Curriculum Vitae Frederic Melin

Né le 14 Mai 1976

Adresse : Laboratoire de Bioélectrochimie et Spectroscopie, 1 Rue Blaise Pascal, 67000 Strasbourg

Situation actuelle : Maître de Conférences à l'Université de Strasbourg depuis 2008

Parcours Universitaire

1993	Baccalauréat série C (Mention TB)
1996	Admission à l'Ecole Normale Supérieure de Cachan
1998	Maîtrise en Chimie Physique, Université Paris XI, Orsay (Mention B)
2000	Agrégation de Chimie (17ème/62)
2001	DEA de Chimie des Métaux de Transition, Université Louis Pasteur, Strasbourg (reçu 1er, Mention TB)
2005	Doctorat en Chimie, Université Louis Pasteur, Strasbourg sous la supervision du Dr. J. Weiss et du Pr. Maurice Gross
2017	Habilitation à Diriger les Recherches, Université de Strasbourg. Garant : Pr. Petra Hellwig

Expériences professionnelles

2006-2007	Post-doc, groupe du Pr. Luis Echegoyen, Clemson University, USA
2008	Post-doc, groupe du Dr. Fabrice Odobel, Université de Nantes

Bourses et distinctions

Titulaire de la Prime d'Excellence Scientifique (2016-2019)

Bourse Lavoisier du Ministère des Affaires Etrangères (2006)

Liste des publications et communications

Bibliométrie

47 articles (15 depuis 2018), 1 brevet, 6 chapitres de livre (1 depuis 2018)

1353 citations, 28,8 citations en moyenne/article, *h*-index: 19 (Web of Science)

a) *Articles dans des journaux à comité de lecture*

1) "Induced Fit Process in the Selective Distal Binding of Imidazoles in Zinc Porphyrins Receptors", D. Paul, F. Melin, C. Hirtz, J. Wytko, P. Ochsenbein, M. Bonin, K. Schenk, P. Maltese, J. Weiss*, *Inorg. Chem.* **2003**, *42*, 3779-3787.

2) "Synthesis of a highly soluble superstructured phenanthroline strapped porphyrin", M. Koepf, F. Melin, J. Jaillard, J. Weiss*, *Tetrahedron Lett.* **2005**, *46*, 139-142.

3) "Built-in Axial Base Binding on Phenanthroline Strapped Zinc(II) and Iron(III) Porphyrins", F. Melin, S. Choua, M. Bernard, P. Turek, J. Weiss*, *Inorg. Chem.* **2006**, *45*, 10750-10757.

4) "Reactivity differences between Carbon Nano Onions (CNOs) prepared by different Methods", A. Palkar, F. Melin, C. M. Cardona, B. Elliott, A. K. Naskar, D. D. Edie, L. Echegoyen*, *Chem. Asian J.* **2007**, *2*, 625–633.

5) "Electrocatalytic reduction of oxygen with phenanthroline-strapped porphyrins", F. Melin, C. Boudon, M. Lo, K. J. Schenk, M. Bonin, P. Ochsenbein, M. Gross, J. Weiss*, *J. Porph. Phthalocyanines* **2007,** *11*, 212-221**.**

6) "Recognition of imidazoles by strapped zinc(II) porphyrin receptors: insight into the induced-fit mechanism", J. Brandel, A. Trabolsi, F. Melin, M. Elhabiri, J. Weiss*, A.-M. Albrecht-Gary*, *Inorg. Chem.* **2007**, *46*, 9534-9536.

7) "$Gd_3N@C_{2n}$ (n = 40, 42, and 44): remarkably low HOMO-LUMO gap and unusual electrochemical reversibility of $Gd_3N@C_{88}$", M. N. Chaur, F. Melin, B. Elliott, A. J. Athans, K. Walker, B. C. Holloway, L. Echegoyen*, *J. Am. Chem. Soc.* **2007**, *129*, 14826-14829.

8) "The large $Nd_3N@C_{2n}$ ($40 \leq n \leq 49$) cluster fullerene family: preferential templating of a C88 cage by a trimetallic cluster", F. Melin, M. N. Chaur, S. Engmann, B. Elliott, A. Kumbhar, A. J. Athans, L. Echegoyen*, *Angew. Chem. Int. Ed.* **2007**, *46*, 9032-9035.

