

(For JSPS Fellow)

Form B-5

Date (日付)

27/02/2018 (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) : Carlos Sánchez Muñoz
(ID No. PE17030)

- Participating school (学校名): Hikawa High School

- Date (実施日時) : 22/02/2018
(Date/Month/Year: 日/月/年)

- Lecture title (講演題目): Exploring the applications of Quantum Mechanics

- Name and title of your company (同行者職・氏名)

There was no accompanying person.

- Lecture format (講演形式):

◆Lecture time (講演時間) 70 min (分), Q&A time (質疑応答時間) 20 min (分)

◆Lecture style(ex.: used projector, conducted experiments)

(講演方法(例: プロジェクター使用による講演、実験・実習の有無など))

Lecture using a projector

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

In this lecture, I introduced the students of Hikawa High School to my country, my trajectory as a researcher, and my research. I highlighted Spain's diversity, from a cultural and natural point of view, and the interesting perspectives of becoming a scientist. In the scientific part of the talk, I discussed my work, which is to study the applications of quantum mechanics for the development of new technologies. Quantum mechanics is the set of physical laws that describe the world of very, very small things, such as atoms. At such a small scale, objects behave in a way completely different from the objects of our everyday life, like a tennis ball. For instance, "quantum objects", like atoms, photons or electrons, can be in many places at the same time!! This mysterious effect is called "quantum superposition", and although it looks like magic, it really happens and it is measured in laboratories around the world everyday. Our objective is to use this extraordinary properties of the quantum world to design new devices, like extremely powerful computers that can perform calculations that are currently impossible. I focus my studies on a very particular ingredient that will be essential in these future quantum machines:

light.

- Overall advice or comments to future participants in the program (今後の講師へのアドバイス):

Regarding the scientific part, I believe it is important to prepare in advance to prepare a talk in the most simple terms. Speaking slowly and using a lot of visual aid, such images and Japanese keywords, helps a lot. Mixing scientific content with personal experiences from the researcher seems to kindle the student's interest; they are very eager to know not only about your science, but about you as a person, so this can be an asset to transfer the knowledge to them more easily.

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

- Impressions and opinions from a company (同行者の方から、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。)

There was no accompanying person.