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平成 年 月 日

To: President, Japan Society for the Promotion of Science

独立行政法人日本学術振興会理事長 殿

## 研究活動報告書

### RESEARCH REPORT

1. 被招へい研究者 所属・氏名 Name of Fellow, Affiliation NOGUER Thierry, Université de Perpignan Via Domitia (France)
2. 受入研究者 所属・職・氏名 Name of Host, Position, Affiliation SASAKI Satoshi, Tokyo University of Technology, School of Health Sciences (Japan)
3. 研究テーマ Research Theme under the Fellowship
4. 採用期間 Fellowship Period 平成 28 年 11 月 30 日 ~ 平成 28 年 12 月 14 日 From(Japanese Year/Month/Day) To(Japanese Year/Month/Day)
5. 研究実施の状況とその成果 Research implementation and results <p>I stayed in Japan during 15 days in the frame of BRIDGE 2016 program. I was hosted by Prof Satoshi SASAKI, who was my host researcher during my post-doc in 1998-1999. I had the chance to stay in Kamata Campus and to meet different professors, including Prof UMEDA, Dean of the School of Health Sciences, and Prof. NOZAWA. I was kindly asked to give a conference presenting the French educational system for medical studies, which is of particular interest for this institution.</p> <p>During my stay, I focused on meeting Japanese researchers working in the area of sensors and biosensors. More specifically I had the opportunity to visit colleagues from different laboratories in Tokyo area:</p> <ul style="list-style-type: none"><li>-Prof Kohji MITSUBAYASHI, at Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University. This research tem is particularly famous for developing enzymatic sensors for detection of compounds in gaseous phase. I had the opportunity to give a lecture to lab members and students entitled “ Biomimetic Sensors : An alternative to conventional biosensors?” Following this visit, we have applied for a “Exploration Japan” program from French Embassy for financing a short term fellowship for M. Hussein Kanso, researcher in my laboratory (BAE-LBBM-UPVD). The project aims to develop gas-phase sensors using biomimetic sensors involving salan metal complexes. We hope that this demand will be successful to initiate this new collaboration.</li><li>-Prof. Takuo AKIMOTO, at School of Bioscience and Biotechnology, Tokyo University of Technology, (Katakura, Hachioji). We have discussed with Dr AKIMOTO on the possibility to apply his highly sensitive high-contrast fluorescence imaging to the detection of naturally fluorescent targets using aptamers as capture molecules. Such a project could be carried out in a near future, using as a proof of concept well known mycotoxins.</li><li>-Prof. Hajime MITA, Prof. Kyoko OKUDAIRA and Dr Yuko KAWAGUCHI, at Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency (Sagamihara campus, Kanagawa). This team works on Interplanetary Transfer of Microbes at the Exposed</li></ul>

Facility of the International Space Station. We discussed on the possibility to design sensors for detection of bacteria.

During the second week of my stay, I have had the opportunity to visit 2 laboratories in Kansai area :

- Department of Chemical Engineering and Materials Science, Doshisha University, Kyoto. I had the opportunity to give a conference to lab members and students entitled “Potentialities and applications of biosensors for monitoring environmental and biotechnological processes” .

I had very interesting discussions with Prof. Akihisa SHIOI and Prof K. YOSHIKAWA, from faculty of Life ad Medical Sciences. Prof. SHIOI is particularly interested in non-linear chemistry and its potential for developing new generations of sensors. These reflections are made in tight cooperation with my host researcher, Prof Satoshi SASAKI.

- Tamiya Laboratory, Nano-bioengineering Area, Department of Applied Physics, Division of Precision Science & Applied Physics, Graduate School of Engineering, Osaka University. I met Prof Eiichi TAMIYA, head of one famous group working in several aspects of sensing and Biosensing Technologies. , as well as two collaborators, Prof. Masato SAITO and Prof. Hiroyuki YOSHIKAWA. I also met a post-doc researcher from Academia Sinica (Taiwan), Dr Kuang-Li LEE, who is an expert in surface plasmon resonance techniques and develops highly sensitive systems based on oblique-angle-induced fano resonance. We exchanged on the possibility of developing affinity sensors based on this principle, using DNA aptamers as capture molecules.

6. 受入研究者よりコメントがあれば記載してください。 **Comments from Host**

Professor Noguer’ s visit was really fruitful one for our University, especially for the undergraduate students in the department of health sciences, who usually do not have chances to communicate in English. This occasion was a good start for our department to start the invitation of foreign researchers.

7. 被招へい研究者よりコメントがあれば記載してください。 **Comments from Fellow**

I particularly appreciated this experience in the frame of BRIDGE 2016 program. It was a unique occasion for me to visit and discuss with Japanese colleagues who work in the field of biosensing, but also to draw new collaborations with scientists involved in other research activities, such as non-linear chemistry or physics.

I want here to sincerely thank the Japanese Society for the Promotion of Science for their support, and I wish to continue my collaboration with Japanese researchers through bilateral Research projects.

注1. 本様式は受入研究者と被招へい研究者が協力して作成してください。

注2. 本様式は受入研究者より、採用期間終了後3か月以内に、電子メールにてご提出ください。

The Host is requested to make this form in cooperation with the Fellow and submit to JSPS by email within 3 months after the end of the fellowship. The form can be written either in English or in Japanese.