

Kavita Kumar, Tristan Asset, Xiaoyan Li, Yuanchao Liu, Xingxu Yan, Yechuan Chen, Michel Mermoux, Xiaoqing Pan, Plamen Atanassov, Frédéric Maillard, and Laetitia Dubau. Fe-N-C Electrocatalysts' Durability: Effects of Single Atoms' Mobility and Clustering. *ACS Catalysis*, pages 484–494, December 2020a. doi: 10.1021/acscatal.0c04625. URL <https://hal.archives-ouvertes.fr/hal-03092479>.

Moulay T Sougrati, Ismail Can Oğuz, Andrea Di Cicco, Jingkun Li, Andrea Zitolo, James M Ablett, Ismail Can Oğuz, Tzonka Mineva, Ivana Matanovic, Plamen Atanassov, Ying Huang, Iryna Zenyuk, Andrea Di Cicco, Kavita Kumar, Laetitia Dubau, Frédéric Maillard, Goran Dražić, and Frederic Jaouen. Identification of Durable and Non-Durable FeNx Sites in Fe-N-C Materials for Proton Exchange Membrane Fuel Cells. *Nature Catalysis*, 4:10–19, December 2020. doi: 10.1038/s41929-020-00545-2. URL <https://hal.archives-ouvertes.fr/hal-02931434>.

C. Montella. Voigt circuit representation model for electrochemical impedances under finite-length diffusion conditions. *Journal of Electroanalytical Chemistry*, 879:114785, December 2020a. doi: 10.1016/j.jelechem.2020.114785. URL <https://hal.archives-ouvertes.fr/hal-03059680>.

B.A. Boukamp, A. Rolle, R.N. Vannier, R.K. Sharma, and Elisabeth Djurado. Electrostatic spray deposited Ca<sub>3</sub>Co<sub>4</sub>O<sub>9+δ</sub> and Ca<sub>3</sub>Co<sub>4</sub>O<sub>9+δ</sub>/Ce<sub>0.9</sub>Gd<sub>0.1</sub>O<sub>1.95</sub> cathodes for SOFC. *Electrochimica Acta*, 362:137142, December 2020. doi: 10.1016/j.electacta.2020.137142. URL <https://hal.univ-grenoble-alpes.fr/hal-02952129>.

Ferdaousse Rhoufal, Salaheddine Guesmi, El Mostafa Ketatni, Laurent Jouffret, El Kebir Hilil, Nicolas Sergent, Saïd Obbade, and Fouad Bentiss. First divalent copper complex of a terdentate thiosemicarbazido-pyrazoline derived from 2,4-pentanedione bis(thiosemicarbazone): Synthesis, structural characterisation and antimicrobial in vitro activity assessment. *Polyhedron*, page 114992, December 2020. doi: 10.1016/j.poly.2020.114992. URL <https://hal.archives-ouvertes.fr/hal-03087598>.

Verónica Müller, Thierry Pagnier, Solene Tadier, Laurent Gremillard, Matías Jobbagy, and Elisabeth Djurado. Design of advanced one-step hydroxyapatite coatings for biomedical applications using the electrostatic spray deposition. *Applied Surface Science*, 541:148462, November 2020. doi: 10.1016/j.apsusc.2020.148462. URL <https://hal.univ-grenoble-alpes.fr/hal-03107204>.

Quentin Lemarié, Hassane Idrissi, Eric Maire, Pierre-Xavier Thivel, Fannie Alloin, and Lionel Roue. Impact of the binder nature on the morphological change of sulfur electrodes upon cycling investigated by in situ characterization methods. *Journal of Power Sources*, 477:228374, November 2020a. doi: 10.1016/j.jpowsour.2020.228374. URL <https://hal.archives-ouvertes.fr/hal-02919803>.

Sylwia Waluś, Céline Barchasz, Renaud Bouchet, and F. Alloin. Electrochemical impedance spectroscopy study of lithium–sulfur batteries: Useful technique to reveal the Li/S electrochemical mechanism. *Electrochimica Acta*, 359:136944, November 2020. doi: 10.1016/j.electacta.2020.136944. URL <https://hal.archives-ouvertes.fr/hal-02925501>.

C. Montella. From the anomalous diffusion impedance to the closed-form, infinite-series and integral formulations of the voltammetric response of thin-film insertion materials under restricted diffusion conditions. A modelling contribution based on the anomalous mass transfer function. *Journal of Electroanalytical Chemistry*, page 114835, November 2020b. doi: 10.1016/j.jelechem.2020.114835. URL <https://hal.archives-ouvertes.fr/hal-03059676>.

Youcef Karar, Salem Boudinar, Aziz Kadri, Jean-claude Leprêtre, Nassima Benbrahim, and Eric Chainet. Ammonium chloride effects on bismuth electrodeposition in a choline chloride-urea deep eutectic solvent. *Electrochimica Acta*, November 2020. doi: 10.1016/j.electacta.2020.137481. URL <https://hal.archives-ouvertes.fr/hal-03028382>.