9) "Synthesis and characterization of expanded radialenes, bisradialenes, and radiaannulenes", M. Gholami, F. Melin, R. McDonald, M. J. Ferguson, L. Echegoyen*, R. R. Tykwinski*, *Angew. Chem. Int. Ed.* **2007**, *46*, 9081-9085.

10) “Expanded radialenes: modular synthesis and properties of cross-conjugated enyne macrocycles”, R. R. Tykwinski*, M. Gholami, S. Eisler, Y. Zhao, F. Melin, L. Echegoyen, *Pure Appl. Chem.* **2008**, *80*, 621-637.

11) “New egg-shaped fullerenes: non-isolated pentagon structures of $Tm_3N@C_s$(51 365)-C_{84} and $Gd_3N@C_s$(51 365)-C_{84}” T. Zuo, K. Walker, M. M. Olmstead*, F. Melin, B. C. Holloway, L. Echegoyen*, H. C. Dorn*, M. N. Chaur, C. J. Chancellor, C. M. Beavers, A. L. Balch*, A. J. Athans, *Chem. Commun.* **2008**, 1067-1069.

12) “New $M_3N@C_{2n}$ clusterfullerene families (M=Nd, Pr, Ce and n=40-53): expanding the preferential templating of the C_{88} cage and approaching the C_{96} cage”, M. N. Chaur, F. Melin, B. Elliott, A. Kumbhar, A. J. Athans, L. Echegoyen*, *Chem. Eur. J.* **2008**, *14*, 4594-4599.

13) “The influence of cage size on the reactivity of trimetallic nitride metallofullerenes: a mono- and bis-methanoadduct of $Gd_3N@C_{80}$ and a monoadduct of $Gd_3N@C_{84}$”, M. N. Chaur, F. Melin, A. J. Athans, B. Elliott, K. Walker, B. C. Holloway, L. Echegoyen*, *Chem. Commun.* **2008**, 2665-2667.

14) “Lanthanum Nitride Endohedral Fullerenes $La_3N@C_{2n}$ ($43 \leq n \leq 55$): Preferential Formation of $La_3N@C_{96}$”, M. N. Chaur, F. Melin, J. Ashby, B. Elliott, A. Kumbhar, A. M. Rao, L. Echegoyen*, *Chem. Eur. J.* **2008**, *14*, 8213-8219.

15) “A Carbon Nano-Onion–Ferrocene Donor–Acceptor System: Synthesis, Characterization and Properties”, C. T. Cioffi, A. Palkar, F. Melin, A. Kumbhar, L. Echegoyen, M. Melle-Franco, F. Zerbetto, G. M. A. Rahman, C. Ehli, V. Sgobba, D. M. Guldi, M. Prato, *Chem. Eur. J.* **2008**, *15*, 4419-4427.

16) “Molecular Tools for the Self-Assembly of Bisporphyrin Photodyads: A Comprehensive Physicochemical and Photophysical Study”, J. Brandel, A. Trabolsi, H. Traboulsi, F. Melin, M. Koepf, J. A. Wytko, M. Elhabiri, J. Weiss, A.-M. Albrecht-Gary, *Inorg. Chem.* **2009**, *48*, 3743–3754.

17) “Chemical, Electrochemical, and Structural Properties of Endohedral Metallofullerenes**”,** M. N. Chaur, F. Melin, F., A. L. Ortiz, L. Echegoyen*, *Angew. Chem. Int. Ed.* **2009**, *41*, 7514-7538.

18) “E6 Proteins from Diverse Papillomaviruses Self-Associate Both *In Vitro* and *In Vivo*”, K. Zanier, C. Ruhlmann, F. Melin, M. Masson, A. Ould M'hamed Ould Sidi, X. Bernard, B. Fischer, L. Brino, T. Ristriani, V. Rybin, M. Baltzinger, S. Vande Pol, P. Hellwig, P. Schultz, G. Travé, *J. Mol. Biol.* **2010,** *396*, 90-104.

19) “Electrochemistry of cytochrome c_1, cytochrome c_{552}, and Cu_A from the respiratory chain of *Thermus thermophilus* immobilized on gold nanoparticles” T. Meyer, J. Gross, C. Blanck, M. Schmutz, B. Ludwig, P. Hellwig*, F. Melin*, *J. Phys. Chem. B* **2011**, *115*, 7165.

