Monazite and zircon dating of the plagiogranites in the Mawat Ophiolite Complex, NE Iraq

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The Mawat Ophiolite Complex (MOC) in NE Iraq belongs to the Zagros Orogen (ZO) which is a member of the Alpine - Himalayan Orogenic Belt. The ZO is $\sim$ 3000 km long and was formed during the closure of the Neo-Tethyan Ocean and subsequent oblique collision between the Afro-Arabian plate and the Eurasian continents. The belt contains numerous ophiolites, e.g, the well-known Troodos and Oman ophiolites. The MOC displays the classical ophiolite sequence, which consists of three units; volcanic rocks on the top, mafic rocks in the middle and ultramafic rocks in the lower part. Nine leucogranite and plagiogranite dykes have been discovered over an area 4km^2. The width of these dykes varies from a few tens of centimetres to tens of metres, and they have intruded into massive and altered dunites rocks. The dykes are mostly peraluminous and plot the trondhjemite field in the normative An-Ab-Or diagram.

U-Pb dating was conducted on zircons and monazites from the dykes using a Laser-Ablation-ICP-MS on separated grains muonted in epoxy. The preliminary results indicate that the MOC was formed at c. 95-92 Ma contemporaneously with and within the same tectonic framework as the other, more well studied members of the Tethyan ophiolites, (e.g., Dilek and Thy, 2009). This is the first U-Pb age estimate of the plagiogranites in the MOC.

References:

Dilek, Y & Thy, P. 2009. Lithos 113, 68-87.