Sylvie Neyertz and David Brown. Single- and mixed-gas sorption in large-scale molecular models of glassy bulk polymers. Competitive sorption of a binary CH<sub>4</sub>/N<sub>2</sub> and a ternary CH<sub>4</sub>/N<sub>2</sub>/CO<sub>2</sub> mixture in a polyimide membrane. *Journal of Membrane Science*, 614:118478, November 2020a. doi: 10.1016/j.memsci.2020.118478. URL <https://hal.archives-ouvertes.fr/hal-02931651>.

Matthieu Gras, Lucien Duclos, Nicolas Schaeffer, Vijetha Mogilireddy, Lenka Svecova, Eric Chainet, Isabelle Billard, and Nicolas Papaiconomou. A Comparison of Cobalt and Platinum Extraction in Hydrophobic and Hydrophilic Ionic Liquids: Implication for Proton Exchange Membrane Fuel Cell Recycling. *ACS Sustainable Chemistry & Engineering*, 8(42):15865–15874, October 2020. doi: 10.1021/acssuschemeng.0c04263. URL <https://hal.univ-grenoble-alpes.fr/hal-02995459>.

Eris Sinoimeri, Victor Maia Fernandes, Jérôme Cognard, Jorge Fernando Brandão Pereira, Lenka Svecova, Ismaël Guillotte, and Isabelle Billard. Uncommon biphasic behaviour induced by very high metal ion concentrations in HCl/H<sub>2</sub>O/[P 44414 ]Cl and HCl/H<sub>2</sub>O/PEG-600 systems. *Physical Chemistry Chemical Physics*, 22(40):23226–23236, October 2020. doi: 10.1039/D0CP03689G. URL <https://hal.univ-grenoble-alpes.fr/hal-02995444>.

Vivien Gatard, Jonathan Deseure, and Marian Chatenet. Use of magnetic fields in electrochemistry: a selected review. *Current Opinion in Electrochemistry*, 23:96–105, October 2020. doi: 10.1016/j.coelec.2020.04.012. URL <https://hal.univ-grenoble-alpes.fr/hal-02953311>.

Yasser Ahmad, Sandrine Berthon-Fabry, Marian Chatenet, Guillaume Monier, Marc François Pierre Dubois, and Katia Guerin. Advances in tailoring the water content in porous carbon aerogels using RT-pulsed fluorination. *Journal of Fluorine Chemistry*, 238:109633, October 2020. doi: 10.1016/j.jfluchem.2020.109633. URL <https://hal.univ-grenoble-alpes.fr/hal-02953315>.

Zeinab El-Moussawi, Ali NOURDINE, and Lionel Flandin. A key progress in introducing single walled carbon nanotubes to photovoltaic devices. *Applied Nanoscience*, October 2020. doi: 10.1007/s13204-020-01561-1. URL <https://hal.archives-ouvertes.fr/hal-02955626>.

Victor Shokhen, Melina Zysler, Meital Shviro, David Zitoun, and Marian Chatenet. Carbon-Supported PtNi Nanocrystals for Alkaline Oxygen Reduction and Evolution Reactions: Electrochemical Activity and Durability upon Accelerated Stress Tests. *ACS Applied Energy Materials*, 3(9):8858–8870, September 2020. doi: 10.1021/acsaem.0c01356. URL <https://hal.univ-grenoble-alpes.fr/hal-02955536>.

J. Morales-Ugarte, C. Santini, R. Bouchet, and A. Benayad. New Interpretation of X-ray Photoelectron Spectroscopy of Imidazolium Ionic Liquid Electrolytes Based on Ionic Transport Analyses. *Journal of Physical Chemistry B*, 124(35):7625–7635, September 2020. doi: 10.1021/acs.jpcb.0c04090. URL <https://hal.archives-ouvertes.fr/hal-02996995>.

P. Dumaz, C. Rossignol, A. Mantoux, N. Sergent, and R. Bouchet. Kinetics analysis of the electro-catalyzed degradation of high potential LiNi<sub>0,5</sub>Mn<sub>1,5</sub>O<sub>4</sub> active materials. *Journal of Power Sources*, 469:228337, September 2020. doi: 10.1016/j.jpowsour.2020.228337. URL <https://hal.archives-ouvertes.fr/hal-02864978>.

C.S. Martinez-Cisneros, A. Fernandez, C. Antonelli, B. Levenfeld, A. Varez, K. Vezzù, V. Di Noto, and J.-Y. Sanchez. Opening the door to liquid-free polymer electrolytes for calcium batteries. *Electrochimica Acta*, 353:136525, September 2020. doi: 10.1016/j.electacta.2020.136525. URL <https://hal.archives-ouvertes.fr/hal-02996996>.

