



The Nordic Countries invite you to The 33rd IGC

INTERNATIONAL GEOLOGICAL CONGRESS OSLO 2008

August 6 – 14th

StatoilHydro

Main sponsor

[Home](#)

[Search Abstracts](#)

[Author Index](#)

[Symposia Programmes](#)

[Sponsors](#)

[Help](#)

[MPM-13 Inclusions in minerals](#)

Kumdykolite, an orthorhombic polymorph of albite, from the Kokchetav ultrahigh-pressure massif, Kazakhstan

Pouyan Shen, *Institute of Materials Science and Engineering (Taiwan)*

Shyh-lung Hwang, *Institute of Materials Science and Engineering (Taiwan)*

Hao-tsu Chu, *Central Geological Survey (Taiwan)*

Tzen-fu Yui, *Institute of Earth Sciences, Academia Sinica (Taiwan)*

J.G. Liou, *Department of Geological and Environmental Sciences, Stanford University (United States)*

Nikolay V. Sobolev, *Institute of Mineralogy and Petrology, Siberian Branch of Russian Academy of Sciences (Russian Federation)*

Kumdykolite, an orthorhombic polymorph of albite, was first identified by analytical electron microscopy in association with diopside, quartz/cristobalite, phengite/phlogopite, an un-identified aluminosilicate, calcic amphibole, dolomite, calcite, or talc as micron-scale mineral inclusions in omphacite of eclogite from the Kumdy Kol, Kokchetav ultrahigh-pressure massif, northern Kazakhstan. The unit cell parameters of kumdykolite were determined to be $a = 8.24(1) \text{ \AA}$, $b = 8.65(1) \text{ \AA}$, and $c = 4.84(1) \text{ \AA}$ ($V = 346.17 \text{ \AA}^3$, $Z = 2$).

Its space group could be either $P2_{1n}$ or $Pmnn$. Analogous to svyatoslavite, which is an orthorhombic metastable polymorph of anorthite, kumdykolite is also presumed to be a metastable phase formed at high temperatures with rapid cooling and in the absence of water. A tentative scenario is further postulated that the formation of kumdykolite may result from infiltrated melt-omphacite interaction when the Kokchetav massif exhumed from mantle depths to the base of the crust.