## Petrology and geochemistry of the granitoids of the Lumut-Segari-Pantai Remis area, Perak

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Based on texture and mineralogy the granitoids of the Lumut-Segari-Pantai Remis area can be divided into 4 units.

Unit 1 (porphyritic biotite adamellite) covers almost all of the study area. This unit is characterized by its coarse grained highly porphyritic to medium grained slightly porphyritic texture. Biotite is the main mafic mineral with some primary muscovite.

Unit 2 (coarse grained porphyritic biotite granite) can be found along road cuts approximately one km from Lumut town. Modal analyses show that the feldspar ratio exceeds 0.66. Biotite is the main mafic mineral. A number of shear zones are found in this unit.

Unit 3 (coarse to medium grained porphyritic tourmaline adamellite) is characterized by the presence of tourmaline. This unit outcrops at the northern part of the study area and it shows a higher differentiation index value compared to units 1 and 2.

Unit 4 (non porphyritic granite) consists of micro-granite and aplite is characterized by the absence of phenocrysts. Aplite is present as dykes. Generally this unit is a moderate to fine grained leucogranite.

Based on <sup>87</sup>Rb/<sup>86</sup>Sr ratio, Bignell and Snelling (1977), suggested that the age of the granitoid in the Lumut-Segari-Pantai Remis area is late Triassic.

Geochemical and petrographical studies of all the 4 units suggest that the granitoids of the area originated from the same magma. There is a relative decrease in the degree of differentiation from Unit 4 to 3, 2 and 1. The granitoid in the area is peraluminous and classified as S-type and the granitic magma of the area is believed to be derived from the melting of sediments with high Na<sub>2</sub>O. Variation diagrams show that the minimum melting temperature of the granitic magma is 685°C at 2 kbar pressure.

Xenoliths that are present are metasediments and congeneric. The petrographical and geochemical studies of the rock units and their relationships with the xenoliths suggest that there was only one phase of granitoid intrusion in the Lumut-Segari-Pantai Remis area.

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