

(For JSPS Fellow)

Form B-5

Date (日付)

04/12/2013 (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): Martin WEILER (ID No. PE12083)- Participating school (学校名): Nagano Prefecture Suwa Seiryō High School- Date (実施日時): 22/11/2013 (Date/Month/Year: 日/月/年)- Lecture title (講演題目): Photoionization induced solvent migration in Acetanilide(H₂O)-cluster (in Japanese)

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

The presentation was divided into three parts. The first part contained information about myself, as well as some information about Germany, my hometown and my personal background. Furthermore, I explained why I am personally interested in science and chemistry and gave my motivation to become a chemist.

The second part contained the explanation of the basic principles, the theory and terms of my current work. First, I tried to use simple examples the students might have known from their lessons and based on this knowledge, I tried to introduce my current work and gave an motivation for work I introduced in the third part.

In the third part, the way to obtain structural information of a molecule (molecular cluster) by applying spectroscopic techniques has been explained. As an example, I chose Acetanilide (AA) which is one of the smallest aromatic molecules containing a peptide linkage and acts as a model substance of peptide-water interaction. In case of the water 1:1 cluster, a rearrangement of the solvent molecule induced by photoionization is observed. In the neutral states, the water molecule is either hydrogen-bonded to the CO or to the NH site of the peptide bond. In the cationic ground state (D₀) only one isomer, the NH bound isomer, is observed. By applying time resolved infrared (IR) spectroscopy, the migration of one single water molecule around this peptide linkage was observed in real time and a lifetime of 5 ps for the migration measured.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 60 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))

PowerPoint presentation, projector used

- ◆ 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 English teachers of school

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

- ◆ 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。):