

様式 A-1
(FY2023)

2023年10月30日

サイエンス・ダイアログ 実施報告書

1. 学校名・実施責任者氏名: 栃木県立宇都宮女子高等学校 ・ 大關 敬智
2. 講師氏名: Dr. Petrus Paulus Roelof Martina Leonardus HARKS
3. 講義補助者氏名: PARK Sunghyun
4. 実施日時: 2023年10月30日 (月) 15:15 ~ 16:15
5. 参加生徒: 1年生 20人、 2年生 10人、 3年生 10人 (合計 40人)
備考: 特になし
6. 講義題目: Li-ion batteries
7. 講義概要: Li-ion batteries の仕組みと、フルーツバッテリーの実験
8. 講義形式:
対面 ・ オンライン (どちらか選択ください。)
 - 1) 講義時間 50分 質疑応答時間 10分
 - 2) 講義方法 (例: プロジェクター使用による講義、実験・実習の有無など)
プロジェクター使用による講義、フルーツバッテリーの実験
 - 3) 事前学習
有 ・ 無 (どちらかに○をしてください。)
使用教材 講義概要の資料
9. その他特筆すべき事項:
特になし

Form B-2
(FY2023)
Must be typed

Date (日付)
01/11/2023 (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): Petrus Paulus Roelof Martina Leonardus HARKS (ID No.P22340)

- Name and title of the accompanying person (講義補助者の職・氏名)
PARK Sunghyun

- Participating school (学校名): Utsonomiya Girls High School

- Date (実施日時): 30/10/2023 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):
Making batteries better through electrolyte design

- Lecture format (講義形式):
◆ Onsite ・ Online (Please choose one.)(対面 ・ オンライン)((どちらか選択ください。))
◆ Lecture time (講義時間) 50 min (分), Q&A time (質疑応答時間) 10 min (分)
◆ Lecture style (ex.: used projector, conducted experiments)
(講義方法 (例: プロジェクター使用による講義、実験・実習の有無など))
Powerpoint presentation on projector screen, conducted experiments

- Lecture summary (講義概要): Please summarize your lecture within 200-500 words.
The lecture started with a self-introduction. My home country the Netherlands was quickly discussed, including location, size compared to Japan and capital. Then we focused on the way one can become a scientist, and how and why I came to Japan. Here, the role of JSPS in promoting science was explained, and the importance of the English language. Then the vital role of batteries in our society was discussed; powering our mobile electronics, determining the range of electric vehicles, and for storing renewable energy. The important role Japanese scientists and companies played in the development of the Li-ion battery was highlighted. This was followed by an introduction on the working mechanism of a Li-ion battery, this also included explaining ions and electrolyte. Then I presented the topic of my research with a simplified explanation of the Li⁺ solvation structure in the electrolyte, the way it influences the properties of the electrolyte, and how it can be designed. Subsequently, to make it more tangible, examples were given (with pictures) of daily activities such as electrolyte mixing, battery testing and electrolyte and electrode characterization. Lastly the principle of a fruit battery was discussed. In the conclusion it was stressed that science is for everybody (independent of race and gender), and the usefulness of the ability to speak English was again highlighted.

SD

※弊会記入欄

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

We conducted experiments with fruitbatteries with 2 volunteering students helping.

- Impressions and comments from the accompanying person (講義補助者の方から、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。):

The students paid attention well, and were able to ask relevant questions in Japanese and English.