

New geochronological constrains on high-pressure meta-plagiogranites in the Yuli belt, Taiwan: results from LA-ICP-MS zircon dating

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We analyzed zircon separated from high-pressure meta-plagiogranites in the Chinshuichi mélange unit with LA-ICP-MS facilities. The mélange contains blocks of serpentinite, meta-gabbro, pillow-structured metabasite, epidote amphibolite and meta-plagiogranite in a matrix of meta-sediments. The meta-plagiogranites commonly contain meta-mafic enclaves, indicating an intrusive protolith origin. Glaucophane and omphacite occur in some of the meta-plagiogranites (Keyser et al., 2016). From the LA-ICP-MS analyses, three samples yielded mean $^{206}\text{Pb}/^{238}\text{U}$ dates of 13.1 ± 1.9 Ma, 15.7 ± 0.4 Ma and 16.3 ± 1.4 Ma. On the basis of zircon petrographic features (e.g. no obvious overgrowth in CL images), we conclude that the dates represent timing of magmatic crystallization of the meta-plagiogranites. These zircon ages place geochronological constraints on a late-stage shallow intrusion in a mid-Miocene oceanic section, which is likely of origin from the South China Sea domain.

Keywords: ophiolite, mélange, high-pressure metamorphism