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**Penggunaan nombor Niggli untuk membezakan formasi-formasi  
metasedimen klastik gred sederhana hingga tinggi**  
(The use of Niggli numbers to differentiate medium to high grade clastic  
sedimentary formations)

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Dengan menggunakan data geokimia metasedimen klastik dari terain metamorf Tanah Tinggi Scotland dan Kompleks Metamorf Pranburi-Hua Hin, Thailand, trend akibat pengendapan masih dapat dikenal meskipun batuan-batuan tersebut termetamorf pada gred sederhana hingga tinggi. Parameter ujian yang digunakan ialah nilai-nilai Niggli *si* melawan *al-alk*, *si* melawan *alk*, *si* melawan *fm* dan *si* melawan *fm/(fm+alk)*. Parameter-parameter ini telah digunakan untuk menguji kesamaan atau kelainan sifat tiga formasi metasedimen klastik di Semenanjung Malaysia yang dikatakan berusia protolitos berlainan iaitu syis Grik-Jeli (Ordovisi-Silur), formasi Kenny Hill (Devon-Karbon) dan Syis Taku (Perin-Trias). Didapati ketiga-tiganya berbeza seperti yang ditunjukkan oleh kecerunan lengkung perkaitan-perkaitan di atas, juga perbezaan julat nombor Niggli. Teknik ujian yang sama mungkin boleh digunakan untuk menentukan status formasi-formasi metasedimen klastik yang masih diliputi kontroversi, seperti misalnya syis Dinding, syis Kuala Lumpur, syis

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Pilah dan syis Jelevu. Ia juga boleh digunakan bagi mencadangkan taraan sedimen bagi formasi-formasi metamorf gred sederhana hingga tinggi, bagi membantu pengkaitan stratigrafi.

Geochemical data of clastic metasediments from Scottish Highlands metamorphic terrain and Pranburi-Hua Hin Metamorphic Complex, Thailand have been utilised to show that geochemical trends due to sedimentation are still recognisable despite metamorphism at medium to high grade. The test parameters are Niggli numbers  $si$  vs  $al-alk$ ,  $si$  vs  $alk$ ,  $si$  vs  $fm$ , and  $si$  vs  $fm / (fm+alk)$ . These parameters were also used to reveal the similarity or difference between three clastic metasedimentary formations, of different protolith age, which occur in Peninsular Malaysia, i.e. Grik-Jeli schist (Ordovician-Silurian), Kenny Hill formation (Devonian-Carboniferous) and Taku schist (Permian-Triassic). The test shows that the formations differ from each other, as shown by the different gradients of the correlations, as well as the ranges of the Niggli numbers. It is possible to extend the use of the same technique to ascertain the status of some controversial clastic metasedimentary formations, such as Dinding schist, Kuala Lumpur schist, Pilah schist and Jelevu schist. It can also be used to infer the sedimentary equivalent of a medium to high grade metamorphic formation, to ease stratigraphic correlation.