

LIST OF PUBLICATIONS

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I. PATENTS

B1. A. Montaut, S. Moutin, M.J. Chatenet, J.F.C. Durst, **F.T. Maillard**, L. Dubau, "Hollow platinum nanoparticles for fuel cells", CNRS/Grenoble-INP/Air Liquide, US Patent. US20140227632 (European patent n° EP2680353A1).

B2. M. Zimmermann, M. Chatenet, **F. Maillard**, D. Ayme-Perrot, P. Sonntag, "Use of high specific surface area carbon materials as simultaneous counter electrode and reference electrode for electrochemical measurements (Carbone poreux monolithique à haute surface spécifique utilisable comme électrode de référence et contre-électrode au sein de cellules électrochimiques 3 électrodes", World Patent WO2016116382 (A1) — 2016-07-28

II. BOOK CHAPTERS

Ch1. **F. Maillard**, P. Simonov, E. R. Savinova, "Carbon materials as support for fuel cells electrocatalysts", In "Carbon Materials for Catalysis", Serp, P., Figueiredo, J. L., Eds.; John Wiley & Sons, Inc.: New York, (2009), 429-480. [DOI: 10.1002/9780470403709.ch12](https://doi.org/10.1002/9780470403709.ch12).

Ch2. **F. Maillard**, S. Pronkin, E. R. Savinova, "Size effects in electrocatalysis of fuel cells reactions on supported metal nanoparticles", In Fuel Cell Catalysis: a Surface Science Approach, Koper, M. T. M., Ed.; John Wiley & Sons, Inc.: New York, (2009) 507-566. [DOI: 10.1002/9780470463772.ch15](https://doi.org/10.1002/9780470463772.ch15).

Ch3. M. Chatenet, L. Guétaz, **F. Maillard**, "Electron microscopy to study MEA materials and structure degradation", In Handbook of Fuel Cells Vol. 5 "Advances in Electrocatalysis, Materials, Diagnostics and Durability", Vielstich W., Gasteiger H.A. Yokokawa H., John Wiley & Sons, Inc.: New York, (2009) 844-860. [DOI: 10.1002/9780470974001.f500056](https://doi.org/10.1002/9780470974001.f500056).

Ch4. **F. Maillard**, S. Pronkin, E. R. Savinova, "Influence of size on the electrocatalytic activities of supported metal nanoparticles in fuel cells related reactions", In Handbook of Fuel Cells Vol. 5 "Advances in Electrocatalysis, Materials, Diagnostics and Durability", Vielstich W., Gasteiger H.A., Yokokawa H. Eds, John Wiley & Sons, Inc.: New York, (2009) 91-111. [DOI: 10.1002/9780470974001.f500002a](https://doi.org/10.1002/9780470974001.f500002a).

Ch 5. **F. Maillard**, N. Job, M. Chatenet, "Basics of PEMFC including the use of carbon-supported nanoparticles", in New and Future Developments in Catalysis: Catalysis by Nanoparticles, S.L. Suib Ed., Elsevier, **chapter 17** (2013) 401-423. [DOI: 10.1016/B978-0-444-53874-1.00018-4](https://doi.org/10.1016/B978-0-444-53874-1.00018-4)

Ch6. **F. Maillard**, N. Job, M. Chatenet, "Approaches to synthesize carbon-supported Pt-based electrocatalysts for PEM fuel cells", in New and Future Developments in Catalysis: Batteries, Hydrogen storage and Fuel Cells, S.L. Suib Ed., Elsevier, **chapter 14** (2013) 407-428. [DOI: 10.1016/B978-0-44-453880-2.00019-3](https://doi.org/10.1016/B978-0-44-453880-2.00019-3)

Ch7. E. R. Savinova, A. Bonnefont, **F. Maillard**, “Anodic reactions in electrocatalysis: oxidation of carbon monoxide”, in Encyclopedia of Applied Electrochemistry, G. Kreisa, K. Ota, F. Savinell Eds., Springer-Verlag GmbH, Heidelberg, (2014) 93-100. [DOI: 10.1007/978-1-4419-6996-5_393](https://doi.org/10.1007/978-1-4419-6996-5_393).

