

MEASUREMENT AND ANALYSIS OF EMISSIVITY OF TYPICAL ROCKS COLLECTED FROM YARLUNG ZANGBO OPHIOLITE ZONE, SOUTH TIBET, CHINA.

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The study area, Yarlung Zangbo Ophiolite Zone is located in the south part of Qinghai-Xizang (Tibetan) Plateau, China. It has attracted the great attention of geoscientist both from home and abroad because it is the key region to understand unique geologic history and crust-mantle structure of Qinghai-Xizang (Tibetan) Plateau. The emissivity of the rock samples collected from Yarlung Zangbo Ophiolite Zone have been measured in laboratory using a field portable micro Fourier Transform Interferometer (μ FTIR). The results indicate that the position of band center for low emissivity band (LEB), which results from interatomic stretching vibration of silicon and oxygen bound in the crystal lattice, has great difference for different rocks. The siliceous sedimentary rocks have strong double LEB and the position of band centers are at $8.1\mu\text{m}$ and $9.2\mu\text{m}$ respectively, the basic rocks (basic lava and basalt) have strong LEB near $9.5\mu\text{m}$, and the position of LEB for the ultrabasic rocks (harzburgite, hornblende and peridotite, etc.) is located near $10.3\mu\text{m}$. We also found that the moss covered in the surface of rocks has an effect on the absorption depth of LEB. It is possible that we develop an effective method to distinguish lithologic characteristics of the ophiolite suite and estimate quantitatively the SiO_2 content of various rocks developed in the ophiolite zone using thermal infrared multispectral remote sensing data like ASTER TIR data.