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## The magmatic differentiation sequence of the Palong Pluton, Negeri Sembilan/Pahang (Urutan pembezaan magma granitoid bagi Pluton Palong, Negeri Sembilan/ Pahang)

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The Palong Pluton located along the Negeri Sembilan-Pahang border covers an area of about 250 km<sup>2</sup>. This north-south trending pluton is surrounded by Triassic sediments of the Gemas Formation. It can be broadly divided into three main types, viz: Kemayan Granite (medium-grained megacrystic biotite granite), Lui Granite (medium-grained equigranular biotite granite) and the Serting Granite (Leucogranite).

Petrochemically, these granite types are peraluminous as indicated by the mol  $Al_2O_3 / (CaO + Na_2O + K_2O) > 1$  and  $Al - (K + Na + 2Ca) > 0$ .

The chemical variation diagrams show the distinctive order of magmatic differentiation.  $SiO_2$ ,  $TiO_2$  and Zr are used as differentiation index to indicate the fractional crystallization. The stages of evolution are from primitive Kemayan Granite through Lui Granite and finally, to the highly evolved Serting Granite. The triangular diagrams of Rb-Ba-Sr, U-Sr-Rb and Zr-U-Th are used to explain the progress of magmatic differentiation. The magmatic fractional crystallization is best shown in the Palong Pluton, which is relatively free from hydrothermal alteration.

The Palong Pluton is classified as an I-type granite. The magnetic susceptibility ranges from 0.05 to  $6.7 \times 10^{-3}$  SI Unit. The magnetic susceptibility values are relatively high, on the whole, and this pluton is considered as magnetite-series granite. The immobile elements, such as Rb, Y and Nb are used in the Pearce diagram to determine the tectonic setting of granite. It, thus, appears that the Palong Pluton was emplaced in the domain of syn-Collisional Granite (syn-COLG) and Within Plate Granite (WPG).

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