Ch8. T.W. Napporn, L. Dubau, C. Morais, M.R. Camilo, J. Durst, F.H.B. Lima, **F. Maillard**, B. Kokoh, “Tools and Electrochemical *in situ* and *on-line* Characterization Techniques for Nanomaterials”, In: Kumar C. (eds), “*In situ* Characterization Techniques for Nanomaterials”, Springer, Berlin, Heidelberg (2018) 383-439. [DOI: 10.1007/978-3-662-56322-9_11](https://doi.org/10.1007/978-3-662-56322-9_11).

III. PUBLICATIONS IN INTERNATIONAL PEER-REVIEWED JOURNALS

Papers where I am corresponding author

P1. O. Reynes, **F. Maillard**, J.-C Moutet, G. Royal, E. Saint-Aman, G. Stanciu, J.-P Dutasta, I. Gosse, J.C Mulatier, “Complexation and electrochemical sensing of anions by amide-substituted ferrocenyl ligands”, *J. Organomet. Chem.*, **637-639** (2001) 356-363. [DOI: 10.1016/S0022-328X\(01\)00935-4](https://doi.org/10.1016/S0022-328X(01)00935-4)

P2. **F. Maillard**, M. Martin, F. Gloaguen, J.M. Léger, “Oxygen electroreduction on carbon-supported platinum catalysts. Particle-size effect on the tolerance to methanol competition”, *Electrochim. Acta*, **47** (2002) 3431-3440. [DOI:10.1016/S0013-4686\(02\)00279-7](https://doi.org/10.1016/S0013-4686(02)00279-7)

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P5. **F. Maillard**, M. Eikerling, O. Cherstiouk, S. Schreier, E. Savinova, U. Stimming, “Size effects on reactivity of Pt nanoparticles in CO monolayer oxidation: The role of surface mobility”, *Faraday Discuss.* **125** (2004) 357-377. [DOI: 10.1039/b303911k](https://doi.org/10.1039/b303911k)

