

(For JSPS Fellow)

Form B-5

Date (日付)

25/02/2014 (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): Dr. Gudrun Niehues (ID No. P 13701)- Participating school (学校名): Fukui Prefectural Fujishima Senior High School- Date (実施日時): 22/02/2014 (Date/Month/Year: 日/月/年)- Lecture title (講演題目): (in English) Spectroscopy: From the Basics to THz Laser Spectroscopy(in Japanese)

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

My lecture started with an introduction to Germany and my motivation to become a scientist. I introduced the students to the terahertz (THz) laboratory of Prof. Masahiko Tani at the University of Fukui by showing experimental setups as well as typical tools and optical elements used for optical setups. In this context, I also exemplified typical tasks of scientists and emphasized the international environment in science.

To give the students some insights to the topic of my research, I initially explained the basics of spectroscopy (electromagnetic waves, important elements of a spectrometer e.g. gratings etc.), followed by a short illustration of applications of spectroscopy in general and THz spectroscopy in particular. After this, the students were involved by conducting a small experiment on their own: They did a paper craft to build a small spectrometer. Then they used the spectrometer to observe the composition of sunlight and the composition of fluorescence light from the room lighting. Whereas for sunlight they could see a continuous visible spectrum, the fluorescence light is non-continuous. I also used the projector to produce light of changing colors, so that the students could observe the different compositions. Afterwards, my assistants and I demonstrated the measurement of spectra of fluorescence light as well as light emitting diode (LED) by using a compact spectrometer from our laboratory. To show the students non-visible parts of the electromagnetic spectrum the emission of an infrared (IR) LED was demonstrated.

- Language used (使用言語): English

- 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))

used projector, students conducted experiments, demonstrated experiments with a spectrometer from the research center

- ◆ Interpretation (ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

assistance by accompanied person

- ◆ Name and title of accompanied person (同行者 職・氏名)

Prof. Masahiko Tani, Dr. Stefan Funkner, Satoshi Tsuzuki

- ◆ Other note worthy information (その他特筆すべき事項):

- Impressions and opinions from accompanied person (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。):