

PUBLICATIONS DE L'EQUIPE (2019-2023)

2023

- M. Amou, B. Larhrib, N. Sabi, M. Srouf, A.H. Assen, M. Mansor, O. Dolotko, N. Ouedna, **H. Martinez**, I.el Saadoun. $Ni_{1.5}V_2(PO_4)_3/C$ and $Mn_{1.5}V_2(PO_4)_3/C$ as anode materials for lithium-ion batteries: Crystal structure and electrochemical lithiation/delithiation reaction mechanism, *Journal of Energy Storage*, V 70, 15 October 2023, 107889
- C. Ferris, N. Golio, **H. Martinez**, A. Gellman, Alloy corrosion and passivation space, *Chemistry Communication Review*, DOI: 10.1039/d3cc01852k
- R. Dedryvere, **H. Martinez**, L'ère du post Lithium-ion, P.O.C. Media, Cahier d'Innovation Batteries, June 2023
- Morey, J., Ledeuil, J.-B., Madec, L., **Martinez, H.**, Operando Auger/XPS using an electron beam to reveal the dynamics morphology of Li plating and interphase formation in solid-state batteries, *Journal of Material Chemistry A*, 2023, DOI 10.11039/d3ta00386h, **Selected as Hot articles 2023**
- Madec, L., Ledeuil, J.-B., Morey, J., **Martinez, H.**, Cross-section nano-Auger/SEM analysis to reveal bulk chemical/morphological properties of composites for energy storage, *Electrochimica Acta*, 2023, 448, 142185
- Ait Jmal, S., Balli, M., **Bouhani, H.**, Mounkachi, O., On the electronic and magnetic properties of RVO_3 (R = Er, Ho, Y, Lu) vanadates: first principles study, *Materials Chemistry and Physics*, 2023, 294, 127058
- Karbak, M., Baazizi, M., Sayah, S., Chafik, T., **Martinez, H.**, Ghamouss, F., Unraveling high-performance oxygen-deficient amorphous manganese oxide as the cathode for advanced zinc ion batteries, *Journal of Materials Chemistry A*, 2023, 11(6), pp. 2634–2640
- Touja, J., Salembier Peyrovi, P., Tison, Y., **Martinez, H.**, Stievano, L., Monconduit, L., Effects of the Electrolyte Concentration on the Nature of the Solid Electrolyte Interphase of a Lithium Metal Electrode, *Energy Technology*, 2023, 11(1), 2201037
- M. Amou, H. Aziam, B. Larhrib, N. Sabi, H. Martinez, H. Ben Youcef, I. Saadoun, Novel NASICON-typed porous $Ni_{1.5}V_2(PO_4)_3/C$ and $Mn_{1.5}V_2(PO_4)_3/C$ as anode materials for lithium-ion batteries: Crystal structure and electrochemical lithiation/delithiation reaction mechanism, *Energy storage (2023)*, in press

2022

- I. Zdeg, A. Al-Shami, G. Tiouichi, H. Absike, V. Chaudhary, P. Neugebauer, K. Nouneh, **A. Belhboub**, O. Mounkachi, A. El Fatimy Electrical Transport Properties of Layered Black Phosphorus grown by Chemical Vapor Transport I, *Cryst. Res. Technol.*, 58, 2200164, 2022.
- **H. Martinez**, R. Dedryvere, Énergie : comment vont évoluer les batteries lithium-ion, très consommatrices de métaux en tension ?, *The Conversation*, 2022
- M. Amou, H. Aziam, B. Larhrib, N. Sabi, H. Martinez, H. Ben Youcef, I. Saadoun, $Fe_{1.5}V_2(PO_4)_3/C$ phosphate as a negative electrode material for high-rate performance lithium-ion batteries *Journal of Power Sources*, Elsevier, 2022, 532, pp.231310.
- L. Monconduit, A. Roland, J. Fullenwarth, J.-B. Ledeuil, **H. Martinez**, How carbon coating or continuous carbon pitch matrix influence the silicon electrode/electrolyte interface and the performance in Li-ion batteries. *Battery Energy*, 2022. doi: 10.1002/bte2.20210009.
- L. Moses Koudia, S. Blanc, S. Joseph, C. Miqueu, F. Pannier, H. Martinez, Characterization of Clay Materials from Ivory Coast for Their Use as Adsorbents for Wastewater Treatment, *Journal of Minerals and Materials Characterization and Engineering*, Scientific Research Publishing, 2022, 10, pp.319 - 337. [10.4236/jmmce.2022.104023](https://doi.org/10.4236/jmmce.2022.104023)
- Larhrib, B., Madec, L., Monconduit, L., **Martinez, H.**, Optimized electrode formulation for enhanced performance of graphite in K-ion batteries, *Electrochimica Acta*, 2022, 425, 140747
- Girardet, T., Venturini, P., **Martinez, H.**, Cleymand, F., Fleutot, S., Spinel Magnetic Iron Oxide Nanoparticles: Properties, Synthesis and Washing Methods, *Applied Sciences (Switzerland)*, 2022, 12(16), 8127

