



Invited Talks
SOLAREM project

*Solar-active nanostructured materials for innovative remediation
of water contaminated by pharmaceuticals*

Friday 22nd September
CPS+ conference room (B1-322)

9h10 – prof. Dr. Marcello Brigante
Dean, Faculty of Chemistry, University of Clermont-Auvergne

Title: Environmental photochemistry in water media
at the Institute of Chemistry of Clermont-Ferrand (ICCF)

Abstract:

Environmental chemistry concerns the reactions that take place in different environmental compartments. In particular, environmental photochemistry includes homogeneous and heterogeneous processes initiated by the absorption of light. Many research groups are working to gain a better understanding of these processes mediated by solar radiation, but also to use the identified reactions to improve water decontamination processes. In fact, these two subjects have in common the formation, quantification and reactivity of short-lived species such as inorganic radicals. Inorganic radicals are one of the main contributors to the oxidation of organic/inorganic compounds in natural and waste waters. However, detecting them and assessing their reactivity is challenging and required the use of advanced spectroscopic techniques. In this talk, I will present some specific results of my research group at ICCF, France in the above-mentioned field.

Short bio:

Marcello Brigante is a Full Professor at the Université Clermont Auvergne since 2017. He is the Dean of the Faculty of Chemistry and the head of the team “Photochemistry, Reactivity and Environment” at the Institut de Chimie de Clermont-Ferrand. Prof. Brigante is an expert in photo-induced chemical reactions, AOPs, wastewater treatments and the reactivity of inorganic radicals and has published until now more than 100 articles in international peer-reviewed journals with $h = 37$.

9h40 – Ing. Guillaume Voyard
Head, Chromatography Analytical Platform, CNRS - ICCF

Title: From Cloud to Ocean... Interest and use of IC-MS
at the Institute of Chemistry of Clermont-Ferrand (ICCF)

Abstract:

The Chromatography Analytical Platform is part of the SSTAR (Scientific, Technical, and Administrative Services of Research) at our institute. With the support of around twenty Liquid Chromatography systems, this platform enables not only the scientists at ICCF but also the other academic and industrial laboratories to address analytical challenges. Among our systems, Ionic Chromatography coupled with Mass Spectrometry (IC-MS) is a crucial tool in modern analytical chemistry. Why to use such a system? The water cycle and all its constituents in each environmental compartment provide a perfect example of the application of IC-MS (anions, cations and/or carboxylic acids).

Short bio:

Guillaume Voyard is a CNRS Research Engineer at the Institut de Chimie de Clermont-Ferrand. He is the Head of the Chromatography Analytical Platform and he is an expert in physico-chemical analyses, especially liquid and ionic chromatographies.

Programme of the SOLAREM meeting

	Speaker	Presentation
8h55 9h00	Olivier Monfort	<i>Welcome speech</i> SOLAREM Coordinator
9h00 9h10	Yan Pautrat Martina Saganova	<i>Opening speech</i> Institut Français de Slovaquie Ambassade de France en Slovaquie
9h10 9h40	Marcello Brigante	Environmental photochemistry in water media at ICCF
9h40 10h10	Guillaume Voyard	From Cloud to Ocean... Interest and use of IC-MS at ICCF
10h10 10h30		<i>Coffee break</i>
10h30 10h50	Sridhar Gowrisankaran PhD student	A comprehensive study of surface activation of CuFe ₂ O ₄ catalyst by oxidants for highly efficient water decontamination
10h50 11h10	Shalu Atri SASPRO2 postdoc	Dual performance of ferrites decorated MXene-based nanocomposites in caffeine removal and H ₂ production
11h10 11h30	Arshitha Madhusudhan PhD student	An initiative towards a circular economy for water treatment employing hydrochar-Fe composites