

The Report of Study on Chirality-sensing Polythiophenes Modified with Optically Active Binding Sites

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I and coworkers have energetically demonstrated three projects on chirality-sensing polythiophenes, selective and sensitive oligosaccharide sensing with polysaccharides in aqueous media, and asymmetric photoreactions with polysaccharides since 2008. This presentation at Université de Strasbourg was focused on the first topic, “Chirality-sensing Polythiophenes Modified with Optically Active Binding Sites”.

Chemical sensor serves as a versatile tool for detecting a range of pollutants in the environment, explosives that threaten homeland security, and hazardous materials for human health, and hence is one of the most vital and challenging topics in current chemistry. The supramolecular approaches to such sensory systems using polymers are of particular significance not only for fundamental science but also for a number of practical applications, since a conjugated polymer is capable of amplifying the binding events, e.g. the efficient quenching of fluorescent polymers, to greatly enhance the signal gain upon interaction with target analytes. I therefore believe that the titled concept and methodology proposed and the results obtained in this project are applicable widely to the other chiral sensing systems and should therefore attract attention of a broad spectrum of chemists working in macromolecular and supramolecular chemistry, chiral recognition, materials science and the related areas. Hence, I feel that the presentation of the present results was the most appropriate method for the

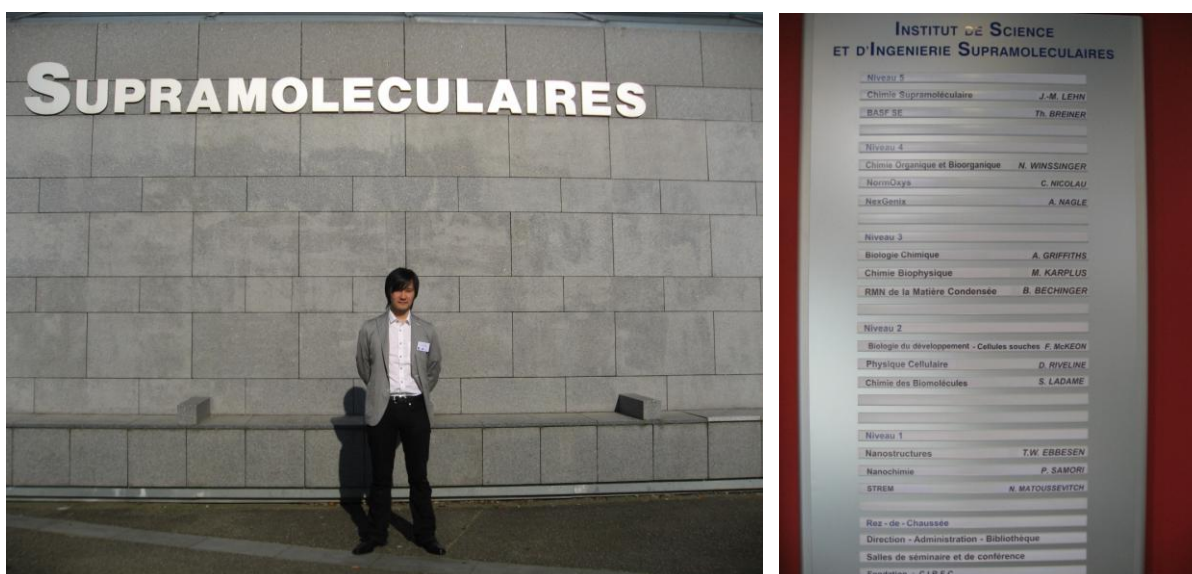


Figure 1. Institute de Science et d'Ingenierie Supramoleculaires

succinct presentation of the concepts of this work to the wide audience at the joint symposium between Université de Strasbourg and Osaka University and may also be suitable for the end and aim of the Global COE (GCOE) Program.

As the symposium was held at Institute de Science et d'Ingenierie Supramoleculaires

(Figure 1) where dedicated to Prof. Jean-Marie Lehn awarded the Nobel Prize in Chemistry 1987 (jointly Prof. Donald J. Cram and Dr. Charles J. Pedersen), I felt proud that my study on supramolecular polymer sensor was made a presentation at such a great institute as one of supramolecular chemists.

During my stay there, I was invited to a lot of parties with very good dishes and wine. Particularly at the welcome party of the first day, all dishes were pizza! but various taste and too delicious (Figure 2). After the symposium, I experienced the excursion of boat tour on a river (Figure 3) and also went sight-seeing to the Strasbourg cathedral to enjoy the French way of life.

Finally, I am grateful to all my coworkers, especially Prof. Yoshihisa Inoue for his appropriate suggestion and continuous encouragement throughout this work since 2008. I would like to thank the GCOE program for supporting my stay in Strasbourg, which was quite exciting and valuable experience for me.



Figure 2. The welcome party of the first day.



Figure 3. The sailing tour.