

Earth and Planetary Materials Science Seminar (No. 1873)

日時：2015 年 11 月 12 日

Date & Time : Nov 12th 2015, 13:10–15:30

場所：地学生物共通講義室

Room : Earth Science & Biology Lecture Room

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Speaker: Tatsuki Tsujimori 辻森 樹

(Group: Petrotectonics Research Group 岩石地質学, E-mail: tatsukix@m.tohoku.ac.jp)

Title: Understanding the geodynamic processes at convergent plate boundaries—from mineral equilibrium/kinetics scale to plate tectonic scale

High-pressure and low-temperature (HP–LT) metamorphic rocks such as blueschists and glaucophane-bearing eclogites have been documented for almost half a century in the Earth's Neoproterozoic–Phanerozoic orogenic belts. As a key proxy of oceanic plate subduction along a cold geothermal gradient marking ancient convergent plate boundaries, these metamorphic rocks have been intensively studied from various viewpoints, and at scales ranging from single crystals to mountain belts. Research interest in such HP–LT metamorphic rocks has not only included field geology, petrology, geochronology and high-pressure experiments, but current attention also reflects their significance regarding geochemical components of subduction-zone magmas, dynamics of the subduction-zone channel overlying the descending slab, and the rheology + seismology of the subducting oceanic crust. However, much still remains to be done for a more interdisciplinary understanding of Phanerozoic modern style of oceanic subduction and continental collision.

Today's speaker is a newly-arrived professor of geological sciences at the Center for Northeast Asian Studies who specializes in metamorphic petrology and regional tectonics, with a particular research focus on the petrogenesis and geochemistry of HP/ ultra-HP –LT metamorphic rocks; see the page 5 of "[The Newsletter CNEAS](#)". The strength of his research lies in combining detailed fieldwork and geological observations with quantitative petrological and geochronological approaches aimed at understanding the geodynamic processes at convergent plate boundary (**Fig. 1**). Currently, his research is aimed at petrogenetic study of fossilized subduction zones in Southwest Japan, Far East Russia, Central America, and East Africa, at integrated petrologic/geochemical investigation of jadeitite “jade” (a peculiar gemstone), and at pilot study of ultra-HP minerals within “eclogitic” diamonds in kimberlite. In this seminar talk serving also as a self-introduction, he will present some of his current research topics in informal contexts.

Keywords: self-introduction, subduction zone metamorphism (metasomatism), petrotectonic indicator, new insights and perspectives

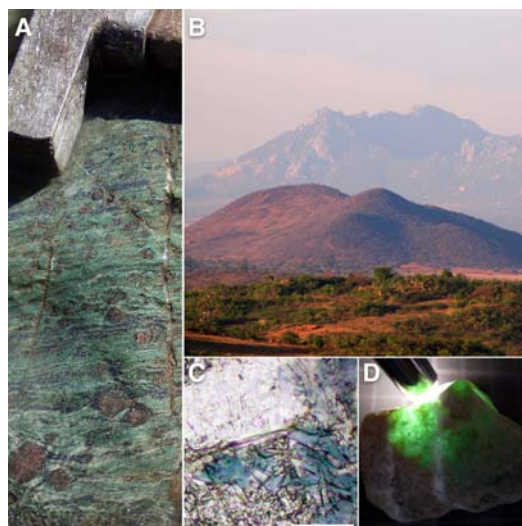


Figure 1. Exploring of the past convergent plate boundaries. (A) Outcrop of lawsonite eclogite in central Guatemala. (B) Panorama view of Paleoproterozoic orogenic belt in Tanzania. (C) Optical photomicrograph of lawsonite blueschist; scale bar = 0.1 mm. (D) Gem-quality jadeitite “jade” from SW Japan.