

Curriculum Vitae

Personal Data

First name	Nicolas
Name	Plumeré
Current position	Associate Professor
Current institution	Professorship for Electrobiotechnology Technical University of Munich
ORCID	000-0002-5303-7865

Qualifications and Career

Stages	Periods and Details
Studies of Biology and Chemistry	October 1997 - September 1999 University of Strasbourg, Strasbourg, F
Studies of Chemistry (BSc Honours)	October 2002 - September 2004 University of Western Scotland, Glasgow, UK
Doctorate	October 2004 - October 2008 PhD in inorganic chemistry University of Tübingen, Tübingen, DE
Postdoctoral research	December 2008 - August 2009 Postdoctoral Fellowship with Prof. Dr. Wilbur H. Campbell, NECi, Lake Linden, MI, USA.
Independent Research Group Leader	March 2010 – September 2017 Center for Electrochemical Sciences Ruhr-Universität Bochum, Bochum, DE
Associate Professor (W2) in Analytical Chemistry	October 2017 – August 2020 Faculty for Chemistry and Biochemistry, Ruhr-Universität Bochum, Bochum, DE.
Associate Professor (W3) in Electrobiotechnology	Since September 2020 Campus Straubing, Technische Universität München, München, DE
Visiting Professor	April 2022 - July 2022 University of Cambridge, Cambridge, UK.

Engagement in the Research System

- 2021 - Guest editor for PNAS and for themed collections in Chemical Science.
- 2019- Advisory Board member of Chemical Science.
- 2018 - Council member of the Bioelectrochemical Society.
- 2015 - Board member of ECHEMS, the international organization aimed at promoting the use and development of electrochemistry.
- 2015- Board member of EBS, European Biosensor Symposium.

Research Publications

Zhang H., Saadeldin M. G., Buesen D., Elfaity H., Burger J., Friebe V. M., Honacker J., Vöpel T., Oughli A. A., Plumeré N.* **(2025)** A Universal Oxygen Scavenger for Oxidase-based Biosensors. *Science Advances*, 11 (37), eadw6133. [DOI: 10.1126/sciadv.adw6133](https://doi.org/10.1126/sciadv.adw6133)

Cheng F., Pavliuk O., Hardt S., Hunt L.A., Cai B., Kubart T., Hammarström L., **Plumeré N.***, Berggren G.*, Tian H.* (2024). Embedding biocatalysts in a redox polymer enhances the performance of dye-sensitized photocathodes in bias-free photoelectrochemical water splitting. *Nature Communications*, 15(1), 3202. <https://doi.org/10.1038/s41467-024-47517-9>

Castañeda-Losada L., Adam D., Paczia N., Buesen D., Steffler F., Sieber V., Erb T., Richter M.*, **Plumeré N.*** (2021). Bioelectrocatalytic cofactor regeneration coupled to CO₂ fixation in a redox-active hydrogel for stereoselective C-C bond formation. *Angew. Chem. Int. Ed.*, 60, 21056–21061. (Outside Front cover, Hot Paper), <https://doi.org/10.1002/anie.202103634>

Hardt S., Stapf S., Filmon D. T., Birrell J., Rüdiger O., Fourmond V., Léger C.*, **Plumeré N.*** (2021). Reversible H₂ Oxidation and Evolution by Hydrogenase Embedded in a Redox Polymer Film. *Nature Catalysis*, 4, 251–258, <https://doi.org/10.1038/s41929-021-00586-1>

Li H., Münchberg U., Alsheikh Oughli A., Buesen D., Lubitz W., Freier E., **Plumeré N.*** (2020). Suppressing H₂O₂ Generation to Achieve O₂-Insensitivity of a [NiFe] hydrogenase in Redox Active Films. *Nature Communications*, 11 (1), 1-7, <https://doi.org/10.1038/s41467-020-14673-7>

Buesen D., Li H., **Plumeré N.*** (2020). The Electron as a Probe to Measure the Thickness Distributions of Electroactive Films. *Chemical Science*, 11, 937 – 946 (Outside Front Cover), <https://doi.org/10.1039/C9SC03653A>

Li H., Buesen D., Démentin S., Léger C. *, Fourmond V. * and **Plumeré N.*** (2019). Complete Protection of O₂-Sensitive Catalysts in Thin Films, *J. Am. Chem. Soc.* 141, 16734-16742. (Research Highlight in Nature Reviews Chemistry DOI :10.1038/s41570-019-0141-z). <https://doi.org/10.1021/jacs.9b06790>

Li H., Buesen D., Williams R., Henig J., Stapf S., Mukherjee K., Freier E., Lubitz W., Winkler M., Happe T. and **Plumeré N.*** (2018). Preventing the coffee-ring effect and aggregate sedimentation by in situ gelation of monodisperse materials. *Chemical Science*, 9, 7596-7605. (Pick of the Week, Hot Article, Outside Front Cover), <https://doi.org/10.1039/C8SC03302A>

Alsheikh Oughli A., Conzuelo F., Winkler M., Happe T., Lubitz W., Schuhmann W., Rüdiger O.*, **Plumeré N.*** (2015) Protection from oxidative damage of the O₂ sensitive [FeFe]-hydrogenase from *Chlamydomonas reinhardtii* using a redox hydrogel. *Angew. Chem. Int. Ed.*, 54, 12329 – 12333, <https://doi.org/10.1002/anie.201502776>.

Plumeré N., Rüdiger O., Alsheikh Oughli A., Williams R., Vivekananthan J., Pöller S., Schuhmann W.*, Lubitz W.* (2014) A redox hydrogel protects hydrogenase from high potential deactivation and oxygen damage. *Nature Chemistry*, 6, 822–827. <https://doi.org/10.1038/nchem.2022>

Academic Distinctions

2022	ERC Consolidator Grant.
2019	Luigi Galvani Award from the Bioelectrochemical Society.
2016	ERC Starting Grant.