20) “Adamantyl-endcapped polyynes” W. A. Chalifoux, M. J. Ferguson, R. McDonald, F. Melin, L. Echegoyen, R. R. Tykwinski*, *J. Phys. Org. Chem.* **2012**, *25*, 69-76.

21) “Comparative studies in series of cytochrome *c* oxidase models”, F. Melin*, A. Trivella, M. Lo, C. Ruzié, I. Hijazi, N. Oueslati, J.A. Wytko, B. Boitrel, C. Boudon, P. Hellwig, J. Weiss*, *J. Inorg. Biochem.* **2012**, *108*, 196-202.

22) “Direct electrochemistry of cytochrome *bo*$_3$ oxidase at a series of gold nanoparticles-modified electrodes” F. Melin, T. Meyer, S. Lankiang, S. K. Choi, R. B. Gennis, C. Blanck, M. Schmutz, P. Hellwig*, *Electrochem. Commun.* **2013**, *26*, 105-108.

23) “Recent advances in the electrochemistry and spectroelectrochemistry of membrane proteins” F. Melin, P. Hellwig*, *Biol. Chem.* **2013**, *394*, 593-609.

24) “A single-stage functionalization and exfoliation method for the production of graphene in water: stepwise construction of 2D-nanostructured composites with iron oxide nanoparticles”, D. Ihiawakrim, O. Ersen, F. Melin, P. Hellwig, I. Janowska, D. Begin, W. Baaziz, S. Begin-Colin, C. Pham-Huu, R. Baati*, *Nanoscale* **2013**, *5*, 9073-9080.

25) “Evidence for Distinct Electron Transfer Processes in Terminal Oxidases from Different Origin by Means of Protein Film Voltammetry”, T. Meyer, F. Melin, H. Xie, I. v. d. Hocht, S. K. Choi, M. R. Noor, H. Michel, R. B. Gennis, T. Soulimane, P. Hellwig*, *J. Am. Chem. Soc.* **2014**, *136,* 10854–10857.

26) “Investigating the thermostability of succinate: quinone oxidoreductase enzymes by direct electrochemistry at high specific surface area SWNTs-modified electrodes and FTIR spectroscopy”, F. Melin, M. R. Noor, E. Pardieu, F. Boulmedais, F. Banhart, G. Cecchini, T. Soulimane, P. Hellwig*, *Chemphyschem* **2014**, *15*, 3572-3579.

27) “Electrochemistry suggests proton access from the exit site to the binuclear center in *Paracoccus denitrificans* cytochrome c oxidase pathway variants”, T. Meyer, F. Melin, O-M.H. Richter, B. Ludwig, A. Kannt, H. Müller, H. Michel, P. Hellwig*, *FEBS Lett.* **2015**, *589*, 565-568.

28) “Spectroscopic characterization of radicals and radical pairs in fruit fly cryptochrome – protonated and non-protonated flavin radical states”, B. Paulus, C. Bajzath, F. Melin, L. Heidinger, V. Kromm, C. Herkersdorf, U. Benz, L. Mann, P. Stehle, P. Hellwig, S. Weber, E. Schleicher*, *FEBS J.* **2015**, *282*, 3175-3189.

29) “Creation of a gold nanoparticle-based assay for the detection of inhibitors of bacterial cytochrome *bd* oxidases”, E. Fournier, A. Nikolaev, H. Nasiri, J. Hoeser, T. Friedrich, P. Hellwig*, F. Melin*, *Bioelectrochemistry* **2016***, 111,* 109-114.

30) “The unusual redox properties of C-type oxidases”, F. Melin, H. Xie, T. Meyer, Y. O. Anh, R. B. Gennis, H. Michel, P. Hellwig*, *Biochim. Biophys. Acta* **2016**, *1857*, 1892-1899.

31) “A Question of Flexibility in Cytochrome c Oxidase Models”, P. Vorburger, M. Lo, S. Choua, M. Bernard, F. Melin, N. Oueslati, C. Boudon, M. Elhabiri, J. A. Wytko, P. Hellwig, J. Weiss, *Inorg. Chim. Acta* **2017**, *468*, 232-238.

