

## Petrographic record of epidote-eclogite transition to lawsonite eclogite in Naga Hills Ophiolite

\*Vipfezol Kiso<sup>1</sup>, K Sajeev<sup>1</sup>, Prakash Chandra Arya<sup>1</sup>

1. Centre for Earth Sciences, Indian Institute of Science, Bangalore, India

Naga Hill Ophiolite represents the eastern Indian continental margin and is vital to understand India-Asia subduction and exhumation mechanism. Lawsonite eclogite is reported for the first time in Naga hills Ophiolite. The metamorphic mineral assemblage includes omphacite - garnet - phengite - rutile - epidote - lawsonite. Omphacite and rutile inclusions in epidote and phengite inclusions in the garnet (~ 5 cm) core suggest that peak metamorphism occurred in epidote-eclogite stability field. Lawsonite is found to be locally in equilibrium with aegirine augite and garnet rim. Lawsonite inclusion is absent at garnet cores but is found to be texturally stable at the rim and in the matrix. The unique textural preservation of the epidote breakdown reaction to lawsonite in matrix and garnet rim indicates that the rock is at a transitional stage to a stable lawsonite eclogite stage. Preservation of lawsonite eclogite is crucial in understanding the geodynamics of the eastern margin of the Indian continental plate.

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