

# Curriculum Vitae Frederic Melin

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**Born** May 14 1976

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**Current position:** Assistant professor (Maître de Conférences) at University of Strasbourg since 2008.

## Education

1993 High school diploma (Baccalaureat) in Science.

1996 Recruitment at the ENS Cachan Paris Saclay.

1997 Bachelor's degree (Licence) in physical chemistry, University Paris XI, Orsay.

2000 Competitive examination for teaching in high school (Agregation) in chemistry.

2001 Master's degree (DEA) in transition metal chemistry, University Louis Pasteur, Strasbourg.

2005 PhD in Chemistry, University Louis Pasteur, Strasbourg under the supervision of Dr. Jean Weiss and Prof. Maurice Gross.

2017 Habilitation (HDR), University of Strasbourg

## Professional experience

2006-2007 Post-doctoral fellow, Prof. Luis Echegoyen's group, Clemson University, USA.

2008 Post-doctoral fellow, Dr. Fabrice Odobel's group, University of Nantes, France.

## Fellowships and awards

2016-2019 PhD and research supervising bonus (PEDR)

2006 Lavoisier fellowship of the French Ministry of Foreign Affairs

# Publications and communications

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## **Bibliometry**

47 articles (15 since 2018), 1 patent, 6 book chapters (1 since 2018)

1353 citations, 28.8 average citations/article, *h*-index: 19 (Web of Science)

## **a) Peer-reviewed articles**

- 1) "Induced Fit Process in the Selective Distal Binding of Imidazoles in Zinc Porphyrins Receptors", D. Paul, F. Melin, C. Hirtz, J. Wytko, P. Ochsenein, 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. Ochsenein, 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<sub>3</sub>N@C<sub>2n</sub> (*n* = 40, 42, and 44): remarkably low HOMO-LUMO gap and unusual electrochemical reversibility of Gd<sub>3</sub>N@C<sub>88</sub>", 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<sub>3</sub>N@C<sub>2n</sub> (40 ≤ *n* ≤ 49) cluster fullerene family: preferential templating of a C<sub>88</sub> 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  $Tm_3N@C_3(51\ 365)-C_{84}$  and  $Gd_3N@C_3(51\ 365)-C_{84}$ ” 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 *c1*, cytochrome *c552*, and *CuA* 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-encapped 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<sub>3</sub>* 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. Ihiwakrim, 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*<sub>550</sub> 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*<sub>3</sub> 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<sub>10</sub>O<sub>12</sub>(cat)<sub>8</sub>(py)<sub>8</sub> oxo-cluster and poly(4-vinylpyridine)", B. Patrahou, 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. Hoesser, 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  $\beta$ - and  $\gamma$ -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) Patent**

"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) Book chapters**

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) Oral Communications**

1) “Complexes de Porphyrines à anse phénanthroline: nouveaux modèles de cytochrome c oxydase ?”, F. Melin, J. Weiss, Séminaire Jeunes Chercheurs, Université Louis Pasteur, January 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), November 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, 233<sup>th</sup> ACS National Meeting, Chicago, March 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), October 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, 43<sup>rd</sup> IUPAC World Chemistry Congress, San Juan (Puerto-Rico), August 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, 17<sup>th</sup> European Bioenergetics Conference, Freiburg (Germany), September 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, May 2013.

8) “Etudes comparées d’oxydases hème-cuivre terminales immobilisées sur nanoparticules d’or”, T. Meyer, F. Melin, S. K. Choi, R. B. Gennis, M. R. Noor, T. Soulimane, H. Xie, H. Michel, P. Hellwig, 17<sup>ème</sup> congrès du Groupe Français de Bioénergétique, Carry-le-Rouet, September 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, July 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, June 2017.

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

12) "Protein film voltammetry of bacterial terminal oxidases from the respiratory chain", Meeting of the Binational PhD college "Enzyme reactivities and their applications" CDF A 0407, Strasbourg, November 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, July 2019.

#### e) Posters

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), May 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, October 2002.

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

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

5) "New models for cytochrome *c* oxydase: Towards generic heme protein models", C. Boudon, J. A. Wytko, M. Lo, F. Melin, J. Weiss, 239<sup>th</sup> ACS National Meeting, San Francisco, March 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, 16<sup>th</sup> European Bioenergetics Conference, Warsaw (Poland), July 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, 16<sup>th</sup> European Bioenergetics Conference, Warsaw (Poland), July 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, 9<sup>th</sup> Spring Meeting of the International Society of Electrochemistry, Turku (Finland), May 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, 9<sup>th</sup> Spring Meeting of the International Society of Electrochemistry, Turku (Finland), May 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, October 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, 17<sup>th</sup> European Bioenergetics Conference, Freiburg (Germany), September 2012.

12) “Complex I studied by Surface Enhanced IR Absorption Spectroscopy (SEIRAS) and electrochemistry”, S. Kriegel, F. Melin, T. Friedrich, M. Osawa, P. Hellwig, 17<sup>th</sup> European Bioenergetics Conference, Freiburg (Germany), September 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, 18<sup>th</sup> European Bioenergetics Conference, Lisbon (Portugal), July 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, 18<sup>th</sup> European Bioenergetics Conference, Lisbon (Portugal), July 2014.

15) “Comparative spectroscopic and electrochemical studies of cytochrome *cbb<sub>3</sub>* oxidases from various organisms”, F. Melin, T. Meyer, H. Xie, S. Buschmann, Y.O. Anh, H. Michel, R. B. Gennis, P. Hellwig, 18<sup>ème</sup> congrès du Groupe Français de Bioénergétique, Mittelwihr, September 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, 169<sup>th</sup> annual meeting of the International Society of Electrochemistry, Bologna (Italie), September 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, 21<sup>ème</sup> congrès du Groupe Français de Bioénergétique, September 2021.