32) “Electrochemical study of an electron shuttle diheme protein: the cytochrome c_{550} from *T. thermophilus*”, F. Melin*, B. Schoepp-Cothenet, M. H. Noor*, S. Abdulkarim, T. Soulimane, P. Hellwig, *Inorg. Chim. Acta* **2017**, *468*, 252-259.

33) “Non-hydrothermal synthesis and structure determination of two new beta-octamolybdate (VI) stabilized with dialkylammonium counterions”, B. Sarr*, C. A. K. Diop, F. Melin*, M. Sidibe, P. Hellwig, F. Michaud, F. Maury, F. Senocq, A. Mbaye, Y. Rousselin, *J. Mol. Struct.* **2018**, *1170*, 44-50.

34) “Role of the tightly bound quinone for the oxygen reaction of cytochrome *bo_3* oxidase from *E. coli*”, F. Melin*, S. Sabuncu, S. K. Choi, A. Leprince, R. B. Gennis, P. Hellwig*, *FEBS Lett.* **2018**, *592*, 3380-3387.

35) “Crystal structure of bis(diisopropylammonium) molybdate”, B. Sarr*, A. Mbaye, C. A. K. Diop, F. Melin, P. Hellwig, M. Sidibé, Y. Rousselin, *Acta Cryst.* **2018**, *E74*, 1682-1685.

36) “From a bulk solid to thin films of a hybrid material derived from the $Ti_{10}O_{12}(cat)_8(py)_8$ oxo-cluster and poly(4-vinylpyridine)”, B. Patrahau, C. Chaumont, L. Barloy, P. Hellwig, M. Henry, F. Melin, P. Mobian*, M. Pauly, *New J. Chem.* **2019**, *43*, 1581-1588.

37) “Chemical and electrochemical alkali cations intercalation/release in an ionic hydrogen bonded network", G. Gerer, F. Melin, P. Hellwig*, W. Hosseini*, S. Ferlay*, *Inorg. Chem.* **2019**, *58*, 1541-1547.

38) “One pot-synthesis of the fourth category of dinuclear molybdenum(VI) oxalate series: structure and study of thermal and redox properties”, B. Sarr*, A. Mbaye, A. K. Diop, M. Sidibe, F. Melin*, P. Hellwig, F. Maury, F. Senocq, P. Guionneau, M. Giorgi, *Inorg. Chim. Acta* **2019**, *491*, 84-92.

39) “Active site rearrangement and structural divergence in prokaryotic respiratory oxidases”, S. Safarian, A. Hahn, D. J. Mills, M. Radloff, M. L. Eisinger, A. Nikolaev, J. Meier-Credo, F. Melin, H. Miyoshi, R. B. Gennis, J. Sakamoto, J. D. Langer, P. Hellwig, W. Kühlbrandt*, H. Michel*, *Science* **2019**, *366*, 100-104.

40) “Stabilization of the Highly Hydrophobic Membrane Protein, Cytochrome *bd* Oxidase, on Metallic Surfaces for Direct Electrochemical Studies”, A. Nikolaev, I. Makarchuk, A. Thesseling, J. Hoeser, T. Friedrich, F. Melin*, P. Hellwig*, *Molecules* **2020**, *25*, 3240.

41) “Redox Properties of the Membrane Proteins from the Respiratory Chain”, F. Melin*, P. Hellwig*, *Chem. Rev.* **2020**, *120*, 10244-10297.

42) “Two new inorganic-organic hybrid materials based on β- and γ-octamolybdate clusters: Synthesis, structure determination and solid-state photochromic properties”, B. Sarr*, A. Mbaye, C. A. K. Diop, M. Sidibé, F. Melin, P. Hellwig, F. Maury, C. Charvillat, M. Giorgi, F. Michaud, R. Desapt, *Polyhedron* **2021**, 194, 114919.

43) “Enhancement of photocurrent by incorporation of Preyssler type polyoxometalate protected nanoparticles in polyporphyrin films”, Z. Huo, Y. Liang, Y. Lv, F. Melin, P. Hellwig,

H. Ibrahim, M. Goldmann, C. Boudon, V. Badets, A. Bonnefont, L. Ruhlmann*, *Chem. Commun.* **2021**, *57*, 1482-1485.

44) "Identification and optimization of quinolone-based inhibitors against cytochrome *bd* oxidase using an electrochemical assay", I. Makarchuk, A. Nikolaev, A. Thesseling, L. Dejon, D. Lamberty, L. Stief, A. Speicher, T. Friedrich, P. Hellwig, H. R. Nasiri*, F. Melin*, *Electrochim. Acta* **2021**, *381*, 138293.