M. Rkhis, A. Alaoui-Belghiti, S. Laasri, S. Touhtouh, A. Hajjaji, E.K. Hlil, M. Bououdina, Kader zaidat, and S. Obbade. Enhanced thermodynamic properties of ZrNiH<sub>3</sub> by substitution with transition metals (V, Ti, Fe, Mn and Cr). *International Journal of Hydrogen Energy*, 45(46):25002–25012, September 2020. doi: 10.1016/j.ijhydene.2020.06.213. URL <https://hal.archives-ouvertes.fr/hal-02941163>.

Santiago Rodríguez-Valderrama, Carlos Escamilla-Alvarado, Jean-Pierre Magnin, Pasiano Rivas-García, Idania Valdez-Vazquez, and Elvira Ríos-Leal. Batch biohydrogen production from dilute acid hydrolyzates of fruits-and-vegetables wastes and corn stover as co-substrates. *Biomass and Bioenergy*, 140:105666, September 2020a. doi: 10.1016/j.biombioe.2020.105666. URL <https://hal.univ-grenoble-alpes.fr/hal-02951141>.

Nicolas Schaeffer, Helena Passos, Matthieu Gras, Sílvia Juliana Rodriguez Vargas, Márcia Neves, Lenka Svecova, Nicolas Papaiconomou, and Joao A.P. Coutinho. Selective Separation of Manganese, Cobalt, and Nickel in a Fully Aqueous System. *ACS Sustainable Chemistry & Engineering*, 8(32):12260–12269, August 2020. doi: 10.1021/acssuschemeng.0c04043. URL <https://hal.archives-ouvertes.fr/hal-02943104>.

E. Coron, S. Geniès, M. Cugnet, and P. Thivel. Impact of Lithium-Ion Cell Condition on Its Second Life Viability. *Journal of The Electrochemical Society*, 167(11):110556, August 2020. doi: 10.1149/1945-7111/aba703. URL <https://hal.archives-ouvertes.fr/hal-02919802>.

Guillaume Tonin, Gavin B.M. Vaughan, Renaud Bouchet, Fannie Alloin, Marco Di Michiel, and Céline Barchasz. Operando investigation of the lithium/sulfur battery system by coupled X-ray absorption tomography and X-ray diffraction computed tomography. *Journal of Power Sources*, 468:228287, August 2020. doi: 10.1016/j.jpowsour.2020.228287. URL <https://hal.archives-ouvertes.fr/hal-02718859>.

Thibault Lemercier, Lara Perrin, Emilie Planes, Solenn Berson, and Lionel Flandin. A Comparison of the Structure and Properties of Opaque and Semi-Transparent NIP/PIN-Type Scalable Perovskite Solar Cells. *Energies*, 13(15):3794, August 2020. doi: 10.3390/en13153794. URL <https://hal.archives-ouvertes.fr/hal-02928324>.

I. El Aboudi, Ahmed Mdarhri, Olivier Lame, Christian Brosseau, Ali NOURDINE, Damien Fabrègue, and Guillaume Bonnefont. Analyzing the microstructure and mechanical properties of polytetrafluoroethylene fabricated by field-assisted sintering. *Polymer*, 203:122810, August 2020. doi: 10.1016/j.polymer.2020.122810. URL <https://hal.archives-ouvertes.fr/hal-02929927>.

Santiago Rodríguez-Valderrama, Carlos Escamilla-Alvarado, Pasiano Rivas-García, Jean-Pierre Magnin, Mónica Alcalá-Rodríguez, and Refugio Bernardo García-Reyes. Biorefinery concept comprising acid hydrolysis, dark fermentation, and anaerobic digestion for co-processing of fruit and vegetable wastes and corn stover. *Environmental Science and Pollution Research*, 27(23):28585–28596, August 2020b. doi: 10.1007/s11356-020-08580-z. URL <https://hal.univ-grenoble-alpes.fr/hal-02951145>.

Raphaël Chattot, Pierre Bordet, Isaac Martens, Jakub Drnec, Laetitia Dubau, and Frédéric Maillard. Building Practical Descriptors for Defect Engineering of Electrocatalytic Materials. *ACS Catalysis*, 10(16):9046–9056, July 2020. doi: 10.1021/acscatal.0c02144. URL <https://hal.archives-ouvertes.fr/hal-02931378>.

Alexandr G Oshchepkov, Guillaume Braesch, Antoine Bonnefont, Elena R Savinova, and Marian Chatenet. Recent advances in the understanding of Ni-based catalysts for the oxidation of hydrogen-containing fuels in alkaline media. *ACS Catalysis*, 10(13):7043–7068, July 2020. doi: 10.1021/acscatal.0c00101. URL <https://hal.univ-grenoble-alpes.fr/hal-02953312>.

