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Obsessively fascinated by the excitement of cutting-edge research work, I've charged forward with my researcher's career.

My college life was a truly rewarding one as I could devote myself to research under Prof. Eiji Saito, who made a name for himself for the discovery of “inverse spin Hall effect” – phenomena indispensable to the development of spintronics – and study together with exceptionally bright lab mates. The greatest factor that supported my research life as a student was discussions with Prof. Saito and the fellow lab mates. This experience still remains a pillar of critical importance for ongoing academic pursuit.

What was your childhood like?

Although none of my family members or relatives had good knowledge of or interest in scientific things, they say I was an exception. In fact, as a small boy I was crazy about things like illustrated encyclopedias. I also remember I was an enthusiastic collector of minicar models. As my parents once told me, I was so fond of vehicles that I could identify the type of every single car that passed before my eyes. Yes, I seemed to be a type of boy who became absorbed in anything that captured my interest.

Since elementary school days, I had been good at scientific subjects. So when it came to summer holiday homework, one of my classmates and I tried role sharing – I was responsible for science and math while he took charge of other subjects. That said, I didn't like experiments. It seems I rather liked brain-oriented study.

Did you join any sports?

Yes. I enjoyed soccer in my elementary school days and belonged to the volleyball club as a junior high school student. But I didn't join any sports club during my senior high school days because the teacher who oversaw the junior high volleyball club was so stern with us students, which disheartened me in taking up school club sports anymore. I couldn't afford to enjoy club sports at my high school you might say because “just study hard!” was the top priority and watchword at most public high schools in Aichi Prefecture. That said, the subjects I knuckled down to remained unchanged – mathematics and physics. To look back at those days, it seems I began to have a vague yearning for a researcher's career around then.

My natural course of life should have been to enter Nagoya University located in my home area. But I dared to choose Keio University Faculty of Science and Technology because I wanted to live my own life away from my parents. In the second year at Keio, I advanced to the Department of Applied Physics and Physico-Informatics. Back in those days, I must admit, I had little idea of exactly what area of study I would like to engage in. Anyway, I chose this department because, compared with the Department of Physics, it appeared to offer more options for my future, where I might possibly do something great. The department's harmonious atmosphere also became a decisive factor that drove me to study there.

Did you decide your course of research when assigned to your lab?

To tell the truth, at the time I felt a passion for physics rising in myself again, so I joined the Department of Physics Prof. Tetsuya Sato's lab. In April when I became a senior, however, it happened that Dr. Eiji Saito, who had been a research associate at the Department of Physics, was promoted to Assistant Professor of the Department of Applied Physics and Physico-Informatics and set up his own lab. With this event as an opportunity, I was allowed to join the new lab as a first-generation student. Immediately before establishing his lab, Dr. Saito discovered the “inverse spin Hall effect” phenomena; the new research theme “spin current” intrigued me very much. Furthermore, the following year 2007 saw two spintronics researchers become Nobel Prize laureates. All in all, these events made me go into this field of study with heart and soul.

What first overwhelmed me upon joining the lab was Dr. Saito's exceptional enthusiasm toward, and a profound understanding of, physics. I was truly impressed by Dr. Saito's attitude. Indeed, he always remained in the vanguard of research and spoke with his own words; his understanding was deep and thorough, not superficial at all.

Members of our lab included two of my seniors who followed Dr. Saito and transferred to our lab, and a junior who claimed “My hobby is experiments!” All of these members were so bright that I was greatly stimulated by them.

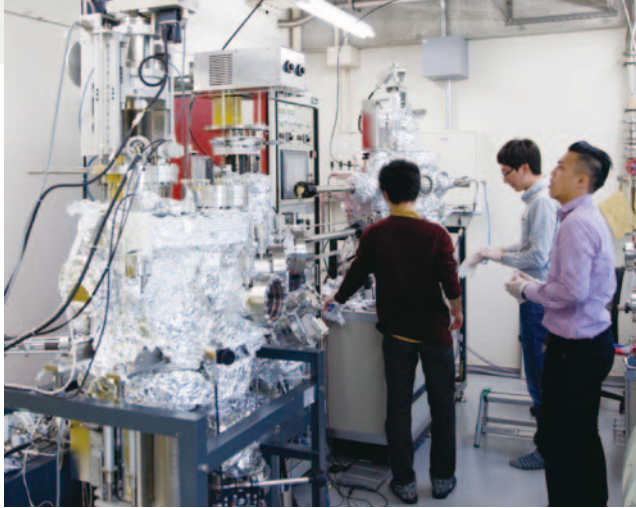
But our lab was only newborn and virtually devoid of equipment for experiments. So we had to borrow it from another facility and conduct experiments on Saturdays and Sundays only. While this adverse condition forced us to study, hold seminars and discussions indoors during weekdays, it had a favorable side as well because it helped us look for new ideas for research and deepen our thinking.