45) "Electrocatalytic evidence of the diversity of the oxygen reaction in the bacterial *bd* oxidase from different organisms", A. Nikolaev, S. Safarian, A. Thesseling, D. Wohlwend, T. Friedrich, H. Michel, T. Kusumoto, J. Sakamoto, F. Melin*, P. Hellwig*, *Biochim. Biophys. Acta* **2021**, *1862*, 148436.

46) "Probing the reaction of membrane proteins via infrared spectroscopies, plasmonics and electrochemistry", I. Makarchuk, A. F. Santos-Seica, F. Melin, P. Hellwig*, *Curr. Opin. Electrochem.* **2021**, *30*, 100770.

47) "Structure of Escherichia coli cytochrome bd-II type oxidase with 1 bound aurachin D", A. Grauel, J. Kägi, T. Rasmussen, I. Makarchuk, S. Oppermann, A. F. A. Moumbock, D. Wohlwend, R. Müller, F. Melin, S. Günther, P. Hellwig, B. Böttcher*, T. Friedrich*, *Nat. Commun.* **2021**, *12*, 6498.

b) *Brevet*

"Preparation and functionalization of carbon nano onions", L. Echegoyen, A. J. Palkar, A. S. Rettenbacher, F. Melin, B. Elliott, PCT Int. Appl. **2007**, WO 2007022200.

c) *Chapitres de livre*

1) "Electrochemistry of carbon nanoparticles", L. Echegoyen, A. Palkar, F. Melin in Electrochemistry of Functional Supramolecular Systems (Eds: P. Ceroni, A. Credi, M. Venturi), John Wiley § Sons, Hoboken, New Jersey, **2010**, pp 201-228.

2) "Recent applications of infrared spectroscopy and microscopy in chemistry, biology and medicine", P. Hellwig, F. Melin in Handbook of Porphyrin Science (Eds: K. M. Kadish, K. M. Smith, R. Guilard), World Scientific, Singapore, **2010**, Vol. 7, pp 437-492.

3) "Electrochemical properties of endohedral metallofullerenes", L. Echegoyen, F. Melin, M. N. Chaur in *Endohedral Fullerenes from Fundamentals to Applications* (Eds: S. Yang, C.-R. Wang), World Scientific, **2014**, pp 253-279.

4) "Electrochemistry of Fullerenes, Derivatives, and Related Compounds", F. Melin, L. E. Echegoyen, L. Echegoyen in *Organic Electrochemistry, Fifth Edition* (Eds: O. Hammerich, B. Speiser), CRC Press, **2015**, pp 829-860.

5) “Combining Electrochemistry and Infrared Spectroscopy for the Study of Proteins”, F. Melin, P. Hellwig in *Reference Module in Chemistry, Molecular Sciences and Chemical Engineering*, Elsevier, **2015**.

6) “Redox Activity of Cytochromes from the Respiratory Chain”, F. Melin, A. Nikolaev, P. Hellwig in *Encyclopedia of Interfacial Chemistry*: *Surface Science and Electrochemistry* (Ed : K. Wandelt) (Ed.), Elsevier, **2018**, vol. 7, pp 451–469.

d) *Communications Orales*

1) “Complexes de Porphyrines à anse phénanthroline: nouveaux modèles de cytochrome c oxydase ?”, F. Melin, J. Weiss, Séminaire Jeunes Chercheurs, Université Louis Pasteur, Janvier 2004.

2) “Size-dependent reactivity of carbon nano-onions”, F. Melin, A. Palkar, M. Rivera de Leon, A. Kumbhar, L. Echegoyen, SERMACS 2006 (Southeast Regional Meeting of the American Chemical Society), Augusta (Georgia, USA), Novembre 2006.

3) “Strategies for the preparation of small carbon nano onions (CNOs)”, F. Melin, A. Palkar, A. K. Naskar, A. Kumbhar, D. D. Edie, L. Echegoyen, 233th ACS National Meeting, Chicago, Mars 2007.