Sofyane Abbou, Raphaël Chattot, V. Martin, Fabien Claudel, Lluís Solà-Hernández, Christian Beauger, Laetitia Dubau, and Frédéric Maillard. Manipulating the Corrosion Resistance of SnO<sub>2</sub> Aerogels Trough Doping for Efficient and Durable Oxygen Evolution Reaction Electrocatalysis in Acidic Media. *ACS Catalysis*, 10(13):7283–7294, July 2020. doi: 10.1021/acscatal.0c01084. URL <https://hal.archives-ouvertes.fr/hal-02931377>.

Huu-Dat Nguyen, Thi Khanh Ly Nguyen, Emilie Planes, Jacques Jestin, Lionel Porcar, Sandrine Lyonnard, and Cristina Iojoiu. Tailoring the Proton Conductivity and Microstructure of Block Copolymers by Countercation-Selective Membrane Fabrication. *Journal of Physical Chemistry C*, 124(24):

13071–13081, June 2020a. doi: 10.1021/acs.jpcc.0c04682. URL <https://hal.archives-ouvertes.fr/hal-03055040>.

Emilie Planès, Sacha Juillard, Muriel Matheron, Nicolas Charvin, Stéphane Cros, Deping Qian, Fengling Zhang, Solenn Berson, and Lionel Flandin. Encapsulation Effect on Performance and Stability of Organic Solar Cells. *Advanced Materials Interfaces*, page 2000293, June 2020. doi: 10.1002/admi.202000293. URL <https://hal.archives-ouvertes.fr/hal-02862126>.

Emilie Brun, Hugues Girard, Jean-Charles Arnault, Michel Mermoux, and Cécile Sicard-Roselli. Hydrogen plasma treated nanodiamonds lead to an overproduction of hydroxyl radicals and solvated electrons in solution under ionizing radiation. *Carbon*, 162:510–518, June 2020. doi: 10.1016/j.carbon.2020.02.063. URL <https://hal.archives-ouvertes.fr/hal-02997013>.

D.D. Coimbrão, G. Zepón, G.Y. Koga, D.A. Godoy Pérez, F.H. Paes de Almeida, V. Roche, J.-C. Lepretre, A.M. Jorge, C.S. Kiminami, C. Bolfarini, A. Inoue, and W.J. Botta. Corrosion properties of amorphous, partially, and fully crystallized Fe68Cr8Mo4Nb4B16 alloy. *Journal of Alloys and Compounds*, 826:154123, June 2020. doi: 10.1016/j.jallcom.2020.154123. URL <https://hal.archives-ouvertes.fr/hal-02952878>.

Léa Rose Mangani and Claire Villevieille. Mechanical vs. chemical stability of sulphide-based solid-state batteries. Which one is the biggest challenge to tackle? Overview of solid-state batteries and hybrid solid state batteries. *Journal of Materials Chemistry A*, 8(20):10150–10167, May 2020. doi: 10.1039/D0TA02984J. URL <https://hal.archives-ouvertes.fr/hal-03119503>.

Rakesh Khatokar Amarnath, Pierre-Xavier Thivel, Jean-Claude Leprêtre, Yann Bultel, Francis ROY, and Gentien Thorner. Pulsed Current Based Fast Charging Methods for Li-Ion Battery. *ECS Meeting Abstracts*, MA2020-01(2):456–456, May 2020. doi: 10.1149/MA2020-012456mtgabs. URL <https://hal.archives-ouvertes.fr/hal-02906132>.

Clémence Lafforgue, Robert Atkinson, Karen Swider-Lyons, and Marian Chatenet. Evaluation of carbon-supported palladium electrocatalysts for the borohydride oxidation reaction in conditions relevant to fuel cell operation. *Electrochimica Acta*, 341:135971, May 2020. doi: 10.1016/j.electacta.2020.135971. URL <https://hal.univ-grenoble-alpes.fr/hal-02953305>.

Abdelhakim Laachir, Ferdaousse Rhoufal, Salaheddine Guesmi, El Mostafa Ketatni, Laurent Jouffret, El-Kebir Hlil, Nicolas Sergent, Saïd Obbade, and Fouad Bentiss. Cobalt(II) coordination complex with 2,5-bis(pyridine-2-yl)-1,3,4-thiadiazole and thiocyanate as co-ligand: Synthesis, crystal structure, Hirshfeld surface analysis, spectroscopic, thermal and magnetic properties. *Journal of Molecular Structure*, 1208:127892, May 2020. doi: 10.1016/j.molstruc.2020.127892. URL <https://hal.archives-ouvertes.fr/hal-02492465>.

Carmen de la Torre-Gamarra, María Eugenia Sotomayor, Jean-Yves Sanchez, Belén Levenfeld, Alejandro Várez, Barbara Laik, and Jean-Pierre Pereira-Ramos. High mass loading additive-free LiFePO<sub>4</sub> cathodes with 500 μm thickness for high areal capacity Li-ion batteries. *Journal of Power Sources*, 458:228033, May 2020. doi: 10.1016/j.jpowsour.2020.228033. URL <https://hal.archives-ouvertes.fr/hal-02997014>.

