

Visit to a Science Club

Science Club at Rikkyo Ikebukuro Junior & Senior High School (Part 1)

Introduction

In this journal, we would like to introduce science club activities by junior and senior high school students, who are striving hard for a dream to become a future scientist. On this occasion we visited a science club at Rikkyo Ikebukuro Junior & Senior High School on January 22, 2013, just after the National Center Test for University admissions was held. They have achieved excellent results in competitions such as the International Chemistry Olympiad and Japan Science & Engineering Challenge. Education at Rikkyo School emphasizes a focus on the pursuit of truth and cooperation, and aims to nurture independence of students. We were invited to their laboratory after a greeting with a teacher/club advisor Mr. Goto and a teacher/assistant advisor Mr. Tsushima at the entrance, and saw students there performing experiments on their own.

Science Club of Rikkyo Ikebukuro Junior & Senior High School

In academic year 2012, 22 students (10 junior high and 12 senior high) belong to the club. Activities are taking place four times a week for two hours each. An interesting feature of the club is that students form a team with those having the same theme, appoint a team leader and make experiment plans on their own. Teachers are pretty busy supporting students' entire activities, giving strict safety guidance on their experiment plans and preparing facilities, equipment and chemicals at their requests. "I would like students to experience a self-motivated study like the one in university laboratories" says Mr. Goto, a teacher/advisor. One of the other great appeals is that the school is attached to a university so that, as necessary, students may use facilities of nearby Rikkyo University, College of Science.



Mr. Goto and science club members (TCI reagents are thankfully used).

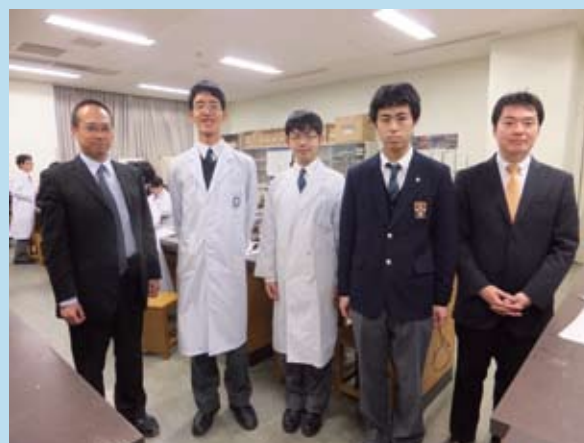


Experiment by each team (A big feature is that students are respectively working through a team experiment). Mr. Tsushima is directly instructing an experiment.

Student Voices

Mr. Arima, a former captain, and Mr. Soejima, a back-to-back gold medal winner of the International Chemistry Olympiad, commented on their motivation behind starting chemistry.

- Mr. Arima: I was greatly attracted to the experiments by the science club that I saw at R.I.F. (Rikkyo Ikebukuro High School Festival).
- Mr. Soejima: I have been very interested in creating new compounds with my own hands. Both seemed to have been fascinated with chemical experiments.



From left, Teacher/Advisor Mr. Goto, Mr. Soejima, Mr. Arima, New captain Mr. Okada, Teacher/Advisor Mr. Tsushima.

Research presentation and competition entry

Daily study results are submitted for the Japan Student Science Award. In regard to the International Chemistry Olympiad and Chemistry Grand Prix aimed at high school students, all club members from a first grade of junior high school participate in the competitions whether they submit their results or not. "A sense of unity is established among team members by participating in contests together"

says Mr. Goto. Not to mention that they have achieved brilliant results in every competition. At the end of school year, a club newsletter summarizing their activity results is published (B5-sized 135 pages in 2011). Aside from research presentations, many other attempts are made to attract the interest of students such as a tour of domestic frontier research facilities and factories during a summer camp.

Award winning results of 2012:

Japan Science & Engineering Challenge (JSEC 2012)

Honor award (Mr. Soejima): Crystal growth control of MOF-5 with coordination modulation

This is a study that examines crystal growth control of MOF-5 by adding benzoic acid after synthesizing MOF-5, metal organic framework (porous coordination polymer), from terephthalic acid and zinc.

Reference: http://www.asahi.com/shimbun/jsec/2012/jsec2012/12fin_finalist.html

Honorable mention award (Mr. Takahashi): Consideration of phthalocyanine synthesis by Wyler's method

This is a study that performs the Wyler's method for phthalocyanine synthesis under aqueous conditions at room temperature.

Japan Student Science Award - Tokyo round (High school category)

Grand Award (Mr. Arima): Alteration of complex based on differences of cation

This is a study that examines a change of solution color and crystal structure of potassium trioxalatoferrate (III) through alteration of coexisting cation.

Incentive Award (Mr. Ohira): Depolymerization of PET resin

This is a study that performs to reproduce the depolymerization of PET resin in a high school laboratory.

Japan Student Science Award - Tokyo round (Junior high school category)

Grand Award (Mr. Koike): Creation of a fine copper mirror

This is a study that researches conditions to create a fine copper mirror by varying amounts of silver nitrate water solution, tin(II) chloride water solution, and Fehling's solution A and B.

Incentive Award (Mr. Tsujimoto): Staining of vinylon

This is a study that examines a staining method of vinylon with BTB and litmus solution.

Competition results of 2012:

International Chemistry Olympiad 2012: Gold medal (Mr. Soejima)

High School Chemistry Grand Prix 2012: Grand prix (Mr. Soejima), Gold medal (Mr. Takahashi)

Japan Biology Olympiad 2012: Gold medal (Mr. Soejima)

Physics Challenge 2012: Bronze medal (Mr. Takahashi)

As you can see, the science club of Rikkyo Ikebukuro Junior & Senior High School has been very active and received a great number of brilliant prizes. In the next issue we are going to give you a detailed report on research activities of each student.