

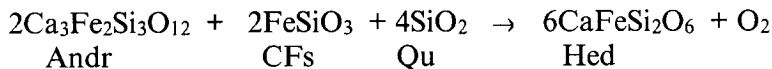
S.K. Simakov

Geological Faculty, St.-Petersburg University, Universitetskaya emb. 7/9, St.-Petersburg, 199034, Russia, e-mail:simakov@vap.usr.pu.ru

OXYGEN FUGACITY AND FLUID ESTIMATION FOR METAMORPHIC ROCKS ON THE BASIS OF GARNET-CLINOPYROXENE OXYGEN BAROMETER

By nowadays the oxidation state of the Earth crust is studied in less degree then that of the Mantle. There are many fluid inclusions data of granulitic and pelitic rocks (Turet & Dietvorst, 1983). But there is a lack of reliable oxygen barometers for this rocks.

Model of garnet-clinopyroxene oxygen barometer for granulitic and eclogitic rocks was developed on the basis of the reaction:



The model was checked on Carroll and Wyllie (1989) and Skjerlie and Johnston (1996) experimental data synthesized at 900-1030° C, 10-15 kbar and nearly QFM buffer. By this method oxygen fugacity and equilibrated fluid compositions were calculated for Alpine, Norwegian, Indian and another granulites, pelitic shifts and eclogitic rocks and compared with yearly experimentally obtained fluid inclusion data.

Reference

Turet J. & Dietvorst. P. 1983. J. Geol. Soc., 140, 635-649.

keywords: oxygen barometer, granulites, eclogites