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## Nothing to fear once you've known "Patterns"

Are you weak in making an ad-lib speech, or are you not?

Associate Professor Watanabe, introduced in this issue, says he is not good at making an ad-lib speech in public without preparing a manuscript. "But I'm good at making presentations at academic conferences," he says. This is because papers that are read at academic conferences have certain "patterns" and he knows them. He says he can read papers without difficulty by preparing the manuscript and practicing it over and over again.

Generally speaking, "new ideas"

required for various research projects never come from out of nowhere. Any new idea is the result of a new research achievement added to the wisdom that has been accumulated by generations of predecessors. As such, the best shortcut for creating a "new idea" is to learn from the footprints of predecessors' endeavors. Dr. Watanabe often puts it like this: "I like reading biographies of great figures of the past because I can learn a lot about how these predecessors strove to create revolutionary ideas."

He continues, "Our students are very bright and armed with the basic academic ability sufficient enough to create such 'new ideas.' So, when dealing with my lab students, I usually like to learn together with them, spending more time to introduce them to 'patterns required for research' rather than teaching knowledge of physics."

"Patterns required for research" to create "new ideas" include: ① how to gather information; ② how to obtain experiment data; ③ how to make presentations at academic conferences; and ④ how to write scientific papers. Dr. Watanabe thus revealed some of the tips for guiding his students, saying, "I can convey these 'patterns' to my students because I've lived twice as long as them and have accumulated much experience."

He continues, "Once they are armed with these 'patterns,' the students, who are sufficiently knowledgeable and have a voracious appetite for learning, will become able to gather up-to-date information and use it effectively to create new ideas." About the research activities with his students, Dr. Watanabe delightfully commented, "It's very enjoyable to be able to work with these enthusiastic young students."

## Science and Technology Information

### Keio's Faculty of Science and Technology celebrates its 75th anniversary in 2014

The KEIO TECHNO-MALL, held in December every year, is an event to widely disseminate achievements of the Keio University Faculty and Graduate School of Science and Technology while serving as a venue for encounters that will promote joint research projects, technology transfer and industry-academia collaboration.

At exhibition booths, visitors will find both researchers as well as students making presentations of their research achievements through exhibits and demonstrations. Every year, this event receives many visitors, including those from industries, government agencies and other universities.

Date: December 5 (Fri.), 2014 10:00 ~ 18:00  
Tokyo International Forum (Exhibition Hall 2, B2F)  
Contents: Exhibit- and demonstration-oriented booths along with attractive special events  
Admission free. \*No prior registration required.



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### Editor's postscript

Since issue #10, we have included on the front cover a photo of the featured researcher with something in his or her hand. For this particular issue, Associate Professor Watanabe brought a red rod (simplified wave testing equipment), which impacted us with its unique shape. We couldn't tell what the equipment was until we were given an explanation. Only a small part of it is captured in the photo; the whole of it is much longer and larger. The photo adopted for the front cover is not a composite picture but a real one – one selected from the many photos filmed after trial and error, with a person holding the end of the equipment to create delicate waves.

Having prepared many memos for the interview, Dr. Watanabe answered our questions prudently (in choice of words) and calmly. He was really sincere and gentle true to his reputation among his lab students that they had joined the lab because of his personality. (Yuko Nakano)

### Front cover for this issue

The equipment is simplified wave testing equipment used to observe how a transverse wave propagates. We adopted this photo image for the front cover to reproduce the electric field waveform of invisible terahertz light.

## 新版 窮理図解

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2014年、理工学部創立75年。

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