Must be typed

（For JSPS Fellow）

Form B-2
(FY2018)

Date（日付）
08/03/2019 （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）: Pincella Francesca （ID No. P17759 ）

- Participating school（学校名）: Hyogo Prefectural Kawanishi-midoridai Senior High School

- Date （実施日時）: 06/03/2019 （Date/Month/Year:日/月/年）

- Lecture title（講演題目）: The amazing world of nanoscience

- Name and title of your companying person（講義補助者 職・氏名）
Iwakami Mako (Ms.), Master course student

- Lecture format（講演形式）:
◆Lecture time（講演時間） 50 min（分）, Q&A time（質疑応答時間） 10 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））
I used PowerPoint slides and a projector.

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

At first I introduced myself, my hometown and my education becakground. I briefly talked about famous Italian scientists and what made me decide to have a career in research. When I was a Physics student, I got interested in the physics of soft matter, and nanoparticles in particular. My research then focused on the synthesis and applications of different types of nanoparticles. I then explained to the students what is a nanoparticle, that is a particle with the typical size of 10^-9 meters, which means one million times smaller than a millimeter. Such small particles cannot be seen with the naked eye or even with a conventional optical microscope. In fact, instead of the optical microscope, we need to use an electron microscope, where instead of the light we use electrons to see our nanoparticles. I explained to the students what an electron microscope is and what we are allowed to see with that instrument. Afterwards, I gave a few examples of the various applications that nanoparticles can have in real life. The examples came from my past research experience, for example the nanoparticles can be used to purify water from factory waste or to detect diseases earlier than with standard clinical tests. Finally, I introduced my current research topic as a JSPS fellow, which is the degradation of lignin with nanoparticles catalysts. I introduced the concept of catalyst and explained the difference between homogeneous and heterogeneous catalyst. I later

explained why nanoparticles are promising as catalyst for lignin degradation and introduced my strategy for the successful degradation of lignin with magnetite nanoparticles.

- Overall advice or comments to future participants in the program（今後の講師へのアドバイス）:
I recommend future participants to interact often with the students and to ask them questions to keep them interested and evaluate their understanding.

- Other noteworthy information（その他特筆すべき事項）:
No additional information.

- 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。）

I was impressed with curiosity of the students. Thank you for your giving me such a chance. However, I guess there were many students who couldn't ask Francesca questions because of their shyness. So, I hope that the system to communicate with a foreign speaker would become easier for all the people.