Didn't you take up any pursuits, such as circle activities, other than research work?

I joined the tennis circle as a Keio freshman, but quit it very soon. Before joining the lab, I worked part-time as a cram school teacher and a private tutor, but gave them up when joining the lab because I wanted to concentrate on lab studies. Of course, I sometimes took a breather by going out for drinking with former members of our undergraduate experiment group and with fellow members of our lab.

And yet, you devoted almost all of your student life to research, didn't you?





I may have been a lucky guy. As a newly established one, our lab allowed me to pursue research almost as I wanted. I could also see one achievement after another in the new field of research. So my research life was both truly exciting and rewarding. Once a year or so, I came across unexpected data. It was misty at the beginning, but the moment I was able to understand what the data meant, the mist suddenly disappeared and nearly made me jump for joy! It really was an excitement.

In the second year of my master's course, I built a hypothesis, conducted experiments, made a theoretical model and worked out a thesis – all on my own. By doing so, I could appreciate a sense of great achievement. It seems to me that all these events combined to gradually build up confidence in my future as a researcher.

After all, I wrote well over ten papers (including several joint papers) between the senior and doctoral course years and completed my master's and doctoral courses combined in a short three years.

What an amazing speed! Then you transferred to the Institute of Materials Research, Tohoku University, as an assistant professor, didn't you?

Shortly before I completed my doctoral course, Prof. Saito transferred to Tohoku University. He kindly invited me to come over to Tohoku, so I moved there and began working under Prof. Saito again. Afterward, there was a call from Keio University to

come back. I willingly responded to the offer, which led me to run my own lab since April 2013.

So far my career has been so smooth without a hitch that, to tell the truth, I studied abroad for only three weeks. I learned English conversation for about three months, a period during which I worked in experiments with a postdoc from Cambridge University who came to Prof. Saito's lab. Although I have little difficulty in scientific conversations in English at international academic conferences, I'm not so good at daily English even now (Laughter).

How do you spend your private time?

The year I came back to Keio, I married a woman who was my junior at the lab. Because she found employment in Nagoya, we have been separated ever since the beginning of our marriage.

Living a single life ever since enrollment in Keio, I usually relax by cooking my favorite dishes. For example, I enjoy my creative cooking using canned food (often souvenirs from overseas travelers) and things like preparations for paella and so on. I also try this way or the other, often referring to recipes from "Cookpad" just as I enjoy experiments.

I leave the desk and take a walk outside to refresh myself when my research work is at a loss. Discussing with students can also help me look at things from different angles. In the lab I'm always with students, so, as I did at the Saito lab, I make a habit of catching and inviting a student or two into discussion by saying, "Hey, do you have anything interesting in mind?"

◎ **Some words from students . . .** ◎

● Dr. Ando is still very young – 30 years old – and always deals with us friendly and attentively, putting himself in the shoes of us students. So we can approach him for advice without reserve whenever we need him. For example, if we are troubled with a research task, he is willing to think over it together through discussion to work out a good idea. The study of spintronics is quite a new field, meaning more chances of new discoveries. As such, pursuit of spintronics is really exciting as well as rewarding.

(Reporter & text writer : Madoka Tainaka)

For the full text of this interview . . .

<http://www.st.keio.ac.jp/kyurizukai>

Shedding light on formerly unknown phenomena on my own and for the first time ever . . . This is the joy and excitement of science.

Kazuya Ando

Dr. Ando's specialty is condensed matter physics centering on spintronics. He graduated from Keio University Department of Applied Physics and Physico-Informatics, Faculty of Science and Technology in 2007, completed the master's course at Keio University Graduate School of Science and Technology (School of Fundamental Science and Technology) in 2008 (prior termination), then completed the doctoral course at the same graduate school in 2010 (prior termination). Doctor of Engineering. In 2010 he became Assistant Prof. for the Institute of Materials Research, Tohoku University. In 2013 he served as Assistant Prof. for Keio University Department of Applied Physics and Physico-Informatics, Faculty of Science and Technology and was promoted in 2015 to the current position as Associate Prof. there. From 2013 on he concurrently serves as researcher for the Japan Science and Technology Agency's PRESTO project.

