

(For JSPS Fellow)

Form B-2
(FY2018)Date (日付)
21 1 2019 (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): Donguk Suh (ID No. P17068)- Participating school (学校名): Kiryu High School- Date (実施日時): 12 1 2019 (Date/Month/Year: 日/月/年)- Lecture title (講演題目): Understanding Phase Transitions by Molecular Dynamics and Beyond- Name and title of your accompanying person (講義補助者 職・氏名)
None

- Lecture format (講演形式):

◆Lecture time (講演時間) 75 min (分), Q&A time (質疑応答時間) 15 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))

Powerpoint presentation and conducted a simple experiment

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

I use molecular dynamics to simulate phase transitions, such as condensation (vapor-to-liquid), bubble formation (liquid-to-vapor), and crystallization (liquid-to-solid). Some phase transitions start from only a few molecules, so one needs to understand the actual behavior of molecules. This can be done with molecular dynamics, which calculates the movement of every molecule over time. In the talk, I explained nucleation, which is a precursor to the aforementioned condensation, bubble formation, and crystallization phenomenon. When there are seed particles, nucleation will occur more quickly. The talk also dealt about how different seed shapes and sizes affected the nucleation rate.

A simple experiment was conducted with the students by using a typical plastic bottle and water with a match. A cloud was made inside the plastic bottle by pressing the bottle. The relation between the experiment and the fundamentals of the phase transition phenomenon were elucidated during the talk.

As requested by the inviting teacher at the high school, I explained to the students on the importance of studying English and how to better learn a foreign language. I explained the importance of not being afraid to fail and trying hard in everything they encounter. I also told them to find their passion in life and pursue it till the end.

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

The students are very nervous, so lightening the mood of the lecture is very important.

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

I was very impressed that the students were very eager to learn and understand the lecture. I think it was a valuable time for them as well as myself.

- 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