

Title	Science and technology information
Sub Title	
Author	
Publisher	Faculty of Science and Technology, Keio University
Publication year	2014
Jtitle	New Kyurizukai No.18 (2014. 11)
JaLC DOI	
Abstract	
Notes	
Genre	Article
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=KO50001003-00000018-0009

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Work assiduously – this is the key to success

Takeshi Yokomori

As you may know, combustion – my field of research – is the most familiar technology that we humans have been using since the earliest times.

Some of you may have had this experience before: For example, if we are going to make fire without using modern tools just as ancient people did, it will require an enormous amount of labor – like forcibly rotating a wooden rod on straws to generate frictional heat sufficient enough to make fire. Today, however, you can cause this phenomenon very easily using a home-use gas stove. Furthermore, this phenomenon is used in various aspects of our modern life, such as for making gigantic flames that can generate thousands of tons of thrust for a space rocket, and for causing combustion

inside an automobile engine that rotates thousands of times per minute. We must remember that our modern lifestyle has behind it heaps of knowledge and technologies we humans have accumulated untiringly through countless years.

I first became involved in combustion research as an undergraduate senior when I was about to be assigned to one of the many labs at Keio's Faculty of Science and Technology. I knocked on the door of Prof. Masahiko Mizomoto's combustion lab. I already had a strong interest in research from the beginning of assignment to the lab. Judging from my experience of lecture and experiment classes, at the beginning I underestimated the workload at the lab, thinking that I'd be somehow able to deal with it. But once I actually became involved in research activity, I suddenly found the reality much, much harder than I expected.

The study of combustion that I target not only involves diverse academic

elements (fluid dynamics, thermal dynamics, chemical reactions, etc.) but it is also supported by a long historical background and accumulation of knowledge and technologies developed by our predecessors over the years. This means that we need to develop truly creative ideas in research. Furthermore, we need, as the base, an enormous amount of knowledge sufficient enough to persuade others. Once I realized the almost endless ways to go, I'm making steady, strenuous efforts from day to day.

Whatever the field may be – not limited to research and technological development – anyone (athletes, businesspersons, etc.) who is active at the front line has achieved their success through untiring effort, as you know.

I believe making assiduous efforts from day to day is requisite to achieve anything valuable – large or small. I know I'm still immature as a researcher, but I'm determined to continue striving steadily.

Science and Technology Information

Introducing Keio's "Program for Leading Graduate Schools"

The "Program for Leading Graduate Schools" is a project initiated by the Ministry of Education, Culture, Sports, Science and Technology, aiming to produce outstanding graduates capable of serving as internationally active leaders with a wide range of expertise and creativity.

Science for Developing a Super-Mature Society

~ To nurture and produce outstanding talented persons of the future with doctoral degrees ~

This ideal form of science aims to nurture and produce outstanding talents of the future with doctoral degrees who can lead the sustained development of the coming super-mature society. It will be pursued in an innovative educational environment that seeks integration of arts and sciences as well as collaboration with the business and administrative sectors.

Features:

- ① Chooses and employs research assistants (RAs) from Keio's 13 graduate schools as early as the master's course stage (aim: publicizing the appeal of their future professional careers at an early stage).
- ② RAs will learn in a genuine environment that seeks integration of arts and sciences ("Joint Degree System" established).
- ③ Guidance will be provided by mentors (division-manager class) from leading Japanese businesses, etc.
- ④ "Watering Hole" effect expected (various people come to a designated venue every week to mutually inspire).

Global Environmental System Leader Program

~ To nurture global environmental system leaders with abilities to develop new environmental science and technology and to propose desirable social rules ~

This program aims to nurture "global environmental system leaders" of the future with the awareness, knowledge and expertise to sustain and improve the global environment. They are expected to be able to design and structure technological and social systems targeting the global environment.

- ① International Academia-Industry-NPO collaborative advisory group (an international team consisting of 3 or more teachers and/or specialists).
- ② International training system (overseas field work and internship).
- ③ Remote collaboration system (use of a system capable of intuitively manipulating/editing 3D data on the Web, a teleconference system, and a system for multimedia sharing/analysis and visualization).

Editor's postscript

While interviewing him, I was very impressed with Dr. Yokomori's eyes twinkling like a boy. At the start, he appeared a little tense, but became fueled as he explained about his research work. Toward the end of the interview, he became relaxed with smiles and enthusiastically talked about the importance of students turning their eyes to overseas activities.

The lab exuded a nostalgic atmosphere because of an old experiment space still intact that Dr. Yokomori made using single pipes when he was a student. The photographer clicked the shutter excitedly, saying "What an impressive atmosphere!" We were also impressed with flames in the furnace emerging fantastically against darkness. We used this shot for the front cover.

(Manami Matsubayashi)



新版 窮理図解

New Kyurizukai
No. 18 November 2014



2014年、理工学部創立75年。

Editing : "New Kyurizukai" Editing Committee

Photographer : Keiichiro Muraguchi

Designers : Hiroaki Yasojima, Yukihiko Ishikawa (GRID)

Cooperation for editing : SciTech Communications, Inc.

Publisher : Tojiro Aoyama

Published by : Faculty of Science and Technology, Keio University
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