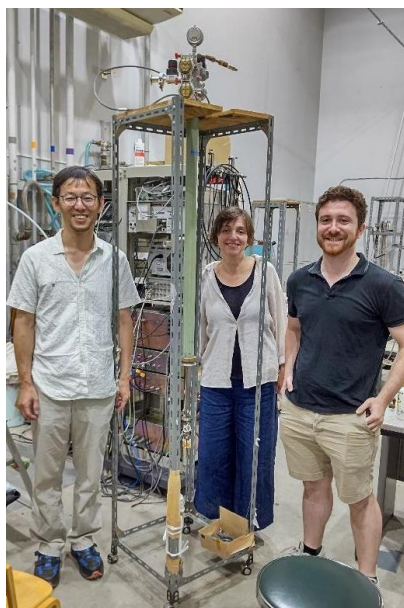


外国人客員所員を経験して

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In May - July 2024 I had an opportunity to stay at ISSP hosted by Professor Minoru Yamashita. We extended and strengthened a collaboration that we started a few years ago with my first visiting professor 6-month stay at ISSP. This time our research was aimed on the study of the phase diagram of two-dimensional organic Mott insulators using resistivity measurements. We used uniaxial strain to tune the properties of materials from Mott insulator into a ferroelectric state. Prof. Yamashita and Dr. Takeda were amazing hosts and mentors to my graduate student Jesse Liebman who joined the project. We tested a strain device designed by Jesse and applied it to the resistivity measurements at Prof. Yamashita's lab. Our first results demonstrate the tuning of the temperature of the Mott insulating phase transition in κ -(BEDT-TTF)₂Hg(SCN)₂Br to low temperatures on the application of strain which increases the anisotropy of triangular lattice. The success of the application of our strain device to the resistivity measurements in fragile

crystals of organic Mott insulators gives a promise for the future science we can do using uniaxial strain as a tuning parameter of these materials.

ISSP provides an inspiring scientific environment which I enjoyed during my stay. I have strengthened collaboration and enjoyed discussions with Prof. Mori. Theory seminars and discussions with Prof. Oshikawa and his guests were another highlight of my stay.



I took the advantage of the excellent spectroscopic equipment in Spectroscopy Lab at ISSP. Here I could perform infrared reflectivity and transmission measurements of small crystals in a wide spectral range. I would like to thank Prof. Matsunaga for his support in using the Spectroscopy Lab.

While staying at ISSP I had excellent discussions and visits to the other parts of the University of Tokyo. I had an opportunity to give a seminar at Hongo Campus and discuss joint projects with Prof. Nakatsuji.

As a whole, these two months were an extremely fruitful time for my research, and I am looking forward to the future scientific exchange with my colleagues from ISSP.