



MADELEINE RAMSTEDT

From Sweden to France



Project: **Surface analysis of bacterial systems**

Research topic: **Chemistry**

Swedish Institution: **Umeå University**

French Institution: **Lorraine University**

Dates of mobility: **07/04/2018 to 20/04/2018**

Program: **SFVE-A (ex-FRÖ)**



PRESENTATION

[Madeleine Ramstedt](#) is Associate Professor at the [Department of Chemistry](#) at [Umeå University](#). Current research interests include, among others, [environmental](#) and [anaerobe microbial](#) biofilms, and [bacterial membrane vesicles](#) for biomedical engineering in e.g., drug delivery vehicles or vaccines. She directs her own [research group](#) at the Madeleine Ramstedt Lab. She graduated in 2004 with a PhD degree in Inorganic Chemistry from Umeå University.

ACTIVITIES IN FRANCE

Madeleine Ramstedt travelled to Nancy to visit Dr. [Fabienne Quilès](#) (CNRS) and other members of the unit for Chemistry and Spectrochemistry of Interfaces ([CSI](#)), at the Laboratory for Physical Chemistry and Microbiology for the Environment ([LCPME](#)) at the University of Lorraine ([UL](#)). She had in-depth discussions with Dr. [Grégory Francius](#) (CNRS), [Sofiane El-Kirat-Chatel](#) (CNRS), Dr. [Martine Mallet](#) (UL), Aurélien Renard (CNRS), and [Elena Yunda](#) (PhD Student). Among other topics, she was inspired by the method employed by Dr. Quilès and Dr. Francius to use FTIR and AFM to study biofilm formation and properties, and how experiments were prepared and performed at the UL. Furthermore, she discussed the method of cryogenic XPS to study bacterial cells with Dr. Mallet and M. Renard, who were keen to implement the method on LCPME instrumentation.

On top of this, she gave a lab seminar on the prevention of bacterial colonization for 30 people and performed experimental work at the LCPME. She explored the possibilities to extend an existing international research collaboration to add the expertise held at LCPME, regarding interaction between bacterial cells attached to an AFM cantilever. They also initiated a bilateral project on bacterial strain differences in biofilm formation of *Pseudomonas fluorescens*, combining complementary analysis methods and preparing a joint publication. A third project on the influence of bacterial cell wall composition on bacterial interactions with synthetic materials was discussed.