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（学校用）

様式 A-1

(FY2025)

2026 年 2 月 9 日

サイエンス・ダイアログ　実施報告書

1. 学校名: 福井県立若狭高等学校

2. 講師氏名: Dr. Imran Ahmed

3. 講義補助者氏名: 緒方 雄大 氏

4. 実施日時: 2026 年 2 月 2 日（ 月 ） 14 : 20 ～ 16 : 10

5. 参加生徒: 2 年生 57 人、 年生 人、 年生 人（合計 57 人）
   備考:（例:理数科の生徒）普通科理系

6. 講義題目: Resource Allocation in Secure Spectrum–Spatial Elastic Optical Networks Using Quantum Key Distribution

7. 講義概要: ご出身のインドの文化の紹介や、光ネットワークについての説明

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 90 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、実験・実習無し

   3) 事前学習
   ☑有 ・□ 無 （どちらか選択ください。）
   使用教材: 担当教員作成のプリント

9. その他特筆すべき事項:

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Form B-2
(FY2025)
Must be typed

Date（日付）
04/02/2026 （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）: Imran Ahmed （ID No. P25079 ）

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

- Participating school（学校名）: Wakasa Senior High School

- Date （実施日時）: 02/02/2026 （Date/Month/Year:日/月/年）

- Lecture title（講義題目）:
Resource Allocation in Optical Networks

- 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） 30 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））
The projector was used.

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

The lecture began with a personal narrative of my academic journey, tracing the path from high school to obtaining the prestigious JSPS (Japan Society for the Promotion of Science) Postdoctoral Fellowship. I shared the challenges, milestones, and decisions that shaped my career, aiming to provide students with a relatable perspective on pursuing higher education and research opportunities abroad.

Following this, I introduced the students to the rich and diverse culture of India, highlighting its traditions, festivals, and values. I also explained my motivations for choosing Japan as my research destination, emphasizing the country's advanced technological landscape, collaborative research environment, and the unique opportunity to experience a different culture while contributing to cutting-edge science.

The core of the lecture focused on demystifying the concept of research. I addressed three

fundamental questions: What is research? Why do we conduct research? And how do we carry out research? Through simple examples and interactive discussion, I aimed to help students understand that research is essentially a systematic process of inquiry aimed at discovering new knowledge and solving real-world problems.

I then introduced my specific area of expertise: optical networks. The explanation began with the basics of how the internet works and how data is transmitted through optical fibers. I described the structure of an optical fiber, explaining the core, cladding, and protective layers that enable light to travel long distances. The principle of total internal reflection, which allows light to propagate through the fiber with minimal loss, was demonstrated through simple illustrations. I further discussed the growing global demand for high-capacity networks driven by increasing internet usage, streaming services, and data-intensive applications. To address this demand, I presented my proposed research on advanced optical fiber technologies, which offers a promising solution to enhance transport capacity and meet future communication needs.

The lecture concluded with an interactive motivational session, encouraging students to explore research as a rewarding career path. I emphasized the importance of curiosity, perseverance, and continuous learning in achieving success in any field. The presentation was followed by a lively question-and-answer session, during which students raised thoughtful questions about research life and optical communication technologies. Their enthusiasm and engagement made the session highly interactive and fulfilling.

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

- 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。）: It was quite insightful to know the passion of students towards the science.


日本学術振興会