

Frédéric Barrière
Associate Professor at The University of Rennes, France

CURRICULUM

Habilitation Université de Rennes <i>Electrochimie Molecular, enzymatic & cellular electrochemistry</i>	2009
Maître de Conférences Université de Rennes	2002
Post-Doc National University of Ireland, Galway (Pr. D. Leech)	2001 / 2002
Post-Doc University of Vermont, USA (Pr. W. E. Geiger)	1999 / 2001
Lecturer University of Brest, France	1998 / 1999
European label PhD in Chemistry <i>Structural, fonctional & theoretical modeling of nitrogenase</i> Brest (Dr. J. Talarmin) & John Innes Centre, Norwich, UK (Pr. C. J. Pickett)	1994 / 1998

AWARDS & COMMUNITY WORKS

Editor-in-Chief <i>Transition Metal Chemistry</i> (Springer Nature)	2023
Invited Keynote Lecture ISE 2019 International Society for Electrochemistry Meeting (Durban, South Africa)	2019
Coordinator of the « Smart Biointerfaces » symposium EMRS Spring meeting of the European Materials Research Society (Nice, France)	2019
Member of the board of the French Bioelectrochemistry Society	2018-present
Member of the board ISMET International Society for Microbial Electrochemistry and Technology	2015 / 2018
Member of the Editotrial Board of <i>Electrochemistry Communications</i>	2014-present
Young Investigator Award in Electrochemistry French Chemical Society	2011
Coordinator of the « Biofuel Cells » symposium ISE 2010 International Society for Electrochemistry Meeting (Nice, France)	2010

PUBLICATION OUTPUT

128 publications (105 articles, 7 reviews, 15 book chapters & 1 editorial)

Scopus, 09/ 2025: >5000 citations (h = 37)

SELECTED RECENT BIOELECTROCHEMICAL PUBLICATIONS

T. Philippon, J. A. Behan, **F. Barrière**

“Microbial nitrate reduction electro-assisted by exo-electrogenic reduction of dioxygen with a *Pseudomonas* dominated cathodic biofilm”

Electrochimica Acta, **2024**, 144573.

<https://doi.org/10.1016/j.electacta.2024.144573>

J. A. Behan, R. O. Louro, **F. Barrière**

“Respiration in Electroactive Bacteria: Bio-Inorganic Aspects”

In Encyclopedia of Inorganic and Bioinorganic Chemistry, R.A. Scott Ed. (2024).

<https://doi.org/10.1002/9781119951438.eibc2792>

F.-Z. Ait-Itto, J. A. Behan, M. Martinez, **F. Barrière**

“Development of bioanodes rich in exoelectrogenic bacteria using iron-rich paleomarine sediment inoculum”

Bioelectrochemistry, **2024**, 156, 108618.

<https://doi.org/10.1016/j.bioelechem.2023.108618>

J. Rogińska, T. Philippon, M. Horeau, F. P. A. Jorand, **F. Barrière**, M. Etienne

“Challenges and applications of nitrate-reducing microbial biocathodes”

Bioelectrochemistry, **2023**, 152, 108436.

<https://doi.org/10.1016/j.bioelechem.2023.108436>

T. Philippon, F.-Z. Ait-Itto, A. Monfort, **F. Barrière**, J. A. Behan

“Fe(III) oxide microparticles modulate extracellular electron transfer in anodic biofilms dominated by bacteria of the *Pelobacter* genus”

Bioelectrochemistry, **2023**, 151, 108394.

<https://doi.org/10.1016/j.bioelechem.2023.108394>

N. L. Costa, G. Olorunto, E. Lebègue, **F. Barrière**

“Electrografted anthraquinone to monitor pH at the biofilm-anode interface in a wastewater microbial fuel cell”

Colloids and Surfaces B: Biointerfaces, **2022**, 210, 112274.

<https://doi.org/10.1016/j.colsurfb.2021.112274>

A. Iannaci, S. Ingle, C. Domínguez, M. Longhi, O. Merdrignac-Conanec, S. Ababou-Girard,

F. Barrière, P. E. Colavita

“Nanoscaffold effects on the performance of air-cathodes for microbial fuel cells: sustainable Fe/N-carbon electrocatalysts for the oxygen reduction reaction under neutral pH conditions”

Bioelectrochemistry, **2021**, 142, 107937.

<https://doi.org/10.1016/j.bioelechem.2021.107937>

A. Iannaci, A. Myles, T. Philippon, F. Barrière, E. M. Scanlan, P. E. Colavita

“Controlling the carbon-bio interface via glycan functional adlayers for applications in microbial fuel cell bioanodes”

Molecules, **2021**, 26, 4755.

<https://doi.org/10.3390/molecules26164755>

T. Philippon, J. Tian, C. Bureau, C. Chaumont, C. Midoux, J. Tournebize, T. Bouchez, **F. Barrière**

“Denitrifying bio-cathodes developed from constructed wetland sediments exhibit electroactive nitrate reducing biofilms dominated by members of the Genera *Azoarcus* and *Pontibacter*”

Bioelectrochemistry, **2021**, 140, 107819.

<https://doi.org/10.1016/j.bioelechem.2021.107819>

I. B. Trindade, G. Hernandez, E. Lebègue, **F. Barrière**, T. Cordeiro, M. Piccioli, R. O. Louro,

“Conjuring up a ghost: structural and functional characterization of FhuF, a ferric siderophore reductase from *E. coli*”

Journal of Biological Inorganic Chemistry, **2021**, 26, 26, 313-326.

<https://doi.org/10.1007/s00775-021-01854-y>