

## The History of Metamorphism of Eclogite from the Sanbagawa Belt : Application of an ESR Microscopy

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ESR microscope observation was performed for quartz eclogite developed at Higashi-akaishi located in central Shikoku, which belongs to globally famous the Sanbagawa Belt. In past, various research and experiments were reported on metamorphism of eclogite, but this research by ESR microscopy is a new attempt.

The ESR microscope has a capability to image the spatial distribution of unpaired electrons, which is based on electron spin resonance (ESR) that electron spin in magnetic field absorb microwave. This method has an advantage in imaging the difference of valency. In this experiment, the spatial distributions of Mn<sup>2+</sup> and Fe<sup>3+</sup> on the surface of eclogite were imaged. The image of Mn<sup>2+</sup> showed heterogeneous distribution: The distribution of Mn<sup>2+</sup> obtained by ESR did not correspond to the position of garnets that have a tendency to take MnO in the process of recrystallization. However localization of Mn<sup>2+</sup> was observed at the part of omphacite.

It is possible that this heterogeneous distribution of Mn<sup>2+</sup> reflects the history of metamorphism of this eclogite. The estimated process will be discussed.