- Mawélé Loudy, C., Allouche, J., Bousquet, A., Billon, L., **Martinez, H.**, Functional nanoparticle-driven self-assembled diblock copolymer hybrid nano-patterns, *Polymer Chemistry*, 2022, 13(13), pp. 1920–1930
- B. F P Mcvey, R. A Swain, D. Lagarde, W.-S. Ojo, K. Bakkouche, **C. Marcelot**, **B. Warot-Fonrose**, **Y. Tison**, **H. Martinez**, **B. Chaudret**, **C. Nayral**, **F. Delpech**. Cd3P2/Zn3P2 Core-Shell Nanocrystals: Synthesis and Optical Properties. *Nanomaterials*, 2022, 12, [10.3390/nano12193364](https://doi.org/10.3390/nano12193364)
- Morey, J., Ledeuil, J.-B., Madec, L., **Martinez, H.**, Methodological developments to expose and analyse buried interfaces in lithium solid state batteries using exsitu, in situ and operando cycling, *EPI Web of Conferences*, 273, 01007 (2022), JNSPE 2022

2021

- A.Sasikumar **A.Belhboub**, C. Bacon, A. C. Forse, J. M. Griffin, C. P. Grey, P. Simon, C. Merlet, "Mesoscopic simulations of the in situ NMR spectra of porous carbon based supercapacitors: electronic structure and adsorbent reorganisation effects" *Phys. Chem. Chem. Phys.*, **23**, 15925-15934 **2021 Q1**
- L. Caracciolo, L. Madec, G. Gachot, **H. Martinez**, Impact of the Salt Anion on K Metal Reactivity in EC/DEC Studied Using GC and XPS Analysis, *ACS Applied Materials & Interfaces*, Washington, D.C. : American Chemical Society, 2021, 13 (48), pp.57505-57513. [10.1021/acsaami.1c19537](https://doi.org/10.1021/acsaami.1c19537)
- L. Caracciolo, L. Madec, **H. Martinez**, XPS Analysis of K-based Reference Compounds to Allow Reliable Studies of Solid Electrolyte Interphase in K-ion Batteries (2021) ACS Applied Energy Materials, ACS, 2021, 4 (10), pp.11693-11699. [10.1021/acsaem.1c02400](https://doi.org/10.1021/acsaem.1c02400)
- Atout, H., Bouguettoucha, A., Chebli, D., Crespo, J., Dupin, J.-C., López-De-Luzuriaga, J.M., **Martínez, H.**, Monge, M., Olmos, M.E., Rodríguez-Castillo, M. An improved plasmonic Au-Ag/TiO2/rGO photocatalyst through entire visible range absorption, charge separation and high adsorption ability (2021) *New Journal of Chemistry*, 45 (26), pp. 11727-11736.
- Rivera-Cárcamo, C., Scarfiello, C., García, A.B., Tison, Y., **Martinez, H.**, Baaziz, W., Ersen, O., Le Berre, C., Serp, P. Stabilization of Metal Single Atoms on Carbon and TiO2 Supports for CO2 Hydrogenation: The Importance of Regulating Charge Transfer (2021) *Advanced Materials Interfaces*, 8 (8), art. no. 2001777
- Charles-Blin, Y., Gimello, O., Flahaut, D., Guérin, K., Dubois, M., Monconduit, L., Louvain, N., **Martinez, H.** Surface atomic layer fluorination of Li4Ti5O12: Investigation of the surface electrode, *Applied Surface Science (2020) 527*, (S0169433220315919), (10.1016/j.apsusc.2020.146834)) (2021) *Applied Surface Science*, 542, art. no. 148703, .
- Madec, L., Tang, C., Ledeuil, J.-B., Giaume, D., Guerlou-Demourgues, L., **Martinez, H.** Cross-section auger analysis to study the bulk organization/ structure of mn-co nano-composites for hybrid supercapacitors (2021) *Journal of the Electrochemical Society*, 168 (1), art. no. 010508, . DOI: 10.1149/1945-7111/abd606
- V.Vachitana, D. Foix, M. Menta, **H. Martinez**, F. Seby Optimization of elemental selenium (Se(0)) determination in yeasts by anion-exchange HPLC-ICP-MS (2021) *Analytical and Bioanalytical Chemistry*, 413 (7), pp. 1809-1816. doi:10.1007/s00216-020-03129-y
- Roland, B. Delarre, J-B. Ledeuil, N. Louvain, **H. Martinez**, L. Monconduit, Silicon-based electrodes formulation in buffered solution for enhanced electrode-electrolyte interfaces (2021) *Journal of Power Sources*, 489, art. no. 229465

