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SD4664
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（学校用）

様式 A-1
(FY2025)

2025年 10月 27日

サイエンス・ダイアログ　実施報告書

1. 学校名：栃木県立宇都宮女子高等学校

2. 講師氏名： Wan-Hsin CHEN

3. 講義補助者氏名： 林 大寿

4. 実施日時： 2025年 10月 27日（月） 15:15 ～ 16: 15

5. 参加生徒： 1年生 19人、 年生 人、 年生 人（合計 19人）
備考：（例：理数科の生徒）

6. 講義題目：The Universe in a Speck:A Journey into the Atomic World

7. 講義概要：STM 顕微鏡を用いて、様々な原子を観察する。

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 5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

3) 事前学習
□有 ・☑ 無 （どちらか選択ください。）
使用教材：

9. その他特筆すべき事項：
生徒にアンケートを書く時間を設けた。

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Form B-2
(FY2025)
Must be typed

Date（日付）
04/11/2025 （Date/Month/Year：日/月/年）

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

- Fellow's name（講師氏名）: Wan-Hsin Chen （ID No. P24070 ）

- Name and title of the lecture assistant（講義補助者の職・氏名）
Dr. Daiju Hayashi

- Participating school（学校名）: Tochigi Prefectural Utsunomiya Girls' High School

- Date （実施日時）: 27/10/2025 （Date/Month/Year:日/月/年）

- Lecture title（講義題目）:
To see a world in a grain of sand: A Journey into the Atomic World

- 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） 45 min（分）, Q&A time（質疑応答時間） 15 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 projector

- Lecture summary（講義概要）: Please summarize your lecture within 200-500 words.
My lecture began with a self-introduction where I shared a little about my home country, Taiwan. I highlighted its beautiful landscapes and delicious food, as well as its close geographical and historical ties to Japan. After this, I talked about my experiences graduating from a girls' high school and connected that to the students' current educational choices, particularly their decisions between studying humanities or sciences. I also shared the moment that inspired me to pursue a career in science and what motivated me to come to Japan for my research. Following my introduction, I shifted to discussing my research findings. To make complex concepts easier to understand, I used relatable examples from everyday life and referenced popular animated characters. I explained how scientists use a tool called a scanning tunneling microscope to study tiny particles, including a quick quiz and videos to show how visualizing and manipulating individual atoms can be important in scientific research. I then addressed the challenges presented by the rise of artificial intelligence in our current times and introduced the concept of Spintronics. Spintronics is an innovative technology that uses both the charge and spin of electrons, which allows information to be processed and stored more quickly and efficiently. Since

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Japan plays a key role in the development of Spintronics, I discussed how my research experience in Japan was supported by the JSPS program. To wrap up, I emphasized the importance of speaking English and the need for confidence when communicating with scholars from around the world, as English is the primary language of the scientific community.

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

As suggested by Fukuda-san, the preparation of visual research findings, along with the incorporation of interactive games, can significantly enhance student engagement during discussions. The presentation of each slide in both English and Japanese effectively captures the attention of audience. I would also like to express my gratitude to my colleague, Dr. Daiju Hayashi, for his invaluable assistance as my lecture assistant. While I am able to comprehend the inquiries posed by students and teachers, I have greatly benefited from Dr. Hayashi's ability to provide comprehensive explanations in Japanese. I extend my sincere appreciation to the JSPS for facilitating this opportunity, as well as to Utsunomiya Girls' High School for their warm hospitality.

- Impressions and comments from the lecture assistant（講義補助者の方から、本プログラムに対する意見・感想等がありましたら、お願いいたします。）: とても貴重な経験をさせていただき、有意義な時間を過ごすことができました。 自分の研究について、もう少し話す機会があればさらに良かったと感じました。また機会がありましたらどうぞよろしくお願いします。


2D material
Growth
Au atoms
By rotating the angle, we can observe
patterns with different periodic arrangements.
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