4) “Neodymium nitride endohedral fullerenes : original cage distribution and unique electronic properties”, F. Melin, M. N. Chaur, S. Engmann, B. Elliott, A. Kumbhar, A. J. Athans, L. Echegoyen, SERMACS 2007 (Southeast Regional Meeting of the American Chemical Society), Greenville (South Carolina, USA), Octobre 2007.

5) “Immobilization of proteins from the respiratory chain of Thermus thermophilus on gold nanoparticles: electrochemical and surface-enhanced IR spectroscopy studies”, T. Meyer, J. Gross, C. Blanck, M. Schmutz, B. Ludwig, H. Chang, R. B. Gennis, P. Hellwig, F. Melin, 43rd IUPAC World Chemistry Congress, San Juan (Puerto-Rico), Août 2011.

6) “Electrochemical analysis of cytochrome ba_3 from T. thermophilus immobilized on gold nanoparticles”, F. Melin, T. Meyer, J. Gross, S. K. Choi, R. B. Gennis, J. A. Fee, P. Hellwig, 17th European Bioenergetics Conference, Freiburg (Allemagne), Septembre 2012.

7) “Electrochemistry of membrane proteins at gold nanoparticles-modified electrodes, F. Melin, T. Meyer, S. K. Choi, R. B. Gennis, P. Hellwig, ElecNano 5, Bordeaux, Mai 2013.

8) “Etudes comparées d’oxydases hème-cuivre terminales immobilisées sur nannoparticules d’or”, T. Meyer, F. Melin, S. K. Choi, R. B. Gennis, M. R. Noor, T. Soulimane, H. Xie, H. Michel, P. Hellwig, 17ème congrès du Groupe Français de Bioénergétique, Carry-le-Rouet, Septembre 2013.

9) “Direct electrochemical studies of various heme copper terminal oxidases at gold nanoparticles-modified electrodes”, F. Melin, T. Meyer, S. Sabuncu, H. Xie, S. Buschmann, S.

K. Choi, Y. O. Anh, M. R. Noor, H. Michel, R. B. Gennis, T. Soulimane, P. Hellwig, Journées d'Electrochimie 2015, Rome, Juillet 2015.

10) "Unexpected redox properties of cytochrome *cbb3* oxidases", F. Melin, H. Xie, Y. O. Anh, H. Michel, R. B. Gennis, P. Hellwig, Journées d'Electrochimie 2017, Bordeaux, Juin 2017.

11) "Direct electrochemical Characterization of Respiratory Terminal Oxidases", Séminaire invité Laboratoire d'Innovation Moléculaire et Applications (LIMA) - UMR 7042, Strasbourg, Octobre 2018.

12) "Protein film voltammetry of bacterial terminal oxidases from the respiratory chain", Meeting of the Binational PhD college "Enzyme reactivities and their applications" CDFA 0407, Strasbourg, Novembre 2018.

13) "Catalytic activity and inhibition of cytochrome bd oxidases immobilized on nanostructured gold electrodes, F. Melin, A. Nikolaev, H. Nasiri, A. Speicher, A. Thesseling, T. Friedrich, P. Hellwig, Journées d'Electrochimie 2019, Toulouse, Juillet 2019.

e) *Communications par affiches*

1) "Complexation inhabituelle d'imidazoles dans une porphyrine à anse phénanthroline", F. Melin, J. Weiss, J. A. Wytko, D. Paul, P. Ochsenbein, M. Bonin, K. Schenk, GECOM-CONCOORD 2001 (Symposium pour jeunes chercheurs en chimie), Mai 2001.

2) "Vers l'élaboration d'un nouveau modèle de cytochrome c oxydase", F. Melin, J. Weiss, SAJEC 2002 (Symposium pour jeunes chercheurs en Chimie, sponsorisé par Sigma-Aldrich), Obernai, Octobre 2002.

3) "Phenanthroline-strapped porphyrins as new cytochrome c oxidase models", J. Weiss, F. Melin, ICPP-4 (International Conference on Porphyrines et Phthalocyanines), Rome, Juillet 2006.

4) "Preparation, functionalization, characterization of carbon nano-onions", M. Rivera de Leon, F. Melin, A. Palkar, L. Echegoyen, 233th ACS National Meeting, Chicago, Mars 2007.

5) "New models for cytochrome *c* oxydase: Towards generic heme protein models", C. Boudon, J. A. Wytko, M. Lo, F. Melin, J. Weiss, 239th ACS National Meeting, San Francisco, Mars 2010.

