

様式 A-1

(FY2025)

2026年 3月 5日

## サイエンス・ダイアログ 実施報告書

1. 学校名: 山口県立徳山高等学校
2. 講師氏名: Kevin Mall Haidaraly (ケヴィン・モール・ハイダラリー) 先生
3. 講義補助者氏名: なし
4. 実施日時: 2026年 3月 3日 (火) 13:30 ~ 15:30
5. 参加生徒: 理数科 1年生 40人 (合計 40人)  
備考: (例: 理数科の生徒)
6. 講義題目: From Atoms to OLED: The Chemistry Behind The Screen
7. 講義概要: 化学の基本的な知識からスタートして大学レベルの化学的知識へと発展していく講義内容。それに対する質疑応答。その後、生徒の方から現在の自身の研究についてのプレゼンテーション & 先生からのフィードバック。
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 65分 質疑応答時間 15分 生徒プレゼンテーション & フィードバック 40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とプレゼンテーション
  - 3) 事前学習  
 有 ・  無 (どちらか選択ください。)  
使用教材: 送ってもらった資料と、独自に準備した化学の用語集等を使った学習
9. その他特筆すべき事項:  
生徒は難しい専門用語にも挫けず、熱心に耳を傾け、プレゼンテーションは英語で堂々と発表した。先生からの的確なフィードバックを頂いて、今後の研究の糧になった。

Form B-2  
(FY2025)  
Must be typed

Date (日付)  
04/03/2026 (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): Kevin Ismaël MALL HAIDARALY  
(ID No. P24705)

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

- Participating school (学校名): Tokuyama Highschool, Yamaguchi Prefecture

- Date (実施日時) 03/03/2026  
(Date/Month/Year: 日/月/年)

- Lecture title (講義題目):  
From Atoms to OLEDs: the Chemistry Behind your Screen

- 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) 80 min (分), Q&A time (質疑応答時間) 40 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 for lecture + interactive quiz

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

The lecture 'From atoms to OLEDs: the chemistry behind your screen' started with the reinforcement of fundamental knowledge in chemistry they already acquired through school. Then, a second chapter was focused on the field of organic materials and the roles of an organic chemist in academia, the students were introduced to more complex concepts related to light interaction and conduction in organic materials. Lastly, the field OLEDs and its development in research and on the industrial playground was detailed. The main goal of this presentation was, for the student, to corroborate the chemistry they have seen in class, transpose it to what a university-level student can use it for, and lastly how all of this is carried out to research and industries on the long term. More than a lecture, this presentation is bridging the broad concept of chemistry seen in high school to the specialized work of researchers.

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

After each chapter of my lecture, I made the students in a competitive online quiz based on the concepts and ideas presented in the chapter using the website Kahoot. At the end of the lecture, a leaderboard is created, showing which student/group of students had the most correct answer. I prepared this with two goals in mind:

- consolidate the newly acquired knowledge through active participation of each student in a knowledge assessment quiz
- keep their attention on the lecture and give them a reason to listen/focus since there will be competition between them at the end

Overall, students appreciated this format of lecture and were very enthusiastic during the session.

- 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。):

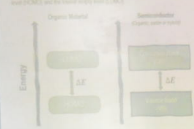
Science class March 3rd

Time table  
13:30-14:50 Science by Dr. Kenji Imai  
14:50-16:30 Introduction to Nanotechnology

### B. Organic Electronics: Light and matter interaction

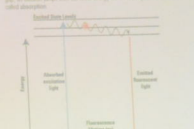
What is the Average? Important?

The average component of the energy difference between the highest filled and lowest empty orbitals is given by  $\langle E_g \rangle$ .



What happens when the absorbable material with light?

When the energy of the incident light is equal to the HOMO-LUMO energy gap, an electron can be excited from the lower energy orbital to a higher one, like in a solar absorber.



Excited state relaxation: An excited HOMO-LUMO energy gap will not be appropriate for collecting electrons. The electron will relax to the lowest energy state.

After excitation, the electron goes back to the lower energy orbital and the average energy gap for collection is given by  $\langle E_g \rangle$ .



科学技術学術 (文)  
Classroom  
クラスコード  
apuzledn

課題研究 (先行研究調査 (理数科))

