

(For JSPS Fellow)

Form B-2
(FY2018)

Date (日付) 01/12/2018

(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) Dominik LUNGERICH (ID No. P17702)

- Participating school (学校名) Tokyo Metropolitan Toyama High School

- Date (実施日時): 29/11/2018 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): Behind the Visualization of Atoms and Molecules

- Name and title of your accompanying person (講義補助者 職・氏名)

Mr. Ko KAMEI

- Lecture format (講演形式): PPT

◆Lecture time (講演時間) 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))

Used projector, blackboard and conducted experiments

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

In form of synthetic products like e.g., medicine, cleaning products, or plastics, we recognize chemistry in our daily life. However, chemistry is not only the matter of human produced products, but it also covers important processes found in nature. Photosynthesis in green plants, or the oxygen transport in our blood cells are only a few examples. In nowadays light-emitting technologies, a great portion of chemistry is hidden as well. Thus, the chemistry behind the emission of light will be discussed first by looking at atoms. Upon discussing the effects of orbitals and the excitation of atoms, molecules and their design will be discussed in more detail. While the emission of light can give us indirect information about the atoms and molecules, the question will be raised, if we are able to actually see molecules with our own eyes. In that sense, the reason why we cannot see molecules with the help of visible light will be discussed, and a new tool, namely electron microscopy will be introduced and explained. State-of-the-art pictures and videos of molecules and atoms will be shown. Finally, a discussion of the visually observed atoms and molecules will demonstrate, which kind of information we can learn from electron microscopic observations, important for the fundamental understanding of chemical processes and future generation technologies.

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

The Science Dialogue program is a lot of fun and can be only recommended.

Must be typed

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

None

- 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。)

None