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What I have acquired by putting myself in an environment where I could devote myself to research, and through efforts day in and day out

A boy, who loved rockets, grew up and met the world of "combustion study." Blessed with diligent friends, excellent seniors at the lab, encounters with internationally-minded professors and through study abroad, he acquired a researcher's attitude of always making assiduous efforts. Dr. Yokomori puts it emphatically: "Work untiringly, and the way out will surely come into sight sooner or later" even when you are at a deadlock.

What was your childhood like?

As a young boy, I was extremely fond of space shuttles and other rockets. When a rocket is launched into the sky, you see blazing flames from its tail end, don't you? Fascinated by the powerfulness of the flames, I came to take an interest in rockets. As I recall, I may have been interested in combustion as early as those days (Laughter).

My father was running an electrical work company in Tokyo. He took me to work sites from time to time. As a junior high school student, I began to assist my family business in wiring work and equipment installation on site, which naturally awakened my interest in scientific studies.



On the other hand, as an elementary schoolboy I began to attend a tutorial class, where I was awakened to the excitement of solving mathematics problems. When I was an elementary school sixth grader, my mathematical ability reached the college level, for which I was awarded. This event motivated me to study mathematics more and more. Maybe I am a person who can grow when complimented by others (Laughter). My parents seem to have known my character well, so they never urged me to study hard

It was at about the age of senior high school third year that I began to become conscious of my future. Perhaps because of my father's influence, I thought it would be nice if I could advance to electrical engineering department or mechanical engineering department. Although I was prepared to take a year off in the worst case, fortunately I was admitted to Keio University Faculty of Science and Technology to join the Department of Mechanical Engineering.

What was your university life like?

My life had been club activities-centered up to and through my high school days. After entering the university, however, my awareness of life turned around and I began to focus on study. Studying itself was not a headache because I was blessed with good friends, with whom I could compete in a friendly manner. All of my good friends were bright; in fact, three out of four including myself advanced to the doctor's course. Of course, our life was not limited to studying. We often played together and, after having come of age, we enjoyed drinking together almost every weekend, which is a good memory I still cherish.

Why did you take up the study of combustion?

When I visited Professor Masahiko Mizomoto's lab for inspection, seniors at the lab talked about combustion, which aroused my interest in this theme. After joining the Mizomoto lab, I was fascinated by combustion and soon found myself delving into this research theme with heart and soul.

The study of combustion is truly profound. For example, if you are going to simulate a certain combustion phenomenon, you must simultaneously solve problems related to elements such as fluids, heat, diffusion and chemical reactions of substances involved. Depending on the target, it can take more than a month even by using a supercomputer. Moreover, much still remains unsolved in fundamental theories, which makes fundamental research into combustion very exciting. I became increasingly







Creative ideas for research rarely come up all of a sudden. Any good idea can take shape only after making constant efforts.

Takeshi Yokomori

Dr. Yokomori was born in Saitama Prefecture, Japan. He graduated from the Mechanical Engineering Department of Keio University Faculty of Science and Technology in 1998, and then completed the doctor's course at the Graduate School of Science and Technology (School of Science for Open and Environmental Studies) without degree in 2003. In March 2004, he obtained a doctor's degree (Dr. Eng.). Then he successively served as postdoctoral fellow for the Institute of Fluid Science, Tohoku University; research fellow for the Japan Society for the Promotion of Science; and visiting researcher for the Department of Mechanical and Aerospace Engineering, Princeton University of the U.S. In April 2007, he joined Keio University Faculty of Science and Technology as assistant professor, and then assumed the current position as associate professor in April 2013.



inclined to study the basics. This is why I decided to advance to the doctor's course.

Later, from September 2003, I began to work in Tohoku University as a postdoctoral researcher. Experiences I acquired there marked a major turning point in my life. Professor Kaoru Maruta, the boss of our lab, was so internationally minded that renowned researchers frequently visited the lab from overseas to meet him. Encounters with these foreign researchers were truly valuable because I learned the importance of global communication and was able to broaden my perspective.

This motivated me to study abroad; I decided to study at Princeton University for one year from April 2005 as a research fellow for the Japan Society for the Promotion of Science.

How did you find your researcher life abroad?

Honestly speaking, really tough. At the beginning I couldn't find a fixed place to live in, so I had to move from one place to another, asking professors and other acquaintances for shelter for the first two weeks or so. To make the matter even worse, my English communication ability was extremely poor, which almost made me homesick after only two weeks or so (Laughter). I still remember that I had a hard time even opening a bank account.

I found Chinese students here and there on the campus where I learned, but very few Japanese. I could find only one Japanese person in another department. My mentor, Prof. Yiguang Ju, was also Chinese. He is a truly bright person. He is internationally minded as well as logical in thinking and acting. Not only that, he also has a very agreeable personality. I respect him very much as a researcher.

Was it necessary for you to study abroad after all?

Yes. Speaking for myself, I was lucky because I was able to experience a lifestyle that allowed me to have discussions and think together, at any time, with foreign researchers who were thinking only of research around the clock. Because of this valuable experience, my lab at Keio follows the Princeton University style.

I would like to advise those students, who wish to choose a researcher's career, to study abroad as early as possible, preferably by the age of 30 at the latest.

Do you have any creed that you value as a researcher?

Creative ideas for research rarely come up all of a sudden. Any good idea can take shape only after making constant efforts day after day, I believe. Of course, you may sometimes fail. But if you stick to it untiringly, I'm sure the exit will surely come into sight sooner or later. If you capture something exciting in this way, you can appreciate a sense of major achievement. That should be the zest for researchers.

In this connection, my overall impression of Keio students is that they are smart. In a negative sense, they are shrewd. So, if they learn to make constant efforts, there will be nothing to fear. I sincerely hope that they will acquire such abilities.

How are you spending your holidays?

I often go out to countryside onsen hot-spring resorts with my friends. I recently visited Dake Onsen in Fukushima Prefecture. Dake Onsen features hot waters of strong acidity. The open-air hot-spring bath I enjoyed there was really wonderful. Another diversion is drinking Japanese sake. I sometimes drink with my students to relieve accumulated stress.

O Some words from students ... O

• Dr. Yokomori is an earnest, reliable teacher, who readily gives advice whenever we have a problem. What makes him great is his policy; he is kind but never spoils us, leading us to be independent. He is strict when it comes to research, but likes to go on a spree together with us at drinking parties – an unexpected aspect of his personality.

(Reporter & text writer : Madoka Tainaka)

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