

Review of petrological studies on olivine-bearing gabbro and troctolite: Implications for formation of the oceanic lower

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Recent study on the oceanic lower crust implies that the hybridization of peridotite and basaltic melt is one possibility for the origin of the lower crust, especially for the olivine-bearing lithologies. Their texture, mineral and bulk rock chemistry suggest that some of the olivine-bearing gabbroes are not simple cumulate from basaltic melt, but they require ultrabasic melt that is rich in Mg and Cr. Lithostratigraphy of the olivine-bearing gabbroes also show that those rocks are related to the more mafic, sometimes ultramafic rocks. This new model must be the important constraint of the formation of the oceanic lower crust. In this presentation, recent studies of the olivine-bearing gabbroic lithologies in ophiolites and ocean floor samples will be reviewed.

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