

## **Zircon and Monazite U-Pb Geochronology of Aquamarine-bearing Yamrang Pegmatite from Eastern Nepal Himalaya**

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The Yamrang Pegmatite from the Ikhabu Pegmatite Field of Eastern Nepal Himalaya is Nepal's primary source of aquamarine with five internal zonations. Lack of deformation in the Ikhabu Pegmatite Field indicates that it is younger than Himalayan Miocene metamorphism; however, the age of Yamrang Pegmatite and the Ikhabu Pegmatite Field has not been dated before. This study reports the U-Pb zircon and monazite geochronology from Yamrang Pegmatite and the Ikhabu Pegmatite Field. Zircon grains were separated for U-Pb dating from Yamrang Pegmatite and Wairung Pegmatite of Ikhabu Pegmatite Field. They were anhedral to euhedral with inherited cores and oscillatory rims, with an average size of around 100  $\mu\text{m}$ . The Wairung Pegmatite sample shows a mean age of middle Miocene (26 zircon spots, 13.6 Ma, MSWD = 0.8). However, two samples from Yamrang Pegmatite about 15m apart show a large age discrepancy, which contradicts geological evidence that Yamrang Pegmatite is younger than Himalaya's Miocene deformation. The Yamrang Pegmatite sample from zone 2 shows the upper Triassic mean age (20 spots, 235 Ma, MSWD = 2.2), while zone 3 shows the upper Ordovician mean age (17 spots, 451 Ma, MSWD = 1.5). To ensure consistency, monazite dating of two samples from Yamrang Pegmatite was done. Monazite crystals were subhedral to euhedral with dark and light patches in the BSE image with an average size of around 100  $\mu\text{m}$ . The zone 1 sample shows the mean age of the middle Miocene (36 spots, 12 Ma, MSWD = 2.9), and zone 5 shows the mean age of the late Miocene (23 spots, 11 Ma, MSWD = 2.6). Hence, we concluded the crystallization age of Yamrang Pegmatite and thus the Ikhabu Pegmatite Field to be of middle to late Miocene (11-13 Ma), which is consistent with the geology of the Ikhabu Pegmatite Field.