

(For JSPS Fellow)
Form B-5

Date (日付)

29/01/2016 (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): Paavo A. Penttilä (ID No. P 15092)

- Participating school (学校名): Wakayama Prefectural Koyo High School

- Date (実施日時): 28/01/2016 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): (in English) The secrets of cellulose structures
(in Japanese)

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

The lecture was divided into four parts. In the first part, I told the students about my home country, Finland, highlighting especially the low population density and the nature. In the second part, I explained my personal school history and my path to become a researcher. I also described what it means to be a researcher in practice, including the necessity of language skills and the possibility for travelling, and encouraged the students to study what they feel is interesting. I also told briefly about my experiences of living in Japan. In the third part, I introduced the students to the wood structure and the concept of structural hierarchy, highlighting especially the unknown features of the plant cell wall nanostructure. I told them about the different sources of cellulose and compared its traditional and more recent applications. I also introduced some experimental methods for the characterization of the nanoscale structure of cellulosic materials. In the fourth part of the lecture, I presented some examples from my research in Japan. I described the mechanism of cellulose biosynthesis and presented my results from *in vitro* cellulose synthesis experiments under different temperatures. As the second example, I presented my research related to the formation of supermolecular cellulose structures from newly-synthesized bacterial cellulose in the presence of hemicelluloses. After a summary of the lecture's main points, the students asked questions in both English and Japanese.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 50 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))

Used projector and computer

- ◆ 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))

A member of the school staff interpreted some of the students' questions.

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

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

- 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。):