Robert Messinger, Tan Vu Huynh, R. Bouchet, Vincent Sarou-Kanian, and Michaël Deschamps. Magic-angle-spinning-induced local ordering in polymer electrolytes and its effects on solid-state diffusion and relaxation NMR measurements. *Magnetic Resonance in Chemistry*, April 2020. doi: 10.1002/mrc.5033. URL <https://hal.archives-ouvertes.fr/hal-02931426>.

S. Lanfredi, J. A. Matos, S.R. da Silva, Elisabeth Djurado, A.S. Sadouki, A. Chouaih, P.S. Poon, E.R.P. González, and M.A.L. Nobre. K- and Cu-doped CaTiO<sub>3</sub>-based nanostructured hollow spheres as alternative catalysts to produce fatty acid ethyl esters as potential biodiesel. *Applied Catalysis B: Environmental*, 272:118986, April 2020. doi: 10.1016/j.apcatb.2020.118986. URL <https://hal.univ-grenoble-alpes.fr/hal-02548145>.

Guilherme Yuuki Koga, Paul Comperat, Blandine Albert, Virginie Roche, and Ricardo Pereira Nogueira. Electrochemical responses and chloride ingress in reinforced Belite-Ye'elimitite-Ferrite (BYF) cement matrix exposed to exogenous salt sources. *Corrosion Science*, 166:108469, April 2020. doi: 10.1016/j.corsci.2020.108469. URL <https://hal.archives-ouvertes.fr/hal-02952855>.

Karen Al Hokayem, Roland El Hage, Lenka Svecova, Belkacem Otazaghine, Nicolas Le Moigne, and Rodolphe Sonnier. Flame Retardant-Functionalized Cotton Cellulose Using Phosphonate-Based Ionic Liquids. *Molecules*, 25(7):1629, April 2020. doi: 10.3390/molecules25071629. URL <https://hal-mines-ales.fr/hal-02537288>.

Manon Spalla, Lara Perrin, Emilie Planes, Muriel Matheron, Solenn M.-M. Berson, and Lionel Flandin. Influence of Chloride/Iodide Ratio in MAPbI<sub>3-x</sub>Cl<sub>x</sub> Perovskite Solar Devices: Case of Low Temperature Processable AZO Sub-Layer. *Energies*, 13(8):1927, April 2020a. doi: 10.3390/en13081927. URL <https://hal.archives-ouvertes.fr/hal-02545425>.

Guillaume Braesch, Alexandre Oshchepkov, Antoine Bonnefont, Fabrice Asonkeng, Thomas Maurer, Gaël Maranzana, Elena R. Savinova, and Marian Chatenet. Nickel 3D Structures Enhanced by Electrodeposition of Nickel Nanoparticles as High Performance Anodes for Direct Borohydride Fuel Cells. *ChemElectroChem*, 7(7):1789–1799, April 2020a. doi: 10.1002/celc.202000254. URL <https://hal-utt.archives-ouvertes.fr/hal-02547431>.

Andrzej Kulka, Cyril Marino, Katarzyna Walczak, Camelia Borca, Christoph Bolli, Petr Novák, and Claire Villevieille. Influence of Na/Mn arrangements and P2/P'2 phase ratio on the electrochemical performance of Na<sub>x</sub>MnO<sub>2</sub> cathodes for sodium-ion batteries. *Journal of Materials Chemistry A*, 8 (12):6022–6033, March 2020. doi: 10.1039/C9TA12176E. URL <https://hal.archives-ouvertes.fr/hal-03119499>.

Quentin Lemarié, Éric Maire, Hassane Idrissi, Pierre-Xavier Thivel, Fannie Alloin, and Lionel Roue. Sulfur-based electrode using a polyelectrolyte binder studied via coupled *in situ* synchrotron X-ray diffraction and tomography. *ACS Applied Energy Materials*, 3(3):2422–2431, March 2020b. doi: 10.1021/acsaem.9b02108. URL <https://hal.archives-ouvertes.fr/hal-02520782>.

Manon Spalla, Lara Perrin, Emilie Planes, Muriel Matheron, Solenn Berson, and Lionel Flandin. Effect of the hole transporting / active layer interface on the perovskite solar cell stability. *ACS Applied Energy Materials*, March 2020b. doi: 10.1021/acsaem.9b02281. URL <https://hal.archives-ouvertes.fr/hal-02511204>.

Johannes Fichtner, Sebastian Watzele, Batyr Garlyyev, Regina M Kluge, Felix Haimerl, Hany A El-Sayed, Wei-Jin Li, Frédéric Maillard, Laetitia Dubau, Raphaël Chattot, Jan Michalička, Jan M Macak, Wu Wang, Di Wang, Thomas Gigl, Christoph Hugenschmidt, and Aliaksandr S Bandarenka. Tailoring the Oxygen Reduction Activity of Pt Nanoparticles through Surface Defects: A Simple Top-Down Approach. *ACS Catalysis*, 10(5):3131–3142, March 2020. doi: 10.1021/acscatal.9b04974. URL <https://hal.archives-ouvertes.fr/hal-02931374>.

