

Claude Grison - Curriculum vitae

French, female, one child

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Professional Address: Laboratory of Bio-inspired Chemistry and Ecological Innovations UMR 5021 CNRS-University of Montpellier - ChimEco Cap Delta – 1682 rue de la Valsière – 34790 Grabels - Email : claudio.grison@cnrs.fr

Current position: Research Director at CNRS « Exceptional class » (after 20 years of higher education as a University Professor)

Industrial Postdoctorate: Lacq Research Group - ELF Aquitaine led to the registration of 7 patents and 13 industrial contracts

Research Areas

In an international context of ecological and sanitary crisis, Claude Grison has oriented her research towards a new interdisciplinary approach of chemistry capable of building a different future. The aim is to involve green and sustainable chemistry in the resolution of environmental problems. Today, the discipline is oriented towards the sole research of "cleaner" synthesis processes, whereas it can be much more ambitious, because it has from a fundamental point of view the means to contribute, in synergy with Scientific Ecology, to the resolution of major environmental concerns, and to fit efficiently into the circular economy system suggested by the Sustainable Development Goals.

Claude Grison chose to prove that this new chemistry could play a leading role in responding to the challenges of climate change, biodiversity erosion, soil, river and groundwater pollution, and the multiplication of invasive alien plant and animal species. The approach was built around a new concept: associating nature, ecology and chemistry (<http://www.chimeco-lab.com>).

This new approach has first allowed to progress in the understanding of adaptation strategies of plants and associated microorganisms, to respond to aggressions such as pollution. Thus, some plant species are able to develop in environments contaminated with metallic elements, or even to sequester toxic pollutants in their leaves or roots. This research has led to original solutions for the decontamination of soils and aquatic systems and to the identification of new integrated and bio-inspired rehabilitation approaches.

Far from being waste, these plants from phytotechnologies of remediation (phytoextraction, rhizofiltration, biosorption) are valorized in a new way. Taking advantage of the remarkable capacity of certain plants, living or dead, to bioconcentrate transition metals in the leaves or roots, it has been possible to transform metals derived from contaminated plants into biosourced metal catalysts for organic synthesis. This original approach is the first example of a chemical catalyst based on phytotechnologies. It offers the first prospect of valorization of this unique biomass and initiates a new branch of green chemistry recognized internationally) called Ecocatalysis.

Summary of Research Activities

Publications: 204 manuscripts including 24 book chapters and 43 patents

Oral and poster presentations: 197

Invited lectures: 170

Excellence bonus given by the Ministry to outstanding teacher-researchers (during 12 years)

Supervision of 26 PhD students

Supervision of 20 postdoctoral fellows

Supervision of 70 Master students

Prizes

Medal of Innovation from "Montpellier Excellence University" 2020

Prize winner of « Agir pour la Ressource en eau » program 2018 Suez Fondation

Prize winner of François Sommer Fondation 2016

Prize winner of Alexandre Johanides / French Academy of Sciences 2016

Chevalier of the Legion of Honor / France 2015

Medal of Innovation from CNRS (outstanding exceptional and innovative research) 2014

Prize winner of Ecotechnologies (National Agency of Research) 2014

Prize winner of InnovEco / International meeting / France 2013

Prize winner of Cosminnov, « Innovation » category / International congress 2013

Prize winner of « La Recherche », « Environment » category / Scientific Press 2011

University Trophy of the Eco-Actions Prize delivered at the French National Assembly 2010

Prize winner of ADEME "Innovative Technologies for the Environment"/International meeting 2012

Executive board

Director of the laboratory "Bio-inspired Chemistry and Ecological innovations" CNRS-UM (UMR 5021 CNRS-UM, 2014-2025)

Deputy director of the laboratory "Biomolecular Chemistry" (UMR 5032, Montpellier) (2004-05)

Co-Director of the laboratory "Biomolecular Organic Chemistry" (UMR 7565, UHP-Nancy 1) (1994-2003)

Scientific director of two companies: Bioinspir and Laboratoires Bioprotections

Institutional and (inter)national responsibilities

Member appointed for the Scientific Leading Committee of the Research National Agency

Member appointed for the Leading National Committee of ASCO Remediation (CVTAllenvi)

Member appointed for the 'National Alliance of Research for Environment ALLEnvi

Member appointed for the InterDisciplinary National Commission of CNRS 45 and 52 Environment and Society» - Representative from the Chemistry

Member appointed for the Scientific Council of "National Museum of Natural History"

Member appointed for the International Scientific Council of CEBALabex

National Expert for the Rewards of Scientific Excellence (MNHN, CNRS, Ministry)

Expert for ANR programs and HCERES (High Council of Research Evaluation)

Member of Communication Group of the French Chemical Society