### 慶應義塾大学学術情報リポジトリ

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## Spin Electronics -The Foundation of Next-**Generation Memory MRAM**

This book introduces new technology, spin electronics (spintronics), in an easy-tounderstand way. Since the book contains few difficult formulas, I think even high school students will be able to appreciate the ambience of this new technological domain.

## (Extra 1) Doctor for Animals

The lab's atmosphere (especially the advising teacher's atmosphere) depicted in this book is very similar to that of the lab I belonged to during my student days. You may call it close to a documentary. When young, I thought alt labs are similar to this one more or less, but after graduation I found reality was much different.

# (Extra 2) DVD of Seikima II's "Black Mass" (Concert) at breakup of the band

This DVD is a complete record of "Black Mass" (concert) at the December 1999 breakup of the Seikima II rock band led by ("His Excellency") Demon Kogure. As a faithful follower (fan) of His Excellency since my student days, I had never missed listening to their performance on the All-Night Nippon radio program. This means I always lacked sleep on Tuesday mornings. Even today, I enjoy this DVD for diversion from time to time though my family members cannot appreciate the good points of Seikima II.

### Biography of Kotaro Honda

This book is a biography of the late Dr. Honda, a scholar who was highly respected as the "God of Iron." I borrowed this book from one of my seniors who strongly recommended it as being "very useful for managing a lab!" The book depicts. pioneering research into magnetism at the dawn of Japan's electrodynamics while fostering a number of up-andcoming researchers. I was deeply impressed by his sincere attitude - sparing no efforts in conducting difficult trail-

> blazing experiments, always tackling problems face-to-face and without seeking easy shortcuts. I really want every researcher-to-be student to read this book. Some day we'd also like to develop a personality similar to Dr. Honda who was respectfully nicknamed "human magnetism."

### Spin-wa-Meguru (The Story of Spin)

This book introduces the circumstances where electronic spin, the source of magnetism, was discovered. It vividly describes geniuses (later to win Nobel Prizes), such as Wolfgang Pauli, Paul Dirac and Werner Heisenberg, boldly meeting the challenge of shedding light on the internal structure of the atom. It contains a number of interesting episodes, including the circumstances in which the relativistically contradictory assumption "spin is electron's rotation" was published as a thesis.

## Spin Dynamics in Confined Magnetic Structures I ~ III

This series is a scrupulous compilation of recent developments in spin dynamics, my specialty. For example, it introduces a new technology that can measure high-speed spin in the gigahertz to terahertz bands by frequency domain and time domain.

### Intuitive Approach to **Physical Mathematics**

When I was assigned to take charge of a lecture at Kyushu University for the first time, I heard that ferrodynamics is an extremely unpopular subject among many students because its mathematical approach seemed to be an unmanageable hurdle to them. So I was worried about how to teach vector analysis, Fourier analysis and Taylor

expansion, a professor of the neighboring lab introduced this book. Reading it, I could now understand the meaning of the key formulas that I had simply learned by heart formerly - like having my eyes reopened after prolonged blindness. This book is a must for students who are lost in a maze of mathematics.

# Basics of Magnetics: **Physics of Ferromagnetism**

This textbook is a Bible for ferrodynamics beginners. I make it a rule to have seniors study it first and foremost. Learning ferrodynamics requires complex knowledge of quantum mechanics, statistical mechanics and electrodynamics; this textbook offers an easy-to-understand explanation of all these three fields of learning.