Pierre-Marie Geffroy, Eva Deronzier, Jean Gillibert, Pascal Munch, Thierry Chartier, and Jacques Fouletier. Determination of Oxygen Diffusion and Surface Exchange Coefficients of Mixed Ionic-Electronic Conductors by Oxygen Semi-Permeation Methods. *Journal of The Electrochemical Society*, 167(6):064503, March 2020. doi: 10.1149/1945-7111/ab7b84. URL <https://hal.archives-ouvertes.fr/hal-02576296>.

Sylvie Neyertz and David Brown. An optimized fully-atomistic procedure to generate glassy polymer films for molecular dynamics simulations. *Computational Materials Science*, 174:109499, March 2020b. doi: 10.1016/j.commatsci.2019.109499. URL <https://hal.archives-ouvertes.fr/hal-02434373>.

Ilham Elaboudi, Ahmed Mdarhri, Christian Brosseau, Ali Nourdine, Mourad Rzaizi, and Laurent Servant. Comparing the sorption kinetics of poly-tetrafluoroethylene processed either by extrusion

or spark plasma sintering. *Polymer*, 190:122192, March 2020. doi: 10.1016/j.polymer.2020.122192. URL <https://hal.archives-ouvertes.fr/hal-02548877>.

Adrian Beda, Claire Villevieille, Pierre-Louis TABERNA, Patrice SIMON, and Camelia Matei Ghimbeu. Self-Supported Binder-Free Hard Carbon Electrodes for Sodium-Ion Batteries: Insights into the Sodium Storage Mechanisms. *Journal of Materials Chemistry A*, February 2020. doi: 10.1039/C9TA13189B. URL <https://hal.archives-ouvertes.fr/hal-02927042>.

Huu-Dat Nguyen, Regis Porihel, Jean-Blaise Brubach, Emilie Planes, Priscillia Soudant, Patrick Judeinstein, Lionel Porcar, Sandrine Lyonnard, and Cristina Iojoiu. Perfluorosulfonyl Imide versus Perfluorosulfonic Acid Ionomers in Proton-Exchange Membrane Fuel Cells at Low Relative Humidity. *ChemSusChem*, 13(3):590–600, February 2020b. doi: 10.1002/cssc.201902875. URL <https://hal.archives-ouvertes.fr/hal-03056914>.

Nur Istiqomah Khamidy, Jérôme Laurencin, Dario Ferreira Sanchez, Federico Monaco, Frédéric Charlot, and Elisabeth Djurado. Durability of nanostructured LaPrNiO<sub>4+δ</sub> electrode for solid oxide cells: Electrochemical, microstructural, and structural investigation. *Journal of Power Sources*, 450:227724, February 2020. doi: 10.1016/j.jpowsour.2020.227724. URL <https://hal.univ-grenoble-alpes.fr/hal-02464568>.

Vincent Caldeira, Julien Thiel, François René Lacoste, Laetitia Dubau, and Marian Chatenet. Improving zinc porous electrode for secondary alkaline batteries: Toward a simple design of optimized 3D conductive network current collector. *Journal of Power Sources*, 450(6):227668, February 2020. doi: 10.1016/j.jpowsour.2019.227668. URL <https://hal.univ-grenoble-alpes.fr/hal-02953302>.

Elena Marelli, Cyril Marino, Christoph Bolli, and Claire Villevieille. How to overcome Na deficiency in full cell using P2-phase sodium cathode -a proof of concept study of Na-rhodizonate used as sodium reservoir. *Journal of Power Sources*, 450:227617, February 2020. doi: 10.1016/j.jpowsour.2019.227617. URL <https://hal.archives-ouvertes.fr/hal-03119498>.

Dominik Blasenbauer, Florian Huber, Jakob Lederer, Margarida Quina, Denise Blanc-Biscarat, Anna Bogush, Elza Bontempi, Julien Blondeau, Josep Maria Chimenos, Helena Dahlbo, Johan Fagerqvist, Jessica Giro-Paloma, Ole Hjelmar, Jiri Hyks, Jackie Keaney, Maria Lupsea-Toader, Catherine Joyce O’Caollai, Kaja Orupöld, Tadeusz Pajak, Franz-Georg Simon, Lenka Svecova, Michal Šyc, Roy Ulvang, Kati Vaajasaari, Jo Van Caneghem, Andre van Zomeren, Saulius Vasarevičius, Krisztina Wégner, and Johann Fellner. Legal situation and current practice of waste incineration bottom ash utilisation in Europe. *Waste Management*, 102:868–883, February 2020. doi: 10.1016/j.wasman.2019.11.031. URL <https://hal.archives-ouvertes.fr/hal-02472497>.

