

## Nd and Hf isotopic compositions of the Oman ophiolite extrusive rocks

Anzu Ikei<sup>1\*</sup>, Ryuichi Shinjo<sup>2</sup>

<sup>1</sup>Dept. Physics & Earth sci., Univ. Ryukyus, <sup>2</sup>Dept. Physics & Earth sci., Univ. Ryukyus

The peri-Arabian ophiolite belt, from Cyprus in the west, eastward through Northwest Syria, Southeast Turkey, Northeast Iraq, Southwest Iran, and into Oman, marks a 3000 km-long convergent margin that formed during a Late Cretaceous (ca 100 Ma) episode of subduction initiation on the north side of Neotethys. The Oman ophiolite is the largest and best exposed ophiolite in the world that preserves the original structure of oceanic lithosphere formed at the Neotethys ridge system with fast spreading rate. The volcanic sequence in the Oman ophiolite are divided into three units from lower to upper: V1 (Geotimes Unit), V2 (Alley Unit) and V3 (Salahi Unit). There is a debate on the lava stratigraphy for the Lasail Unit.

This study reports new data on Hf<sup>177</sup>/Nd isotopic systematics for volcanic rocks from northern Oman ophiolite. On the trace element compositions, samples can be divided into three types; N-MORB type, ultra-depleted type, and U-shaped type. These broadly corresponds to V1, V2 and boninite, respectively. In a eHf(t) vs eNd(t) plot, all Oman lavas within the modern Indian ocean MORB-type mantle domain, suggesting that magma source region has Nd and Hf isotopic composition similar to those of Indian ocean MORBs. This is compatible with the previous suggestion based on Pb isotope systematics, that Neotethyan ocean domains share the Indian ocean MORB type mantle. Although most samples have eNd > 8, few samples have low eNd (< 6). Low eNd lavas include boninite-type and ultra-depleted type rocks; they have higher La/Sm values. It is likely that sediments as subduction components involved in petrogenesis of these low eNd values.