

Christophe LEGER

LEGER, Christophe. Year of birth: 1971. Nationality: French

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RESEARCH INTERESTS

Trained as a physical chemist, I have been interested in the interface between (electro)chemistry and biochemistry. In particular, I have worked on using electrochemistry as a kinetic tool to study the catalytic mechanisms of metalloenzymes involved in the biological recycling of small molecules (H₂, CO₂) ; in the kinetic modeling of reaction diffusion systems where the redox enzyme is embedded into a redox polymer film ; and more recently in electrochemical studies of small, biomimetic inorganic complexes.

EDUCATION

- "Habilitation à diriger des recherches" (advanced university diploma) Aix-Marseille University, France (2007). Examination committee including Jean-Michel Savéant, William Rutherford and Marc Fontecave.
- Ph. D. in physical chemistry under the supervision of Françoise Argoul, Bordeaux University, France (1999): "Experimental and theoretical study of morphological instabilities in electrochemical systems".
- "Agrégation" of chemistry. This is a national, competitive advanced teaching diploma.

CURRENT AND PREVIOUS POSITIONS

- Director of Research. CNRS. This is a permanent research position (since 2002).
- Group leader since 2008 at the lab of Bioenergetics and engineering of proteins, CNRS Marseille. Group web site: <https://bip.cnrs.fr/groups/bip06/>
- Post-doctoral researcher in the group of Fraser A. Armstrong (UK) (1999-2002).

>125 PUBLICATIONS SINCE 1996, incl. >55 as corresponding author (see [complete list](#))

Including:

- C. Léger and P. Bertrand. "Direct electrochemistry of redox enzymes as a tool for mechanistic studies" **Chem. Rev.** (2008) [doi: 10.1021/cr0680742](https://doi.org/10.1021/cr0680742) (OA)
- V. Fourmond and C. Léger "Protein Electrochemistry: Questions and Answers" **Adv. Biochem. Eng. Biotechnol.** (2016) [doi: 10.1007/10_2015_5016](https://doi.org/10.1007/10_2015_5016)
- M Sensi, M del Barrio, C Baffert, V Fourmond, C Léger "New perspectives in hydrogenase direct electrochemistry", **Current Opinion in Electrochemistry** (2017) [doi: 10.1016/j.coelec.2017.08.005](https://doi.org/10.1016/j.coelec.2017.08.005)
- A. Fasano, V. Fourmond and C. Léger, "Outer-sphere effects on the O₂ sensitivity, catalytic bias and catalytic reversibility of hydrogenases", **Chem. Sc.** (2024). [doi: 10.1039/D4SC00691G](https://doi.org/10.1039/D4SC00691G) (OA)
- M. Malagnini, A. Aldinio-Colbachini, L. Opdam, A. di Giuliantonio, A. Fasano, V. Fourmond, C. Léger. Initial quality assessment and qualitative interpretation of protein film electrochemistry catalytic data. **Bioelectrochemistry** (2025) [doi: 10.1016/j.bioelechem.2025.108967](https://doi.org/10.1016/j.bioelechem.2025.108967) (OA)

100 ORAL COMMUNICATIONS since 2002, incl. 37 international and invited lectures.

Including:

- 26/09-01/10/2010. 61th annual ISE meeting, tutorial on “Redox Protein and Redox Enzyme Electrochemistry : Fundamental Studies and Applications”
- 08/2014 Gordon conference on “Electron Donor-Acceptor Interactions”, invited lecture on “Using direct electrochemistry for studying the catalytic mechanisms of metalloenzymes”
- 01/2016 Gordon conference “Electrochemistry”, invited lecture.
- 06/2018, Gordon Research Conference “Metallocofactors”, invited lecture on "Structural themes and functional variations in homologous enzymes that oxidise H₂ or CO"
- 04/2019, 12th International Hydrogenase Conference, Portugal, plenary lecture on hydrogenase electrochemistry.
- 19-23/5/2024, XXVIII International Symposium on Bioelectrochemistry and Bioenergetics of the Bioelectrochemical Society, Alcalá de Henares (Madrid), Spain, [Plenary lecture](#)

INTERNATIONAL & NATIONAL AWARDS and Academy memberships

- [Luigi Galvani Prize](#) of the Bioelectrochemical Society (2013).
- ["Prix Charles Dhéré" of the French Academy of Sciences](#) (2015).
- [Regional "grand prize" of the French Chemical Society](#) (2018).
- Long term member of the International Society of Electrochemistry (ISE), Bioelectrochemical society (BES), French Chemical Society (SCF), and French Biochemistry and Molecular Biology society (SFBBM).

ORGANIZATION OF INTERNATIONAL AND NATIONAL SCIENTIFIC MEETINGS

- Organization of five international workshops (2016-2025) on "Redox films from energy conversion, bioelectrochemical and molecular systems"
www.redox-shields.org/workshops/
- Organization committee of the International Hydrogenase 2016 conference in Marseille, and scientific committee of the 2022 Hydrogenase conference (Idaho, USA).
- Organization or co-organization of national or binational [meetings](#) and international [summer schools](#) of the FrenchBIC (bioinorganic chemistry) network, since 2015.

INSTITUTIONAL RESPONSIBILITIES

- President, then VP, of the French CNRS Research Network on Bioinorganic Chemistry (www.frenchbic.cnrs.fr) 2014-2024. This network brings together around 200 researchers.
- President of the [Groupe Francais de chimie bioinorganique](#) of the French Chemical Society, since I created this group in 2019, until 2025.
- Board member of the Solar Fuels French network (www.solarfuels.cnrs.fr).
- Full member of the Physical-chemistry group (31st section) of the “*Comité National des Universités*”, which pre-selects the candidates for university academic positions and gives promotions and merit payments to university academic staff at the national level (2019-2024).