

(For JSPS fellow)

Form 3

Date (日付)

15 / 02 / 2011 (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 (参加外国人研究者氏名): Surawut Chuangchote (ID No. P10079)

Participating school (参加機関(受入学校名)): Naragakuen Tomigaoka High School, Nara

Date (実施日時): 05 / 02 / 2011 (Date/Month/Year:日/月/年) Time: from 13:30 to 15:10

Lecture title (講演題目): (in English) Nanofibers for Solar Cells

(in Japanese) ナノファイバーを用いた太陽電池

Lecture summary (講演概要):

The aims of this lecture requested from the teachers are 1) to help the students to gain an international understanding and 2) to realize the students the importance of learning English. Therefore, the lecture was presented in English and consisted of four main parts; introduction to Thailand, international study, introduction to solar cells, and nanofibers for solar cells. In the first part, Thailand, my home country, was introduced. The students then knew basic information, capital, religions, language, monarch, foods, fruits, and festivals of Thailand, as well as comparisons with Japan. The second part of the lecture was a brief reason why I have studied abroad in Japan to inspire the students with international study. In the next part, basic knowledge and technical terms of solar cells was introduced to build a background for the last part of lecture. Samples of solar cells were also demonstrated. Lastly, my present works were briefly presented according to following abstract.

#### Nanofibers for Solar Cells

Solar cell (also called photovoltaic cell) is a solid state device that converts the energy of sunlight directly into electricity. There are various types of solar cells because of different materials which were used to fabricate. Different materials display different efficiencies and have different costs. At present, silicon-based solar cells can achieve power conversion efficiencies of up to 24% although this high efficiency is offset by the high cost. Dye-sensitized solar cells (DSSC) and organic solar cells are promising alternatives to their silicon analogues. In this work, we fabricated nanofibers of titanium dioxide and conductive polymers and applied these nanofibers for DSSC and organic solar cells.

Language used (使用言語): English (with some Japanese keywords)

Lecture format (講演形式):

○Lecture time (講演時間) 60 min (分), Q&A time (質疑応答時間) 30 min (分)

○Lecture style (examples: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、プレ実験など))

used PowerPoint slides with 1) demonstration of real examples and applications of solar cells and 2) a quiz after Q&A

○Interpreter (example: assistance by host or colleague, provided Japanese explanation by yourself)

(通訳 (例: 受入研究者によるサポート、外国人研究者本人による日本語説明))

provided some Japanese explanation by myself

Name and title of assistant (協力者 職・氏名) (example: host or colleague)

none

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

- I appreciated Japanese students who study even on Saturday. Some part it was quite hard to understand but they tried to think. When I asked questions, they also tried to answer.

- Before lecture, the teacher asked me to send 20 keywords that the students should know to understand the lecture. It is a very good procedure.

- After Q&A time, I held a quiz game with 10 questions. The student who could answer each question received a Thai souvenir. It was a funny time. Many students intended and interested to that game. It is one way to represent all contents of the lecture again.

Impressions and opinions of assistant (協力者から本事業に対する意見・感想等がございましたら、お願いいたします。): -