Denis Sheptyakov, Lucien Boulet-Roblin, Vladimir Pomjakushin, Philippe Borel, Cécile Tessier, and Claire Villevieille. Stroboscopic neutron diffraction applied to fast time-resolved operando studies on Li-ion batteries (d-LiNi 0.5 Mn 1.5 O 4 vs. graphite). *Journal of Materials Chemistry A*, 8(3): 1288–1297, January 2020. doi: 10.1039/C9TA11826H. URL <https://hal.archives-ouvertes.fr/hal-03119501>.

Didier Devaux, Hugo Leduc, Philippe Dumaz, Margaux Lecuyer, Marc Deschamps, and Renaud Bouchet. Effect of Electrode and Electrolyte Thicknesses on All-Solid-State Battery Performance Analyzed With the Sand Equation. *Frontiers in Energy Research*, 7(168), January 2020. doi: 10.3389/fenrg.2019.00168. URL <https://hal.archives-ouvertes.fr/hal-02467305>.

J.-L. Courouau, J. Fouletier, and M.C. C STEIL. HfO<sub>2</sub>-based electrolyte potentiometric oxygen sensors for liquid sodium. *Electrochimica Acta*, 331:135269, January 2020. doi: 10.1016/j.electacta.2019.135269. URL <https://hal.archives-ouvertes.fr/hal-02870278>.

Naima Mansouri, Nassima Benbrahim-Cherief, Eric Chaînet, Frédéric Charlot, Thierry Encinas, Salem Boudinar, Baya Benfedda, Lamia Hamadou, and Aziz Kadri. Electrodeposition of equiatomic

FeNi and FeCo nanowires: Structural and magnetic properties. *Journal of Magnetism and Magnetic Materials*, 493:165746, January 2020. doi: 10.1016/j.jmmm.2019.165746. URL <https://hal.archives-ouvertes.fr/hal-02366182>.

William E Mustain, Marian Chatenet, Miles Page, and Yu Seung Kim. Durability challenges of anion exchange membrane fuel cells. *Energy & Environmental Science*, 13(9):2805–2838, 2020. doi: 10.1039/d0ee01133a. URL <https://hal.univ-grenoble-alpes.fr/hal-02953358>.

Marine Trégaro, Maha Rhandi, Florence Druart, Jonathan Deseure, and Marian Chatenet. Electrochemical hydrogen compression and purification versus competing technologies – Part II: challenges in electrocatalysis. *Chinese Journal of Catalysis*, 41:770–782, January 2020. URL <https://hal.univ-grenoble-alpes.fr/hal-02426870>.

Diego Alfonso Godoy Pérez, Alberto Moreira Jorge Junior, Virginie Roche, Jean-Claude Lepretre, Conrado Ramos Moreira Afonso, Dilermundo Nagle Travessa, Gabriel Hitoshi Asato, Claudemiro Bolfarini, and Walter Jose Botta. Severe plastic deformation and different surface treatments on the biocompatible Ti<sub>13</sub>Nb<sub>13</sub>Zr and Ti<sub>35</sub>Nb<sub>7</sub>Zr<sub>5</sub>Ta alloys: Microstructural and phase evolutions, mechanical properties, and bioactivity analysis. *Journal of Alloys and Compounds*, 812:152116, January 2020. doi: 10.1016/j.jallcom.2019.152116. URL <https://hal.archives-ouvertes.fr/hal-02952850>.

Misgina Tilahun Tsehaye, F. Alloin, Cristina Iojoiu, Ramato Ashu Tufa, David Aili, Peter Fischer, and Svetlozar Velizarov. Membranes for zinc-air batteries: Recent progress, challenges and perspectives. *Journal of Power Sources*, 475:228689, 2020. doi: 10.1016/j.jpowsour.2020.228689. URL <https://hal.archives-ouvertes.fr/hal-02917603>.

A. Robba, C. Barchasz, K. Bučar, M. Petric, M. Žitnik, K. Kvashnina, G. Vaughan, R. Bouchet, F. Alloin, and M. Kavčič. Fingerprinting mean composition of lithium polysulfide standard solutions by applying high energy resolution fluorescence detected X-ray Absorption Spectroscopy. *Journal of Physical Chemistry Letters*, 11:5446–5450, 2020. doi: 10.1021/acs.jpclett.0c01120. URL <https://hal.archives-ouvertes.fr/hal-02891524>.

Abreham Tesfaye Besha, Misgina Tilahun Tsehaye, David Aili, Wenjuan Zhang, and Ramato Ashu Tufa. Design of Monovalent Ion Selective Membranes for Reducing the Impacts of Multivalent Ions in Reverse Electrodialysis. *Membranes*, 10(1):7, January 2020. doi: 10.3390/membranes10010007. URL <https://hal.archives-ouvertes.fr/hal-02997016>.

