



Graduate School Sweden & EU



ROYAL INSTITUTE
OF TECHNOLOGY

- Experiences with the Swedish School System
- The New European System
- Graduate Student at the Royal Institute of Technology (KTH)
- Thoughts on the Japanese Graduate School

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Me

Anton Frise

Ph.D. student in
Physical Chemistry



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Home University:
**The Royal Institute of
Technology** (KTH), Sweden

Currently active as a
Visiting Research Student

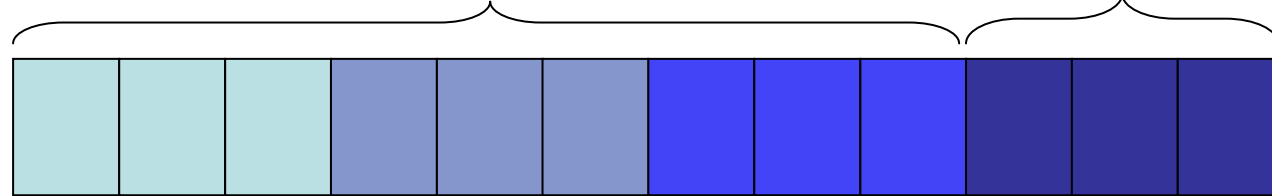
Host Laboratory:
Kato Laboratory
Department of Chemistry
and Biotechnology
School of Engineering
The University of Tokyo



My Schooling

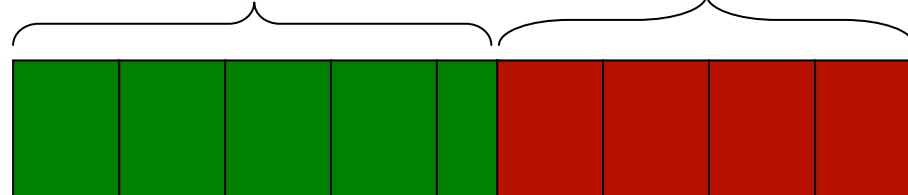
Elementary School
9 years (Compulsory)

High School
3 years



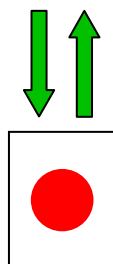
M. Sc. (KTH)
4.5 years

Ph. D. (KTH)
4-5 years

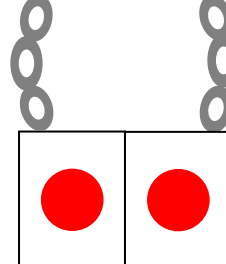


OBS!

Old System!



Exchange student
(Osaka University)



Research student
(University of Tokyo)



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Bologna Process

The purpose of the Bologna process is to create the ***European higher education area*** by making academic degrees of European universities more comparable and compatible.

The basic framework

Three cycles of higher education defined in terms of **ECTS** credits (European Credit Transfer and Accumulation System).



- **1st cycle:** 180–240 ECTS credits
Awarding a Bachelor's degree
- **2nd cycle:** 90–120 ECTS credits
Awarding a Master's degree
- **3rd cycle:** No ECTS range given
Awarding a Doctoral degree



The Dome of Bologna

KTH, the Royal Institute of Technology

Excellence in Education, Research and Entrepreneurship



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The New System as of July 2007:

- Bachelor 3 years
- Master 2 years
- Doctor 4 years

Master's Degree at KTH

- A large number of Master's Programs taught in English.
www.kth.se/eng
- Open to Swedish and Foreign students with a Bachelor's degree or equivalent academic qualifications.
- The programs consist of Course Work followed by a Degree Project / Master Thesis.
- The Master's Programs are currently free of charge.



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Master's Degree at KTH

Chemical Science and Engineering (CHE)

Two specializations

- **Functional Material and Surfaces**
Material Physics
- **Chemical Engineering for Energy**
Industrial Energy Processes / Sustainable Development



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Course Work: 90 ECTS

Master Thesis: 30 ECTS



Doctor's Degree at KTH

General information

- 1,444 Research Students (18,000 in all of Sweden).
- International approach, about 20% of all Research Students have a non-Swedish background.
- ***Doctoral degree*** require a minimum of *four* years of full-time study.
Licentiate degree require a minimum of *two* years of full-time study.



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Doctor's Degree at KTH

Requirements

- Master's degree is (in most cases) required.
- Good command of English. No formal admission requirements with regard to Swedish language skills.
- Admission is restricted and competition is keen. Only students who are funded for the entire study period are admitted.



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Doctor's Degree at KTH

Completion

- 5-8 Completed Projects
- Course Work worth 60 ECTS credits
- Written Thesis
- Oral Presentation where the Thesis is defended



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Experience of Research Activities as a Graduate Student

Prior to my Ph.D. studies I had completed a Degree Project in the field of Physical Chemistry as a part of my Master of Science.

Two projects during my first year as a Ph.D. student at KTH:



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- **Adsorption and Self-Assembly of Amphiphilic Molecules on Particle Surfaces**
 - New detection method utilizing NMR Spectroscopy
 - Developed together with affiliated researcher and senior supervisor
 - Team Work and Individual Work
 - some **Scientific Skill**
- **Dispersion of Carbon Nanotubes in Aqueous Protein Solutions**
 - Use of existing NMR Spectroscopy methods to determine the adsorbed fraction of Serum albumin to Single-Wall and Multiple-Wall Nanotubes
 - International collaboration with researchers in Israel
 - **Communicative Skill**

Thoughts on the Japanese Graduate School

Research Discussions

Journal Meetings

*Presentation
Rehearsals*

B4



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Last train

就職活動

Job application period



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*“Having an Open Mind is essential
when exploring the unknown,
But allowing one’s brains to fall out
in the process is inadvisable”*

Dean Radin

More on the Internet

www.kth.se/eng



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www.StudyInSweden.se

www.ResearchInSweden.se

www.Sweden.se



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Thank you for your kind attention!

Tack!