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JACQUES COVÈS

From France to Sweden

Project: **Metal-binding molecules: Book "The Rhubarb Connection and Other Revelations"**

Research topic: **Chemistry**

Swedish Institution: **Chalmers University of Technology**

French Institution: **University of Grenoble**

Dates of mobility: **14/05/2017** to **21/05/2017**

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

PRESENTATION

Jacques Covès has worked as a Research Director at CNRS and as a researcher at the Structural Biology Institute of the University of Grenoble. As a team leader, he has published extensively on metal homeostasis and regulation alongside the world of membrane proteins in relation to metal-mediated envelope stress, antibiotic sensitivity and virulence-associated phenotypes. Lately, he has focused more on English-French translation of scientific literature for the French editor EDP Sciences. He obtained his PhD in Biochemistry in 1987 and was habilitated (HDR) in 1996 at the University of Grenoble.

ACTIVITIES IN SWEDEN

The objective of this mobility was a "kick-off meeting" for the book "The Rhubarb Connection and Other Revelations: The Everyday World of Metal Ions" (Cambridge Royal Society of Chemistry) on metal-binding molecules illustrating chemistry specializing in metal chelation, aimed at a wider audience and co-authored by Covès and Prof. Lars Öhrström from Chalmers University of Technology. They thus discussed distribution and structure of the chapters and content of the book, and started producing the preamble. Chapters were envisaged on among others nickel and its relations to the Austerlitz campaign of Napoleon I and anti-alcoholism treatments; atmospheric nitrogen fixation for fertilizer production (cf. Nobel laureate Fritz Haber); and the search for the original pigments in the paintings that adorned the Vasa ship's hull. For this, a research visit to the Vasa Museum in Stockholm was carried out. During the trip to Stockholm, he also visited the Nobel Prize Museum which inspired a chapter project on the metals contained in the porphyrins of chlorophyll (Nobel Prize for Melvin Calvin) or hemoglobin (Nobel Prize for Max Perutz). The original experiments and structures are detailed in this museum.

During the trip, Covès also wrote an article on the biology of strontium in oceans where ill-known planktonic organisms are capable of absorbing highly diluted strontium to precipitate sulphate strontium, the main constituent of their skeleton.