



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).

Ch9. T. Asset, **F. Maillard**, F. Jaouen, "Electrocatalysis with single metal atom sites in doped carbon matrices", In: Serp P, Pham Minh D., "Supported Metal Single Atom Catalysis", John Wiley & Sons, Inc.: New York, (2022). [DOI: 10.1002/9783527830169.ch13](https://doi.org/10.1002/9783527830169.ch13). [hal-03585648](https://hal.archives-ouvertes.fr/hal-03585648)

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)

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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)

P6. **F. Maillard**, E. R. Savinova, P. A. Simonov, V. I. Zaikovskii, U. Stimming, "Infrared spectroscopic study of CO adsorption and electrooxidation on carbon-supported Pt nanoparticles: Inter-particle versus intra-particle heterogeneity", *J. Phys. Chem. B.*, **108** (2004) 17893-17904. [DOI: 10.1021/jp0479163](https://doi.org/10.1021/jp0479163)

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- P10.** F. Maillard, E. R. Savinova, U. Stimming, "CO monolayer oxidation on Pt nanoparticles: further insights into the particle size effects", *Special issue of J. Electroanal. Chem., invited article*, **599** (2007) 221-232. [DOI:10.1016/j.jelechem.2006.02.024](https://doi.org/10.1016/j.jelechem.2006.02.024)
- 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)
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- 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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- 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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- P32.** L. Dubau, **F. Maillard**, J. Durst, M. Chatenet, J. André, E. Rossinot, "Influence of PEMFC operating conditions on the durability of Pt₃Co/C electrocatalysts", *ECS Trans.*, **33** (2010) 399-405. [DOI: 10.1149/1.3484538](https://doi.org/10.1149/1.3484538)
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- P38.** B. Vion-Dury, M. Chatenet, L. Guétaz, **F. Maillard**, "Determination of aging markers and their use as a tool to characterize Pt/C nanoparticles degradation mechanism in model PEMFC cathode environment", *ECS Trans*, **41** (2011) 697-708. [DOI: 10.1149/1.3635604](https://doi.org/10.1149/1.3635604)
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