6) "Surface-enhanced infrared absorption spectroscopy (SEIRAS) of complex I and QFR from *Escherichia coli*", F. Melin, S. Kriegel, L. Fremond, T. Friedrich, E. Maklashina, G. Cecchini, P. Hellwig, 16th European Bioenergetics Conference, Warsaw (Pologne), Juillet 2010.

7) "Characterization and flash photolysis of carbon monoxide adducts of heme-copper binuclear model compounds", N. Oueslati, A. Trivella, F. Melin, J. Weiss, B. Boitrel, P. Hellwig, 16th European Bioenergetics Conference, Warsaw (Pologne), Juillet 2010.

8) "Electrochemistry of Soluble Proteins from the Respiratory Chain Immobilized on Gold Nanoparticles", T. Meyer, J. Gross, C. Blanck, M. Schmutz, B. Ludwig, H.-Y. Chang, R. B.

Gennis, P. Hellwig, F. Melin, 9th Spring Meeting of the International Society of Electrochemistry, Turku (Finlande), Mai 2011.

9) "Characterization of the complex *c1-c552* from *Thermus thermophilus*: the protein-protein interaction", J. Gross, Y. Neehaul, A. Petrowick, T. Meyer, B. Ludwig, F. Melin, P. Hellwig, 9th Spring Meeting of the International Society of Electrochemistry, Turku (Finlande), Mai 2011.

10) "Electrochemistry of Soluble Proteins from the Respiratory Chain Immobilized on Gold Nanoparticles", T. Meyer, J. Gross, C. Blanck, M. Schmutz, B. Ludwig, H.-Y. Chang, R. B. Gennis, P. Hellwig, F. Melin, Ecole thématique Capteurs Chimiques, Biocapteurs et Biopuces, La Rochelle, Octobre 2011.

11) "Study on the catalytic current in the cytochrome c oxidase from P. denitrificans", T. Meyer, I. von der Hocht, H. Michel, B. Ludwig, F. Melin, P. Hellwig, 17th European Bioenergetics Conference, Freiburg (Allemagne), Septembre 2012.

12) "Complex I studied by Surface Enhanced IR Absorption Spectroscopy (SEIRAS) and electrochemistry", S. Kriegel, F. Melin, T. Friedrich, M. Osawa, P. Hellwig, 17th European Bioenergetics Conference, Freiburg (Allemagne), Septembre 2012.

13) "Comparative temperature-dependent activity and structural stability of the succinate:quinone oxidoreductases from Escherichia coli and Thermus thermophilus", F. Melin, M. R. Noor, F. Banhart, G. Cecchini, T. Soulimane, P. Hellwig, 18th European Bioenergetics Conference, Lisbon (Portugal), Juillet 2014.

14) "Comparative pH and temperature dependent studies on different types of terminal oxidases by protein film voltammetry, T. Meyer, F. Melin, H. Xie, I. von der Hocht, S. K. Choi, M. R. Noor, T. Soulimane, R. B. Gennis, H. Michel, P. Hellwig, 18th European Bioenergetics Conference, Lisbon (Portugal), Juillet 2014.

15) "Comparative spectroscopic and electrochemical studies of cytochrome cbb_3 oxidases from various organisms", F. Melin, T. Meyer, H. Xie, S. Buschmann, Y.O. Anh, H. Michel, R. B. Gennis, P. Hellwig, 18ème congrès du Groupe Français de Bioénergétique, Mittelwihr, Septembre 2015.

16) "Development of a bioelectrochemical sensor based on cytochrome *bd* oxidase for identification of new antibiotics", A. Nikolaev, A. Thesseling, L. Stief, S. Safarian, A. Speicher, H. Nasiri, H. Michel, T. Friedrich, F. Melin, P. Hellwig, 169th annual meeting of the International Society of Electrochemistry, Bologna (Italie), Septembre 2018.

17) "Development and evaluation of an electrochemical assay for identification of cytochrome *bd* oxidases inhibitors", I. Makarchuk, A. Nikolaev, A. Thesseling, L. Dejon, D. Lamberty, L. Stief, A. Speicher, T. Friedrich, P. Hellwig, H. R. Nasiri, F. Melin, 21ème congrès du Groupe Français de Bioénergétique, Septembre 2021.