2020

- E. H. Lahrar, **A. Belhboub**, P. Simon, C. Merlet, Ionic liquids under confinement : from systematic variations of the ion and pore sizes towards an understanding of structure and dynamics in complex porous carbons, *ACS Appl. Mater. Interfaces*, 12, 1789, 2020.
- **H. Bouhani**, A. Endichi, D. Kumar, O. Copie, H. Zaari, A. David, A. Fouchet, W. Prellier, O. Mounkachi, M. Balli, A. Benyoussef, A. E. Kenz, and S. Mangin "Engineering the magnetic and magnetocaloric properties of epitaxial oxide thin films by strain effects", *Appl. Phys. Lett.* 117, 072402, <https://doi.org/10.1063/5.0021031.2020>
- Endichi, **H. Bouhani** et al., "Electronic and magnetic properties of the multiferroic TbMn2O5" *Appl.Phys. A*. 126 (6), 410, **2020**
- **Y. Min**, **F. Leng**, **B. F. Machado**, **P. Lecante**, **P. Roblin**, **H. Martinez**, **T. Theussl**, **A. Casu**, **M. Barcenilla**, **S. Coco**, **B. M. I. Martínez**, **N. Martin**, **M. Rosa Axet**, **P. Serp** 2D and 3D Ruthenium Nanoparticle Covalent Assemblies for Phenyl Acetylene Hydrogenation (2020) European Journal of Inorganic Chemistry, Wiley-VCH Verlag, 43, pp.4069-4082.

