

## Heavy mineral pattern in stream sediments of Kuala Krai area, Kelantan

WAN FUAD WAN HASSAN\* & MUHAMAD HAFIZ BIN JUHARI

Geology Programme, School of Environmental and Natural Resources Sciences  
Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor  
\*Email Address: wafutu@ukm.my

A study of the heavy minerals in the stream sediments in an area to the south of Kuala Krai, Kelantan was carried out. The lithology of the area consist of Late Paleozoic sedimentary rocks of the Gua Musang Formation being intruded by an igneous complex consisting of acid igneous rocks from diorite to granite. A total of 16 heavy mineral samples were collected by panning. The samples were dried, sieved and later the light minerals were removed by a heavy liquid. The mineral composition of the heavy mineral sample was estimated by point counting under a binocular microscope. Common major minerals such as ilmenite, zircon and magnetite were identified by their physical properties whereas the more uncommon ones such as hornblend and cassiterite were identified by XRD. The heavy mineral fractions were also run through a Frantz Isodynamic Magnetic separator to find out the magnetic resistivity pattern of the individual sample. Each sampel composition was plotted onto an ilmenite-zircon-hornblende triangular diagram. Result of the analyses show the common major minerals present in almost all sampls are ilmenite, zircon and hornblend while minor minerals are magnetite, monazite, xenotime, garnet, pyrite, mica, cassiterite, etc. The magnetic resistivity disitribution patterns show high peaks at the 0.2-0.4 ampere fraction in almost every sample indicating the presence of ilmenite and hornblende while the less magnetic fraction dominated by zircon is less prominent. Hornblende which is ubiquitous in the igneous rocks here is detected in the heavy mineral, and to some degree, can point to the sediment provenance.