**Current status of consortium study of silica-containing Hayabusa-returned particle.**

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**Introduction:** About 730 particles of Hayabusa-returned sample of 10 to 300 $\mu$m size are collected by Extraterrestrial Sample Curation Center (ESCuC) in Astromaterials Science Research Group (ASRG) of JAXA, so far [1]. The preliminary examinations and international AOs revealed that Itokawa particles were equivalent to equilibrated LL chondrites [e.g. 2-10]. Some of the Hayabusa-returned particles show unique characteristics including mineralogy, composition, structure, and/or size. Therefore, consortium studies have been conducted by team of ESCuC in order to obtain maximum scientific results from such particles [11-13].

We proposed a new consortium study of particle RB-QD04-0069 containing silica [14]. This is the only particle which contains silica coexist with other silicate minerals among catalogued Hayabusa-returned samples, so far. Silica is widespread in ordinary chondrites, but its abundance is very low (usually < ~1 vol %) [15]. Therefore, the particle RB-QD04-0069 is precious and it should be investigated as consortium study. Evidence of shock processes have been revealed from Hayabusa-returned particles by previous studies and shock and/or thermal history of the particles were discussed [2, 8-10]. Because silica has many polymorph, it should be useful indicator to constrain thermal and/or shock history of the particle [16]. In this paper, we report current status of the consortium study of particle RB-QD04-0069.

**Sample and Analytical flows:** RB-QD04-0069 is a particle with a size of 33 μm, which was captured from the first touchdown site on Itokawa. The particle consists of olivine, high-Ca pyroxene, low-Ca pyroxene, plagioclase, and silica revealed by initial description by FE-SEM-EDS.

The XRD analysis will provide us crystallographic information of silica and other silicate minerals. Moreover, textural information of the particle will be obtained by the SR XCT imaging. After the synchrotron radiation analyses, the particle will be embedded in epoxy resin EPON-812, followed by polishing until the surface of the particle is exposed. Then, oxygen isotope compositions will be measured by SIMS in order to identify the origin of the particle. Furthermore, FE-EMPA analysis and TEM observations will be carried out on the particle to obtain important constraints on formation condition of the particle, especially its shock and thermal history.

**Current status:** The particle RB-QD04-0069 was picked up from a slide glass in pure nitrogen-filled environment clean chamber in ESCuC by quartz glass probe using manipulator system last year. Then, the particle was tried to attach to the top of C fiber with epoxy resin Embed-812 using manipulator system in a clean booth at ESCuC for Synchrotron radiation (SR) XRD analysis and SR XCT imaging. However, during the procedure, the particle RB-QD04-0069 was failed to attach to C fiber and fell down on the slide glass or Al foil on heater used for the handling.

By optical microscope and SEM-EDS analysis, three candidate particles were found from Al foil on the heater. We plan to analyze these candidate particles by detailed FESEM-EDS to narrow down the candidates. Then, the surrounding region (Al foil) of the candidates will be cut by FIB at Kyoto University and attach them to C fiber using Pt depo for SR-XRD and XCT analysis to identify true particle using characteristics of silica, olivine, pyroxene, and plagioclase.

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