- Mawélé Loudy, [S. Chasvised](#), [C. Paybou](#), [C. Courreges](#), J. Allouche, A. Bousquet, [H. Martinez](#), L. Billon Revealing surface functionalities via microwave for the para-fluoro-Thiol click reaction (2020) *Polymer, Elsevier*, 2020, 202, pp.122675
- [Rivera-Cárcamo](#), [C. Scarfiello](#), [A. B. García](#), [Y. Tison](#), [H. Martinez](#), [W. Baaziz](#), [C. Le Berre](#), [P. Serp](#) Stabilization of Metal Single Atoms on Carbon and TiO₂ Supports for CO₂ Hydrogenation: The Importance of Regulating Charge Transfer (2020) *Advance Materials Interfaces* doi : [10.1002/admi.202001777](#)
- [L. Madec](#), [C. Tang](#), [J.B.Ledeuil](#), [D. Giaume](#), [L. Guerlou Demourgue](#), [H. Martinez](#) Cross-Section Auger Analysis to Study the Bulk Organization/Structure of Mn-Co Nano-Composites for Hybrid Supercapacitors (2020) *Journal of the Electrochemical Society*, 168(1), 010508
- [L. Caracciolo](#), [L. Madec](#), [E. Petit](#), [E. Gabaudan](#), [D. Carlier](#), [L. Groguenec](#), [H. Martinez](#) Electrochemical redox processes involved in carbon-coated KVPO₄F for high voltage K-ion batteries revealed by XPS analysis (2020) *Journal of the Electrochemical Society*, 167 (13), 130527
- [J.Touja](#), [V. Gabaudan](#), [F. Farina](#), [S. Cavaliere](#), [L. Caracciolo](#), [L. Madec](#), [H. Martinez](#), [A. Boulaou](#), [J. Wallenstein](#), [P. Johansson](#), [L. Stievano](#), [L.Monconduit](#) Self-supported carbon nanofibers as negative electrodes for K-ion batteries: performance and mechanism (2020) *Electrochimica Acta* 362, 137125
- [S. Kim](#), [E. J. Kim](#), [Y. Charles-blin](#), [K. Guérin](#), [M. Dubois](#), [H. Martinez](#), [M. Deschamps](#), [L. Monconduit](#), [N. Louvain](#), [Atomic Layer Fluorination of 5 V Class Positive Electrode Material LiCoPO₄ for Enhanced Electrochemical Performance.](#) (2020) *Batteries & Supercaps*, (doi : [10.1002/batt.202000041](#))
- [Y. Charles-Blin](#), [D. Flahaut](#), [K. Guérin](#), [M. Dubois](#), [L. Monconduit](#), [N. Louvain](#), [H. Martinez](#), Surface atomic layer fluorination of Li₄Ti₅O₁₂: Investigation of the surface electrode reactivity and the outgassing behavior in LiBs. (2020) *Applied Surface Science* 527, 146834
- [L. Madec](#), [G. Coquil](#), [J-B. Ledeuil](#), [G. Gachot](#), [L. Monconduit](#), [H. Martinez](#), [How the Binder/Solvent Formulation Impacts the Electrolyte Reactivity/Solid Electrolyte Interphase Formation and Cycling Stability of Conversion Type Electrodes.](#) (2020) *Journal of The Electrochemical Society*, 167 (6), pp.060533
- Mawélé Loudy, [J. Allouche](#), [A. Bousquet](#), [H. Martinez](#), [L. Billon](#) A nanopatterned Dual Reactive Surface Driven by Block copolymer Self-Assembly (2020) *Nanoscale*, 12 (14), pp.7532-7537
- [N. Gauthier](#), [C. Courreges](#), [J. Demeaux](#), [C. Tessier](#), and [H. Martinez](#) Influence of the Cathode Potential on Electrode Interactions within a Li₄Ti₅O₁₂ vs LiNi_{3/5}Mn_{1/5}Co_{1/5}O₂ Li-Ion Battery (2020) *Journal of The Electrochemical Society*, Volume 167, Number 4, 040504
- [Flamary-Mespoulie](#), [A. Boulineau](#), [H. Martinez](#), [M. R. Suchomel](#), [C. Delmas](#), [B. Pecquenard](#), [F. Le Cras](#). Lithium-rich layered titanium sulfides: Cobalt- and Nickel-free high capacity cathode materials for lithium-ion batteries. (2020) *Energy Storage Materials*, 26, 213–222
- [Y. Min](#), [H. Nasrallah](#), [D. Poinot](#), [P. Lecante](#), [Y. Tison](#), [H. Martinez](#), [P. Roblin](#), [A. Falqui](#), [R. Poteau](#), [I. Gerber](#), [J-C. Hierso](#), [M. Rosa Axet](#), [P. Serp](#). 3D Ruthenium Nanoparticle Covalent Assemblies from Polyman-tane Ligands for Confined Catalysis. (2020) *Chemistry of Materials*, 32(6), 2365–2378
- [N. Gauthier](#), [C. Courreges](#), [J. Demeaux](#), [C. Tessier](#), and [H. Martinez](#). Impact of the cycling temperature on electrode/electrolyte interfaces within Li₄Ti₅O₁₂ vs LiMn₂O₄ cells. (2020) *Journal of Power Sources*, 448, 227573
- [R. Swain](#), [B. McVey](#), [H. Virieux](#), [F. Ferrari](#), [Y. Tison](#), [H. Martinez](#), [B. Chaudret](#), [C. Nayral](#), [F. Delpech](#). Sustainable quantum dot chemistry: effects of precursor, solvent, and surface chemistry on the synthesis of Zn₃P₂ nanocrystals, (2020) *Chemical Communications*, 56(22), p 3321-3324
- [N. Gauthier](#), [C. Courreges](#), [J. Demeaux](#), [C. Tessier](#), and [H. Martinez](#), Probing the in-depth distribution of organic/inorganic molecular species within the SEI of LTO/NMC and LTO/LMO batteries: A complementary ToF-SIMS and XPS study. (2020) *Applied Surface Science*, 501, 144266

