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## **PREFACE TO HETEROCYCLES ISSUE HONORING THE 80TH BIRTHDAY OF PROFESSOR KAORU FUJI**

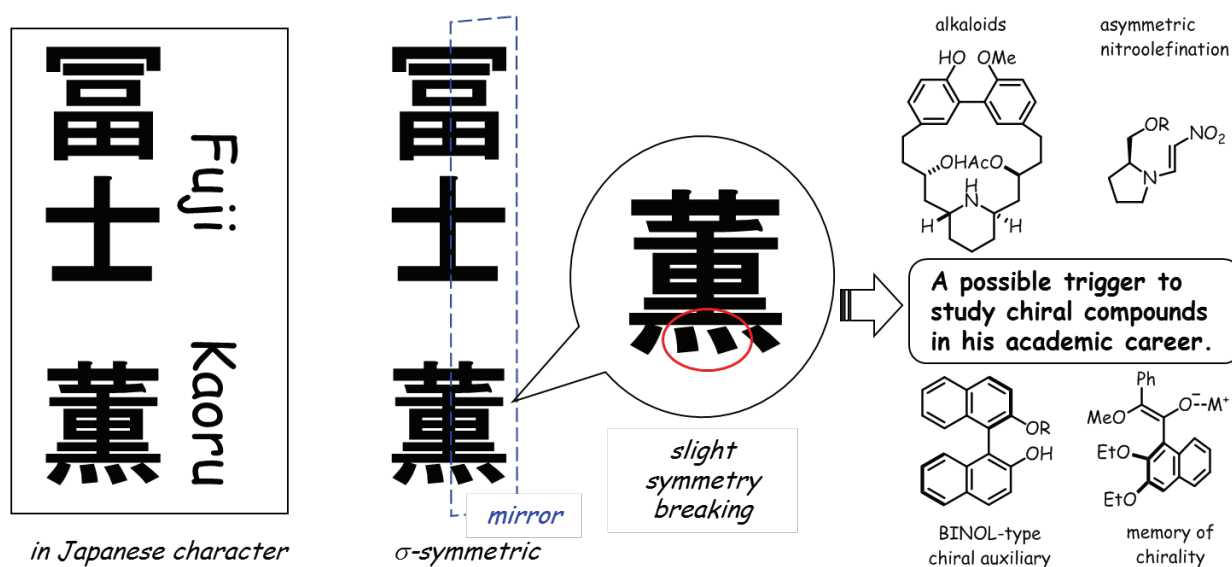
This issue of HETEROCYCLES is dedicated to Professor Dr. Kaoru Fuji, the Emeritus Professor of Kyoto University, on the occasion of his 80th birthday. It is a great pleasure and honor for me indeed to celebrate his “San-Ju”, which is a traditional ceremonial event at the age of 80 in Japan, and to show my sincere respect for his excellent contributions in education and original research in the field of organic chemistry and pharmaceutical sciences.

Professor Fuji was born on February 13, 1939 at Osaka. After graduating from Seiko High School, he entered the Faculty of Pharmaceutical Sciences, Kyoto University in 1957 and obtained his Bachelor's degree in 1961 under the direction of the late Prof. Masao Tomita. After he worked temporarily at Shionogi Pharmaceutical Company, he came back to Kyoto University as a graduate student in 1963 and received his PhD degree under the supervision of the late Prof. Eiichi Fujita in 1970. Soon after, he started his academic career as an assistant professor of Prof. Fujita's group at the Institute of Chemical Research in Kyoto University, where he was promoted to Associate Professor in 1973 and to Full Professor in 1983. During these periods, he worked as a post-doctoral fellow twice in the research groups of Prof. James P. Kutney at the University of British Columbia (1971-1973) and the late Prof. Paul G. Gassman at the University of Minnesota (1981-1982). In 2002, at the age of 63 years old, which is the designated retirement age at Kyoto University, he was appointed as a visiting professor of Kyoto Pharmaceutical University and as a scientific advisor of Otsuka Pharmaceutical Company. In 2004, he moved to Hiroshima International University and contributed to the development of the new Faculty of the Pharmaceutical Sciences as the first Dean. He retired from his academic career in 2009.

Prof. Fuji's achievements have contributed to a variety of areas of organic chemistry, such as isolation and structural assignment of alkaloids and terpenes, total synthesis of heterocyclic natural products, development of new useful reactions including asymmetric reactions, and design of new supramolecules. For his achievement in organic chemistry, he received The Pharmaceutical Society of Japan Award for Young Scientists in 1980, and the Pharmaceutical Society of Japan Award in 1998. Prof. Fuji is not only a great chemist but also a good educator. Many of his students obtained their PhD degree under his supervision and more than 15 of them got academic positions. I joined his research group in 1992 as an undergraduate student and received my PhD degree in 1998 under his guidance. During the time, I was

engaged in the synthesis and evaluation of heterocyclic supramolecules for molecular recognition and the development of asymmetric nucleophilic catalysts. Prof. Fuji has various interests not only in organic chemistry but also in the surrounding area and told me a lot of research ideas. I learned a lot in his group. He also encouraged his students including me because he always enjoyed to discuss with us and respected our ideas, even if the ideas were tiny. I was very impressed by his motto “A playful mind is important in an academic research.” He also likes doing sports and having drinking parties with his students outside of the research time. A good time always goes by around him.

Finally, I would like to introduce my suspicion about the relationship between Prof. Fuji’s name and his research works. His name, Fuji Kaoru, in Japanese-Kanji character is written as ‘富士 薫’ (Figure 1). When a mirror is placed at the center of the combination of the characters, his name has a  $\sigma$ -symmetry (mirror image). However, if you look at the characters carefully, you can find a small broken symmetry in the character ‘薫’. I suspect that Prof. Fuji got an interest in chirality of organic molecules. In the study of asymmetric reactions, only low enantiomeric excess (ee) of the desired compounds can be obtained like characters of his name at the initial stage of the investigation. However, he could achieve high ee in a variety of reactions. I believe that his playful mind and passion to organic chemistry make excellent asymmetric induction.



**Figure 1.** Prof. Fuji’s name in Japanese-Kanji character and its symmetry

On behalf of Professor Fuji’s students and colleagues, I would like to express congratulations and wishes for his good health and happy life with his great good wife, Chizuko-san.

My respected Fuji-sensei, please enjoy the special issue!

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**Kiyosei Takasu** was born in 1970 in Kyoto, Japan. He received his Bachelor and PhD degrees in 1993 and 1998, respectively, from Kyoto University under the direction of Professor Kaoru Fuji. During his PhD course, he spent one year in Professor Duy H. Hua's group at Kansas State University as a visiting researcher (1996-1997). In 1998, he started his academic career as an assistant Professor in the group of Professor Masataka Ihara at Tohoku University, and then was promoted to Lecturer in 2005. After working with Professor Hidetoshi Tokuyama from 2006 to 2007 at the same university, he returned to the Graduate School of Pharmaceutical Sciences, Kyoto University as an associate Professor (Prof. Yoshiji Takemoto's group) in 2007. He was appointed as the Full Professor at the same university in 2011. His research focuses on finding new synthetic methodologies to build strained and/or complex molecules from simple materials. He is also interested in natural product synthesis, bioorganic chemistry, molecular chirality and material chemistry.