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私の本棚

My favorite books

At the Helm
-Translated in Japanese

This book is famous as it describes the mindset required of researchers when they establish their own labs. "Helm" means the ship's rudder. University teachers, before becoming faculty members, are basically individual researchers while they may sometimes engage in joint group research. They are not required to guide students either. Once they become full faculty members, they have their own laboratories and must take care of students, assigning research thems to them and helping them to graduate. Including myself, there must be a lot of teachers puzzled by such drastic changes. When I faced this problem, a senior friend of mine during my college days introduced this book to me. I learned many things from this book: What do you like your lab to be like?; How are you going realize your ideal? . . . As a result, I aim to make my lab a place "always filled with laughter, sweat, and shouts for joy."

ONEPIECE
-In Japanese comics

This manga is a specific remedy for when you are depressed. This masterpiece arouses your adventurous mind. The Miki Laboratory boasts a collection of many manga books, including those donated by myself. I hope these manga books will help provide diversion when you are at a loss for study. Students - remember that these are only for the diversion; research work remains your primary target (laughter).

MICROSYSTEM DESIGN
-In English

This great book was authored by Prof. Senturia, a former MIT professor and "Great Boss" of the MEMS field. It is a textbook used worldwide. I'm also using it at the "MEMS: Design and Fabrication" class of Keio's International Course (I teach in English!). Most MEMS researchers now active in the United States are Prof. Senturia's students or their students. Prof. Senturia is famous for showering the severest (!) questions at academic meetings. The moment he stands up to ask a question, the presenter's tension doubles (laughter). But he is usually a very courteous gentleman. I owed much to him when I applied for employment with MIT. Based on his accumulated technology, Prof. Senturia established a company of his own several years ago. I heard that a sensor developed by his company was used in lunar surface probing.

MEMS/NEMS Handbook
-In English

This is the book I authored (only Chapter 1, though) for the first time. I wrote about my research theme during my years at MIT. My heart was full when this book was delivered to me as a hardcover. To my regret, it's not a popular book that can be found at bookstores, and costs you over 1,200 dollars (laughter). But if you are really interested, please buy one. As a university teacher, I'd like to author a textbook on my own someday. To realize this dream, I must become the top-ranking person in my field, or establish a new field of research myself. I still have a long way to go.

Introduction to Helicopters
-In Japanese

By reading this book, I learned about the history of helicopter and related dynamics. The micro helicopter I was researching had rotor blades made of a magnetic material, which began to rotate and generate thrust when an AC magnetic field was given from the outside. The helicopter successfully floated in the air when thrust exceeded the helicopter's own weight at blade rotational speed of 540 rounds per second. It was autumn of the third year of my doctor's course. I was steeped in joy - alone in my lab. Perhaps it is the smallest helicopter in the world.

Key Points of Clinical Examinations
-In Japanese

Clinical examination is the most promising field of MEMS technology application. This was introduced, as a book focused on clinical examination technology, by a medical doctor with whom I became acquainted during my days in Boston. Once in a while I open this book, looking for seeds of research. In addition to the research fields already explained in this publication, our Miki Laboratory also emphasizes medical fields of MEMS application. These include: an artificial kidney combining a membrane (with 1-nanometer holes) with micro channels, and cell integration technology based on micro swirls.

Ubamegashi
(Holm Oak)

"Ubamegashi" is a holm oak. In the background is a young oak tree that produces acorns. I bought this holm oak sapling about a year and a half ago wishing for prosperity of our lab. It is growing steadily. By the time I retire, "Ubamegashi" will grow into a huge tree as tall as 10 meters!