2019

- [Y. Almadori](#), [A.C. Selvati](#), [G. Delpont](#), [A. Belhboub](#), [N. Iazard](#), [B. Jouselme](#), [S. Campidelli](#), [P. Hermet](#), [R. Aznar](#), [R. Le Parc](#), [F. Fossard](#), [T. Saito](#), [Y. Sato](#), [K. Suenaga](#), [P. Puech](#), [J.S. Lauret](#), [G. Cassabois](#), [J-L. Bantignies](#), [L. Alvarez](#), Fermi level shift in carbon nanotubes by dye confinement *Carbon*, 149, 772-780, 2019
- [A. Belhboub](#), [E. H. Lahrar](#), [P. Simon](#), [C. Merlet](#), On the development of an original mesoscopic model to predict the capacitive properties of carbon-carbon supercapacitors, *Electrochimica Acta*, 327, 135022, 2019
- [L. Madec](#), [J-B. Ledeuil](#), [G. Coquil](#), [G. Gachot](#), [L. Monconduit](#), and [H. Martinez](#). Cross-section Auger imaging: A suitable tool to study aging mechanism of conversion type electrodes. (2019) *Journal of Power Sources*, 441, 227213
- [H. Bouhani](#), [A. Endichi](#), [H. Zaari](#), [A. Benyoussef](#), [M. Hamedoun](#), [M. Balli](#), [A. E. Kenz](#), and [O. Mounkachi](#), " On the origin of the giant magnetocaloric effect in HoMn₂O₅ single crystals: First principles and Monte

carlo simulation", *Materials Chemistry and Physics*, 2019, 231, pp. 366–371

- Gakis, C. Vahlas, H. Vergnes, S. Dourdain, Y. Tison, **H. Martinez**, J. Bour, D. Ruch, A. Boudouvis, B. Caussat, and E. Scheid. Investigation of the initial deposition steps and the interfacial layer of Atomic Layer Deposited (ALD) Al_2O_3 on Si. (2019) *Applied Surface Science*, 492:245-254
- Y. Charles-Blin, D. Flahaut, J-B Ledeuil, K. Guerin, M. Dubois, A-M. Perbost, L. Monconduit, **H. Martinez**, and N. Louvain. Atomic Layer Fluorination of $\text{Li}_4\text{Ti}_5\text{O}_{12}$ Surface: a multiprobing survey. (2019) *ACS Applied Energy Materials*, 2(9), 6681-6692
- L. Madec, J-B Ledeuil, G. Coquil, L. Monconduit, and **H. Martinez**. Cross-Section Auger/XPS Imaging of Conversion Type Electrodes: How Their Morphological Evolution Controls the Performance in Li-Ion Batteries. (2019) *ACS Applied Energy Materials*, 2(7):5300-5307
- Y. Charles-Blin, D. Flahaut, J-B. Ledeuil, K. Guerin, M. Dubois, N. Louvain, L. Monconduit, and **H. Martinez**. Surface Layer Fluorination of TiO_2 Electrodes for Electrode Protection LiBs: Fading the Reactivity of the Negative Electrode/Electrolyte Interface. (2019) *Journal of The Electrochemical Society*, 166(10):A1905-A1914.
- M. Poulain, H. Messabeb, A. Lach, F. Contamine, P. Cezac, J-P. Serin, J-C. Dupin, **H. Martinez**. Experimental Measurements of Carbon Dioxide Solubility in Na-Ca-KCl Solutions at High Temperatures and Pressures up to 20 MPa. (2019) *Journal of Chemical and Engineering Data*, 64(6):2497-2503.
- Mawele Loudy, J. Allouche, A. Bousque, C. Courreges, **H. Martinez**, and L. Billon. Core@Corona Functional Nanoparticles-driven Rod-Coil Diblock Copolymer Self- Assembly. (2019) *Langmuir*, 35 (51), 16925-16934
- Z. Luo, Y. Min, W. Bacsá, D. Nechiyil, Y. Tison, **H. Martinez**, P. Lecante, I. Gerber, P. Serp, and M. R. Axet. Chemoselective reduction of quinoline over Rh-C 60 nanocatalysts. (2019) *Catalysis Science & Technology*, 9 (24), 6884-6898.
- [Mcvey](#), [R. Swain](#), [D Lagarde](#), [Y. Tison](#), **H. Martinez**, [Bruno Chaudret](#), [Céline Nayral](#), [F. Delpech](#) Unraveling the Role of Zinc Complexes on Indium Phosphide Nanocrystal Chemistry. (2019) *The Journal of physical chemistry*, 151 (19), pp.191102.
- T. Cabaret, N. Harfouche, L. Leroyer, J-B Ledeuil, **H. Martinez**, B. Charrier A study of the physico-chemical properties of dried maritime pine resin to better understand the exudation process (2019) *De Gruyter Holforschung*, 73(12), 1093-1102