Geodynamics Seminar

第313回ジオダイナミクスセミナー

Condition of oxygen vacancy substitution in $(Mg,Fe)SiO_3$ perovskite

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主催：愛媛大学地球深部ダイナミクス研究センター
日時：1/13（金）午後 4時30分～
場所：総合研究棟 4F 会議室

Abstract

It is widely accepted that $(Mg,Fe)SiO_3$ perovskite is the most abundant mineral in the Earth's lower mantle. $(Mg,Fe)SiO_3$ perovskite can contain a small amount of Al, and the Al substitution mechanisms in $(Mg,Fe)SiO_3$ perovskite have at least two types. The first type is Tschermak substitution of $Mg^{2+} + Si^{4+} \rightarrow 2Al^{3+}$, and the second type is the substitution by oxygen vacancy as $2Si^{4+} \rightarrow 2Al^{3+} + Vo$. Kojitani et al.(2009) reported the existence and the stability of $Ca_2AlSiO_{5.5}$ perovskite with oxygen defects. On the other hand, Ojima(2011) reported the possibility of the existence of $(Mg,Fe)2AlSiO_{5.5}$ perovskite with oxygen vacancies. In this study, I examined whether pure Fe-free $Mg_2AlSiO_{5.5}$ perovskite can be synthesized or not in anhydrous and hydrous conditions at 23-25GPa and 1600 ℃. The results will be reported.

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