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- P8.** F. Maillard, G. -Q. Lu, A. Wieckowski, U. Stimming, "Ru-decorated Pt surfaces as model fuel cell electrocatalysts", *J. Phys. Chem. B*, **109** (2005) 16230-16243. DOI: [10.1021/jp052277x](https://doi.org/10.1021/jp052277x)
- P9.** B. Andreaus, F. Maillard, J. Kocylo, E. R. Savinova, M. Eikerling, "Kinetic modeling of CO monolayer oxidation on carbon-supported platinum nanoparticles", *J. Phys. Chem. B*, **110** (2006) 21028-21040. DOI: [10.1021/jp063856k](https://doi.org/10.1021/jp063856k)
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- P11.#** F. Maillard, E. Peyrelade, Y. Soldo-Olivier, M. Chatenet, E. Chaînet, R. Faure, "Is carbon-supported Pt-WO_x composite a CO-tolerant material?", *Electrochim. Acta*, **52** (2007) 1958-1967. DOI: [10.1016/j.electacta.2006.08.024](https://doi.org/10.1016/j.electacta.2006.08.024)
- P12.** E. Guilminot, A. Corcella, M. Chatenet, F. Maillard, "Comparing the thin-film rotating disk electrode and the cavity microelectrode techniques to study carbon-supported platinum for PEMFC applications", *J. Electroanal. Chem.*, **599** (2007) 111-120. DOI: [10.1016/j.jelechem.2006.09.022](https://doi.org/10.1016/j.jelechem.2006.09.022)
- P13.#** E. Guilminot, A. Corcella, F. Charlot, F. Maillard, M. Chatenet, "Detection of Pt²⁺ ions and Pt nanoparticles inside the membrane of a PEM fuel cell", *J. Electrochem. Soc.*, **154** (2007) B96-B105. DOI: [10.1149/1.2388863](https://doi.org/10.1149/1.2388863)
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- P16.#** F. Maillard, A. Bonnefont, M. Chatenet, L. Guétaz, B. Doisneau-Cottignies, H. Roussel, U. Stimming, "Effect of the structure of Pt-Ru/C particles on CO_{ad} monolayer vibrational properties and electrooxidation kinetics", *Electrochim. Acta*, **53** (2007) 811-822. DOI: [10.1016/j.electacta.2007.07.061](https://doi.org/10.1016/j.electacta.2007.07.061)
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- P18.** M. Chatenet, E. Guilminot, C. Iojoiu, J.-Y. Sanchez, E. Rossinot, F. **Maillard**, "Pt redistribution within PEMFC MEAs and its consequence on their performances", *ECS Trans.*, **11** (2007) 1203-1214. [DOI: 10.1149/1.2781034](https://doi.org/10.1149/1.2781034)
- P19.** F. Hahn, Y.-L. Mathis, A. Bonnefont, F. **Maillard** and C.A. Melendres, "In situ synchrotron far infrared micro-spectroelectrochemistry with a grazing angle objective", *Infrared Physics & Technology*, **51** (2008) 446-449. [DOI: 10.1016/j.infrared.2007.12.017](https://doi.org/10.1016/j.infrared.2007.12.017)
- P20.#** F. Micoud, F. **Maillard**, A. Gourgaud, M. Chatenet, "Unique CO-tolerance of Pt-WO_x materials", *Electrochem. Comm.* **11** (2009) 651-654. [DOI: 10.1016/j.elecom.2009.01.007](https://doi.org/10.1016/j.elecom.2009.01.007)
- P21.** C. Lebouin, Y. Soldo-Olivier, E. Sibert, M. De Santis, F. **Maillard**, R. Faure, "Evidence of substrate effect in hydrogen electroinsertion into palladium atomic layers by means of *in situ* surface X-Ray diffraction", *Langmuir*, **25** (2009) 4251-4255. [DOI: 10.1021/la803913e](https://doi.org/10.1021/la803913e)
- P22.** N. Job, F. **Maillard**, J. Marie, S. Berthon-Fabry, J.-P. Pirard, M. Chatenet, "Electrochemical characterization of Pt/carbon xerogel and Pt/carbon aerogel catalysts – first insights into the influence of the carbon texture on the Pt nanoparticles morphology and catalytic activity", *J. Mater. Sci.*, **44** (2009) 6591-6600. [DOI: 10.1007/s10853-009-3581-x](https://doi.org/10.1007/s10853-009-3581-x)
- P23.** N. Job, S. Lambert, M. Chatenet, C.J. Gommès, F. **Maillard**, S. Berthon-Fabry, J.R. Regalbuto, J.-P. Pirard, "Preparation of highly loaded Pt/carbon xerogel catalysts for Proton Exchange Membrane fuel cells by the Strong Electrostatic Adsorption method", *Catal. Today*, **150** (2010) 119-127. [DOI:10.1016/j.cattod.2009.06.022](https://doi.org/10.1016/j.cattod.2009.06.022)
- P24.** M. Chatenet, L. Dubau, N. Job, F. **Maillard**, "The (electro)catalyst | membrane interface in the Proton Exchange Membrane Fuel Cell: similarities and differences with non-electrochemical Catalytic Membrane Reactors", *Catal. Today*, **156** (2010) 76-86. [DOI: 10.1016/j.cattod.2010.02.028](https://doi.org/10.1016/j.cattod.2010.02.028)
- P25.#** E. Billy, F. **Maillard**, A. Morin, L. Guétaz, F. Emieux, C. Thurier, P. Doppelt, S. Donet, S. Mailley, "Impact of ultra-low Pt loadings on the performance of anode/cathode in a Proton Exchange Membrane Fuel Cell", *J. Power Sources*, **195** (2010) 2737–2746. [DOI:10.1016/j.jpowsour.2009.10.101](https://doi.org/10.1016/j.jpowsour.2009.10.101)
- P26.#** F. Micoud, F. **Maillard**, A. Bonnefont, N. Job, M. Chatenet, "The role of the support in CO_{ads} monolayer electrooxidation on Pt nanoparticles: Pt/WO_x vs. Pt/C", *Phys. Chem. Chem. Phys.*, **12** (2010) 1182-1193. [DOI: 10.1039/B915244J](https://doi.org/10.1039/B915244J)
- P27.#** F. **Maillard**, L. Dubau, J. Durst, M. Chatenet, J. André, E. Rossinot, "On the durability of Pt₃Co/C particles in a proton-exchange membrane fuel cell: direct evidence of bulk Co segregation from the bulk to the surface", *Electrochem. Commun.*, **12** (2010) 1161-1164. [DOI: 10.1016/j.elecom.2010.06.007](https://doi.org/10.1016/j.elecom.2010.06.007)

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