様式 A-1
(FY2019)

令和5年6月16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: 山梨県立日川高等学校　小尾 美保

2. 講師氏 Dr. Vikrant YADAV (Mr.)

3. 講義補助者氏名:

4. 実施日時: 令和 5 年 6月 16日 （ 金 ） 14:00 ～ 15:40

5. 参加生徒: 3 年生 39 人 ____年生 ____人
   備考: SSHクラス所属の生徒

6. 講義題目: Anion Exchange Membrane: State of their development and Perspective toward Fuel Cell

7. 講義概要
   ・Introduction of the lecturer and his home country
   ・About the research

8. 講義形式:
   1) 講義時間 70 分　　質疑応答時間 20 分

   2) 講義方法
      本校視聴覚室で直接講義

   3) 事前学習
      ㊒ ・ 無
      使用教材 日本語の資料および英語の語彙や内容要約プリント、パワーポイント PDF

9. その他特筆すべき事項:
   ・本校理科教員の協力を得て事前学習を行った。

SD4328
※弊会記入欄

Form B-2
(FY2023)
Must be typed

Date（日付）
2023/06/26 （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）: Vikrant Yadav （ID No. P22035）

- Name and title of the accompanying person（講義補助者の職・氏名）
There was no accompanying person

- Participating school（学校名）: Yamanashi Prefectural Hikawa High School

- Date （実施日時）: 2023/06/16 （Date/Month/Year:日/月/年）

- Lecture title（講義題目）:
Anion Exchange Membrane: State of their Development and Perspective toward Anion Exchange Membrane Fuel Cell

- 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）70 min（分）, Q&A time（質疑応答時間） 20 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））
Used projectror as well experiment conducted

- Lecture summary（講義概要）: Please summarize your lecture within 200-500 words.

As asked by Yamanashi Prefectural Hikawa High School, lecture was divided in two sessions: (i) self and home country introduction, and (ii) research work in Japan. In first session, a brief self-introduction and overview on culture, biodiversity, and heritage of home country was given. Also, a brief overview on what is JSPS, JSPS pots-doctoral fellowship, and how to get it; was given.

Considering proposed title of lecture, an overview on ion exchange membranes, their types, and history was provided. In order to make student understand the importance of my topic of research and benefits of same in scientific community as well as society, importance and need of sustainable energy storage and conversion devices in present scenario was explained. What is fuel cell and why it could be viable alternative to traditional petroleum-based fuels now a days. Why membrane is important for fuel cells and what are challenges were illustrated.

Especially, students were briefed about anion exchange membranes advantages and challenges in designing, development, and commissioning in prototypes. In detail, objective of research and hypothesis was discussed and how proposed hypothesis can overcome existing challenges. Rationale design of

polymerization active monomeric units following bottom-up approach, polymerization, and fabrication of anion exchange membrane was shown. This made students understood how this design could alleviate challenges mentioned earlier. To demonstrate this, experiment with piece of membranes distributed to students was conducted. Lecture was concluded by presenting easily under stable data acquired for the membrane shown.

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

- 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。）:


Dances in India