

(For JSPS Fellow)

Form B-5

Date (日付)

11/6/2014 (Date/Month/Year: 日/月/年)

Activity Report -Science Dialogue Program-
(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): BRETISLAV SMID (ID No. P 13754)

- Participating school (学校名): Tsuru Senior High School, Otsuki, Yamanashi Prefecture

- Date (実施日時): 6/6/2014 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): (in English) Discovery the beauty of nanoworld

(in Japanese) ナノワールド 美の発見

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

In the beginning of the lecture I was talking about my homeland, the Czech Republic, showing some pictures and comparing Czech Republic and Japan. I mentioned inventions, ideas and famous stuffs created in my country and its representative people.

In the main, scientific part of the lecture, I was talking about nanotechnologies and their importance for our life. I tried to describe different aspects of nanotechnology, how small is nano and the difference between big and small objects. Before I got to a closer look at the surface of matter, I explained why scientists need special conditions (e.g. ultra-high vacuum) for conducting their experiments and for analyzing samples by using surface science techniques. By doing so, I demonstrated the power of atmospheric pressure (to opposite to vacuum) by two simple experiments. For one experiment I brought a small vacuum chamber with pumping system. The other experiment was much simpler (using just a glass of water and a piece of paper). The students can easily perform it by themselves at home, as I encouraged them. Next, I briefly described different techniques in discovering the nanoworld, showing some impressive images from scanning electron microscope. I also brought a sample of nanomaterial from my host institute, safely sealed in the glass vial, so students can see the real material, and showed them the SEM image from it (displaying the nanowires with diameter of 35 nm only).

In the end I was encouraging students in science, explaining what great time and a beautiful country they live in, provided them an amazing opportunity in research with the best instruments and facilities. Also few pictures from my travelling in Japan were shown. After the lecture I distributed some children's scientific booklets, published under the head of my host institute.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 90 min (分), Q&A time (質疑応答時間) 10 min (分)

◆Lecture style (ex.: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

Lecture was prepared in Powerpoint and presented via projector on a big screen. During the lecture I performed two experiments showing the power of atmospheric pressure and the "emptiness" of vacuum (using a small vacuum chamber connected with a pump). I also showed the real powder sample brought from my laboratory (safely sealed in the glass vial) and showed them the picture of such sample seeing in scanning electron microscope.

◆Interpretation (ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

I was talking in English. Some more difficult parts were explained by the high school teacher, who really wanted the students to understand the topic, without letting them being confused.

◆Name and title of accompanied person (同行者 職・氏名)

none

◆Other note worthy information (その他特筆すべき事項):

Because I was impressed by the teacher and the school and like this program, I would be happy to participate in another Science Dialogue in the future.

- Impressions and opinions from accompanied person (同行者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。):