ICR-iJURC Short-term Exchange Program Report

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For collaborative research with Prof. Ono's group at the Institute of Chemical Research (ICR), Kyoto University, I visited Kyoto University for six weeks. Thanks to the warm welcome and generous support from Prof. Ono, Prof. Shiota, and all group members, this visit was a valuable experience, both academically and personally.

The primary goal of my project was to investigate the interaction between spin waves and charge current in a low-damping metallic ferromagnetic CoFe film. To excite high-wavevector spin waves, I fabricated nanometer-scale antennas on CoFe devices using electron-beam lithography and magnetron sputtering, with the kind assistance of Prof. Shiota and Dongchan Jeong. Spin wave propagation was measured optically using a heterodyne magneto-optical Kerr effect (MOKE) system under applying current. Throughout the project, I optimized the device structure to maximize current-induced effects and systematically studied how charge current influences spin wave dynamics.

In addition to my research, I participated in the winter school of Prof. Ono's group in Gujo City, Gifu Prefecture. The skiing trip was truly enjoyable, and it was a great chance to communicate more closely with the group members. On weekends, I also traveled to several other cities, including Nara, Nagoya, and Sapporo, which allowed me to experience diverse Japanese cultures and foods.

I sincerely thank Prof. Ono, Prof. Shiota, and Ms. Tanaka for giving me this opportunity and for supporting me throughout my stay. I am also grateful to all group members for sharing such memorable and joyful experiences with me. Although my visit was short, it will remain unforgettable. I wish you all the best. Finally, I would like to thank the ICR-iJURC program for funding my visit.