

## My Research stay at MatSE, Pennsylvania State University

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Through the programme in Institute for Chemical Research (ICR) supporting over-sea research stay of young researchers, I have received a great opportunity to study at the laboratory of Professor Ralph Colby in Department of Materials Science and Engineering (MatSE), Pennsylvania State University (PSU), USA. Professor Colby is world-famous for his research work on structure and dynamics of polymer related materials, in particular the ionomer, a type of polymers carrying ionized groups.

The presence of the ionic groups allows the ionomers to exhibit unique structure and dynamics. A close insight into the research work regarding these aspects is the main purpose of my research stay. During my over-month stay at MatSE, Professor Colby and I have discussed several subjects ranging from current knowledge to future challenges regarding the ionomers. This discussion inspired me to take an interesting research subject; the application of rheo-optical method to discuss separately the effect of ionized group on the glassy and polymeric dynamics of the ionomeric materials. This research may provide us with better understanding of the structural and dynamic details of the ionomers, in particularly the local interactions of dipoles within the ionomeric materials.

I greatly appreciate the ICR's activity for supporting international research of young researchers. This type of activity is also highly valued at MatSE, as I heard from several undergraduate students at MatSE who benefited from the international activities sponsored by MatSE. In the first floor of the Steidle building (the building where MatSE locates), I found a show-window exhibiting souvenirs brought back by the international exchange students. I found “たけのこの里”, a popular cookie available in most of supermarkets in Japan.

A show window exhibiting the souvenirs brought back by the international exchange students of MatSE.

