the occurrence of diamond grains in those chromitite samples. In this talk, I will give you a brief introduction to diamondiferous chromitites and then describe the present situation of the project, although no diamond grains have been identified so far.

詳細は当センターホームページ: <http://www.grc.ehime-u.ac.jp/> をご覧ください

問い合わせ先: 出倉 春彦 (TEL:089-927-8408, e-mail:dekura.haruhiko.mf@ehime-u.ac.jp)