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Dear Nakano-sensei,

It is a great pleasure to write about my stay in your laboratory. I am so grateful to you for the opportunity to work with you as a postdoctoral researcher at the Research Center for Thermal and Entropic Science from October 16th, 2022 to September 30th, 2023. Over the year of my stay, I enjoyed doing the research and gained valuable experience from you and the lab members in the research center.

I started working on the spin crossover of the metal complex under pressure with you and Fukuda-sensei. Although this research field is out of my Ph.D. background and I did not have any experience doing research in the field of magnetic properties, I was happy to do this research because of your guidance and teaching. I always remembered the first day that you gave me a lecture about the important theory related to spin crossover. I am so thankful and lucky to work with you. For this project, we reproduced the metal complex by following literature, and studied its spin crossover behavior under the application of hydrostatic pressures. I have learned how to assemble the high-pressure cell from a technician, and I can measure temperature-dependent magnetic moment under high pressures by using SQUID magnetometer in your laboratory. In the experiment, although I had to overcome experimental problems such as reproduction of the complex, DC centering, and the deviation of signal owing to the effect of the high-pressure cell itself, I eventually achieved the results because of help and suggestions from you and Fukuda-sensei. In addition to this project, I worked on a spin-crossover Mn(III) complex, cubic $\text{Mn}(\text{I}_3\text{taa})$. We successfully found the optimal condition for single-crystal growth of this complex. The cubic crystal structures at different temperatures were determined by a single-crystal X-ray diffractometer in the department of chemistry. Thank you very much for allowing me to operate this instrument. I have learned crystallographic techniques and knowledge of crystallography that have improved my research skills. I also got the opportunity to characterize this complex by using various instruments in the department, such as powder X-ray diffractometer and NMR. I studied magnetic properties and performed theoretical calculations to see the vibrational frequency and d-orbitals energy of this complex. The calculation could have happened because you and Fukuda-sensei helped me so much, even though I don't have experience with it. During the magnetic measurements, I also would like to thank Miyazaki-sensei, who frequently helped me transfer helium and had some discussion on the results.

Apart from doing the research in the laboratory, I had plenty of opportunities to give presentations in both domestic and international conferences. I would like to thank you and the Research Center for Thermal and Entropic Science, Osaka University for the financial support. It was such a great experience for me. I met many professors in various fields of chemistry, such as coordination chemistry and thermodynamic chemistry, enjoyed their

presentations, and gained a lot of new knowledge. I could discuss the experimental results in different viewpoints with the chemists who visited my poster, which would benefit my research. In addition, I received the best poster presentation award in the 26th IUPAC International Conference on Chemical Thermodynamics, which was held in Senri Life Science Center, Osaka from July 30 to August 4, 2023. I would like to specially thank to you and Fukuda-sensei. Without both of you, this award winning would not be possible.

During one year of doing the research, I would like to express my sincere gratitude and thanks to Fukuda-sensei from the bottom of my heart for helping me in every situation. I acquired a lot of knowledge and experience from him. Moreover, I must give special thanks to Matsunaga-san, who is the best secretary I have ever worked with. Thanks for taking care of me and preparing a lot of my documents that helped my stay in Japan went on smoothly. At the research center, I really appreciated the generous hospitality and friendly atmosphere from the lab members. Thank you very much for the warm friendship you have rendered to me. Lastly, I have enjoyed my life working in Japan with you and everyone and have returned to Thailand with unforgettable sweet memories and friendship. I will look forward to continuing the collaborative research works with you and seeing you in Thailand some day.

With my best regards, very sincerely yours,

Sujitra Tunsrichon