



ESTELLE LEBÈGUE

From France to Sweden



Project: **Bio and Nano electrochemistry**

Research topic: **Chemistry**

Swedish Institution: **Gothenburg University**

French Institution: **Université de Nantes, CEISAM**

Dates of mobility: **16/08/2021 to 20/08/2021**

Program: **SFVE-A (ex TOR)**



PRESENTATION

[Estelle Lebègue](#) is an Assistant Professor at [Nantes University](#), in the [CEISAM Laboratory](#). She has a strong background in Bio-&Nano-electrochemistry, Surface Chemistry and Materials Science acquired since her Master's degree in Chemistry in 2010 when she worked on electrocatalysis, while her [Marie Skłodowska-Curie](#) individual fellowship in 2019 focused on bioelectrochemistry. Her main scientific skills deal with carbon modification, nanoparticles and nano-objects, lipid membranes, redox proteins and electroactive bacteria.

Her current research proposes new avenues in electrochemical monitoring of pathogenic bacteria at the single cell scale. She focuses on the electrochemical study of various biological nano-objects (vesicles, liposomes, bacteria) at the single entity scale to elucidate in real time the unique and specific response depending on experimental conditions at an ultramicroelectrode.

ACTIVITIES IN SWEDEN

The main purpose of Estelle Lebègue's visit was to meet [Prof. Andrew Ewing](#) at [Gothenburg University](#), whose research focus in Analytical chemistry, especially in imaging including fluorescence (both ratiometric and lifetime based), electrochemistry, mass spectrometry, biosensing, nanobioengineering, artificial cell structures and single cell analysis. Their collaboration concerned single cell measurements, neuroscience, cell structure, and in vivo electrochemistry. During her stay, Estelle Lebègue attended a seminar where she presented her current research in a talk entitled "Electrochemistry of single nano-impacts for bacteria sensing". To pursue this collaboration, a collaborative project between France and Sweden have been discussed (e.g., to fund a PhD student), and Prof. Andrew Ewing's visit to Nantes has also been planned to attend a seminar and to meet French researchers working on various chemistry topics.