

Short-Term Research in Kyoto University

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I am currently working as a researcher in Institute of High Energy Physics, Chinese Academy of Science, China. I successfully applied for 2022 International Collaborative Research Program of Institute for Chemical Research (ICR) and I joined the group of Prof. Yuichi Shimakawa, the Advanced Solid State Chemistry Laboratory, for the research during November 14, 2022 - December 21, 2022.

During my 39-day stay in the group, I carried out my research on high-pressure synthesis and ionic conducting study of novel Na-antiperovskites containing hydride and cluster anions as solid electrolytes in batteries. I used a specific high pressure apparatus namely ELEPHANT to prepare two compounds, $\text{Na}_3(\text{H})(\text{SO}_4)$ and $\text{Na}_3(\text{NH}_2)(\text{SO}_4)$. Despite technical problems at initial stage, I solved the problems and carried out the experiment successfully with the help from members in the Shimakawa group. Apart of the sample synthesis, I was allowed to visit J-PARC twice to conduct neutron power diffraction measurement. It was really a great chance for me to learn the neutron diffraction, and to know the people in J-PARC which will be useful for developing my research network in the future.

In addition to the research activity, I visited some beautiful places in Kyoto during the autumn season. I was very impressed by them, especially a stunning Kiyomizu-dera decorated with red and yellow leaves. Also, I got chances to meet and hang out with friends. It was a splendid time.

I acknowledge financial support from the International Collaborative Research Program, that made my research visit possible. Moreover, I would like to express my sincerest gratitude to Prof. Shimakawa for the opportunity, valuable guidance and discussion during the period in the group. Also I would like to thank all the members of the group for their assistance.

I really hope that I would have chances to come again in the future.

