

ICR-iJURC Short-term Exchange Program Report

Parinaz Salari

Memorial University of Newfoundland

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I was supported by the ICR-iJURC Short-term Exchange Program and conducted an 89-day research stay in the Laboratory of Polymer Controlled Synthesis, Division of Materials Chemistry, at Kyoto University under the supervision of Prof. Shigeru Yamago.



Prof. Yamago's laboratory is internationally recognized for its expertise in the precise synthesis of strained and curved aromatic molecules, particularly cycloparaphenylenes (CPPs), as well as controlled polymer synthesis. During my stay, I joined a multi-step total synthesis project aimed at preparing a new CPP-type molecule. Building upon the key intermediate which was already synthesized by a master's student in the group, I focused on developing and optimizing the final stages of the synthetic route. I benefited significantly from the lab's excellent infrastructure, extremely fast access to reagents, and dynamic research environment. Under the strong guidance of Prof. Yamago and with valuable input from group members, I made important progress on the project while acquiring advanced synthetic techniques and methodologies used in the Yamago group. This hands-on experience in a leading laboratory greatly strengthened my skills in the synthesis of complex π -conjugated systems.

Outside the laboratory, I actively explored Kyoto by visiting historic temples, hiking scenic trails including the Arashiyama Bamboo Forest, traveling to Amanohashidate and Nara, and making short visits to Osaka-Universal Studio and Nagoya. These experiences offered a rich cultural complement to my research activities.

Overall, this 89-day research stay was a highly rewarding and productive chapter of my PhD. As a PhD researcher, working in Prof. Yamago's group allowed me to expand my synthetic expertise, gain exposure to rigorous Japanese research practices, and build meaningful international connections. I will continue advancing this CPP synthesis project upon my return to Canada, incorporating the knowledge and strategies developed during my time in Kyoto.

I would like to express my sincere gratitude to Prof. Shigeru Yamago for his expert supervision and valuable insights. I am also deeply thankful to the members of the Yamago group for their generous help and collaboration. Finally, I extend my appreciation to Kyoto University and the organizers of the dispatch program for providing me with this outstanding opportunity.

