

Petrogenesis dan Geokimia Batuan Igneus Jalur Tengah, Semenanjung Malaysia

Abstrak

Kajian pluton Jalur Tengah dijalankan dengan tumpuan kepada Kompleks Igneus Stong dan Kompleks Igneus Benom bertujuan untuk menentukan jenis-jenis batuan, petrografi dan kandungan mineral, cirian geokimia, pengelasan batuan dan proses petrogenesis yang berlaku dalam evolusi batuan. Integrasi maklumat-maklumat ini digunakan untuk mensintesiskan model intrusif batuan dan pembentukkannya. Kompleks Igneus Stong dibahagikan kepada Pluton Berangkat, Pluton Noring dan Pluton Kenerong. Ketiga-tiga pluton ini ditafsirkan berasal daripada magma induk yang sama berdasarkan tren geokimia dan pengelasan batuan. Ia dikelaskan sebagai batuan metalumina dengan minor peralumina, granit jenis-I dan terkelas sebagai siri shoshonit hingga kalk-alkali kaya-K dengan sekitaran tektonik selepas orogenik. Kompleks Igneus Benom pula terdiri daripada batuan siri alkali dan siri kalk-alkali. Tren geokimia dan usia radiometri dua siri batuan ini menunjukkan mereka berasal daripada dua punca magma yang berbeza. Batuan siri alkali terdiri daripada gabro-gabro alkali, piroksenit, diorit-diorit kuarza, sienit-sienit kuarza dan monzonit kuarza. Ia dikelaskan sebagai batuan metalumina, granit jenis-I, shoshonit dan mengandungi kandungan LILE yang tinggi, terutamanya Ba dan Sr. Batuan siri kalk-alkali terdiri daripada granit dan granodiorit berbutir kasar porfiritik hingga sederhana halus sama saiz butiran. Tafsiran petrogenesis menunjukkan Kompleks Stong berpunca daripada peleburan separa metabasalt hingga metatonalit dan diperkayakan oleh bahan mantel. Ia menghablur dan membentuk Pluton Berangkat yang mengalami semula peleburan separa membentuk Pluton Noring dan baki leburan kemudiannya membentuk Pluton Kenerong. Batuan siri alkali Kompleks Benom pula ditafsirkan terhasil daripada pencampuran magma bes (berkemungkinan bahan mantel) dengan magma asid yang terhasil daripada peleburan separa metabasalt. Kaitan batuan di lapangan dan cirian geokimia menunjukkan bahawa model tektonik secara patahan kerak "slab breakoff" adalah sesuai digunakan bagi menjelaskan proses petrogenesis Kompleks Benom. Batuan siri kalk-alkali berusia mutlak lebih tua berbanding siri alkali. Tren geokimia menunjukkan ia terhasil daripada peleburan separa metagranit dan metagreiwak. Oleh itu, ia menunjukkan pengelasan campuran antara granit jenis I dan jenis S.

Petrogenesis and Geochemistry of the Igneous Rock of the Central Belt, Peninsular Malaysia

Abstract

This study investigates the petrology, geochemistry and petrogenesis of the Central Belt Igneous Rock, primarily the Stong and Benom Igneous Complex. The Stong Complex is divided into three units, namely Berangkat, Noring and Kenerong Plutons. The geochemical results showed that all the plutons possibly originated from the same magma. The rocks of the Stong Complex are I type with shoshonite to high K calc alkali affinities and are metaluminous to peraluminous in term of their A/CNK values. The Benom Complex consists of two different series namely alkaline and calc-alkaline. The geochemical and geochronological data suggested that both units have different origins. Alkaline rock series consists of gabbro to alkaline gabbro, pyroxenite, diorite to quartz diorite, syenite to quartz syenite and monzonite to quartz monzonite and is classified as metaluminous, I-type granite, shonshonitic series of high content of LILE, especially Ba and Sr. The calc-alkaline rock series consists of granite and granodiorite. Petrogenetic study suggests that the Stong Complex derives from partial melting of meta-basalt to meta-tonalite and enriched with mantel component. The magma crystallized to form the Berangkat Pluton which then by partial melting to produce the Noring Pluton and the remaining liquid formed the Kenerong Pluton. Alkaline rock series of the Benom Complex was resulted from the mixing of basic magma (probably mantel component) with the acidic magma from the partial melting of meta-basalt. Field evidence and geochemical characteristic shows that the slab-break off model is suitable to explain the tectonic scenario for the Benom Complex. The age dating of the calc-alkaline rock series show that it was older compared to the alkaline rock series. These findings reveal that it originated from the partial melting of meta-granite and meta-greywacke.

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**PETROGENESIS DAN GEOKIMIA BATUAN IGNEUS JALUR TENGAH
SEMENANJUNG MALAYSIA : KOMPLEKS IGNEUS STONG, JELI
KELANTAN DAN KOMPLEKS IGNEUS BENOM, KUALA LIPIS, PAHANG**

Field of Study : **GEOLOGY**

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