（Form 2-2）

Report for Onsite Training in Earth-Space Frontier Science

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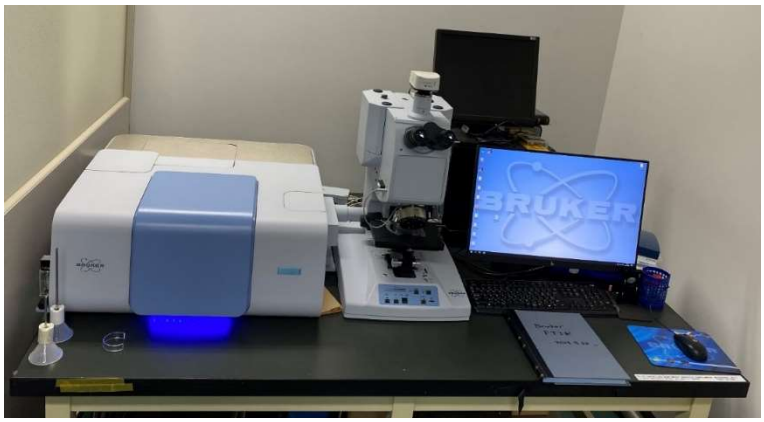
As an onsite training in Earth-space frontier science, I participated in a joint research conducted online with Professor Li Zhang in School of Earth Sciences and Resources, China University of Geosciences from June 7th to June 20th. This online joint research is a special activity for the onsite training program during the COVID-19 pandemic. But we were still able to discuss experimental details and results conveniently, and the program was going on efficiently. The purpose of this collaborative work is to investigate the high-pressure and high-temperature spectroscopic properties of minerals occurring in the Earth's subduction zone. And the experimental results may provide evidences for the stability of minerals in the deep Earth. I've started this collaborative research with Prof. Zhang last year before I became a Ph.D. student in the University of Tokyo, and we've already got some preliminary results and conclusions based on the previous experimental investigations. This time I conducted *in-situ* high-pressure FTIR spectroscopic measurements in our lab and obtained data with improved quality. Prof. Zhang did the *in-situ* high-temperature Raman spectroscopy experiments. This is my first time to get to know how to conduct *in-situ* high-temperature experiments using diamond anvil cells (DACs). Prof. Zhang showed me the experimental equipment and made detailed explanations about the experimental procedures and how the system works. Now the data analysis has been performed, discussions have been made together with my Ph.D. mentor, Professor Hiroyuki Kagi, and a manuscript is being prepared.



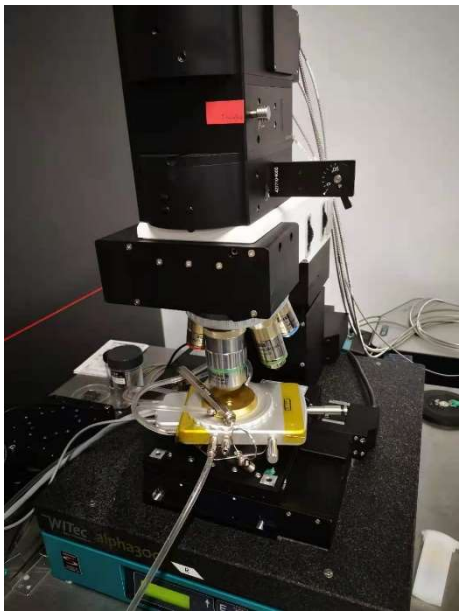


Figure　An FTIR spectrometer equipped with a microscope system installed at Geochemical Research Center, The University of Tokyo (left) and a Raman spectrometer equipped with a microscope system and a heating stage installed at Institute of Geology and Geophysics, Chinese Academy of Sciences (right).