Guillaume Braesch, Zhongyang Wang, Shrihari Sankarasubramanian, Alexandre Oshchepkov, Antoine Bonnefont, Elena R Savinova, Vijay Ramani, and Marian Chatenet. High performance direct boro-hydride fuel cell using bipolar interfaces and noble metal-free Ni-based anodes. *Journal of Materials Chemistry A*, 2020b. doi: 10.1039/D0TA06405J. URL <https://hal.univ-grenoble-alpes.fr/hal-02953350>.

Maha Randhi, Marine Trégaro, Florence Druart, Jonathan Deseure, and Marian Chatenet. Electrochemical hydrogen compression and purification versus competing technologies – Part I: pros and cons. *Chinese Journal of Catalysis*, 41:756–769, January 2020. URL <https://hal.univ-grenoble-alpes.fr/hal-02426867>.

Lucien Duclos, Raphaël Chattot, Laetitia Dubau, Pierre-Xavier Thivel, Guillaume Mandil, Valérie Laforest, Marco Bolloli, Rémi Vincent, and Lenka Svecova. Closing the loop: Life cycle assessment and optimization of a PEMFC platinum-based catalyst recycling process. *Green Chemistry*, 22:1919–1933, 2020. doi: 10.1039/C9GC03630J. URL <https://hal.archives-ouvertes.fr/hal-02473412>.

Lucile Magnier, Didier Devaux, Joël Lachambre, Margaud Lecuyer, Marc Deschamps, Renaud Bouchet, and Eric Maire. Quantification of the Local Topological Variations of Stripped and Plated Lithium Metal by X-ray Tomography. *ACS Applied Materials & Interfaces*, 12(37):41390–41397, 2020. doi: 10.1021/acsami.0c10860. URL <https://hal.archives-ouvertes.fr/hal-02946315>.

Kavita Kumar, Laetitia Dubau, Michel Mermoux, Jingkun Li, Andrea Zitolo, Jaysen Nelayah, Frédéric Jaouen, and Frédéric Maillard. On the Influence of Oxygen on the Degradation of Fe-N-C Catalysts. *Angewandte Chemie*, 59:3235–3243, 2020b. doi: 10.1002/ange.201912451. URL <https://hal.archives-ouvertes.fr/hal-02464078>.

Adama Sy, Asif Iqbal Bhatti, Fahim Hamidouch, Olivier Le Bacq, Lecarme Laureline, and Jean-Claude Leprêtre. Correlation of electrochemical and ab initio investigations of Iron poly-bipyridine coordination complexes for battery applications: impact of anionic environment and local geometries of the redox complexes on the electrochemical response. *Physical Chemistry Chemical Physics*, pages 24077–24085, 2020. doi: 10.1039/D0CP01576H. URL <https://hal.archives-ouvertes.fr/hal-02907119>.

Ricardo Sgarbi, Edson Ticianelli, Frédéric Maillard, Frederic Jaouen, and Marian Chatenet. Oxygen Reduction Reaction on Metal and Nitrogen-Doped Carbon Electrocatalysts in the Presence of Sodium Borohydride. *Electrocatalysis*, 11(4):365–373, 2020. doi: 10.1007/s12678-020-00602-1. URL <https://hal.archives-ouvertes.fr/hal-02931375>.

Laetitia Dubau, Frédéric Maillard, Marian Chatenet, Sara Cavaliere, Ignacio Jiménez-Morales, Annette Mosdale, and Renaut Mosdale. Durability of Alternative Metal Oxide Supports for Application at a Proton-Exchange Membrane Fuel Cell Cathode-Comparison of Antimony- and Niobium-Doped Tin Oxide. *Energies*, 13(2):403, January 2020. doi: 10.3390/en13020403. URL <https://hal.archives-ouvertes.fr/hal-02443457>.

Isabelle Billard and Corinne Lagrost. Liquides ioniques, espoirs et raison, de la recherche à l'industrie. *Techniques de l'Ingénieur. Physique Chimie*, 2020. URL <https://hal.archives-ouvertes.fr/hal-03011403>.

Zhen Chen, Dominik Steinle, Huu-Dat Nguyen, Jae-Kwang Kim, Alexander Mayer, Junli Shi, Elie Paillard, Cristina Iojoiu, Stefano Passerini, and Dominic Bresser. High-energy lithium batteries based on single-ion conducting polymer electrolytes and Li[Ni0.8Co0.1Mn0.1]O<sub>2</sub> cathodes. *Nano Energy*, 77:105129, 2020. doi: 10.1016/j.nanoen.2020.105129. URL <https://hal.archives-ouvertes.fr/hal-03055012>.

I.A. Bataev, D.V. Lazurenko, A.A. Bataev, V.G. Burov, I.V. Ivanov, K.I. Emurlaev, A.I. Smirnov, M. Rosenthal, M. Burghammer, D.A. Ivanov, K. Georgarakis, A.A. Ruktuev, T.S. Ogneva, and A.M.J. Jorge. A novel operando approach to analyze the structural evolution of metallic materials during friction with application of synchrotron radiation. *Acta Materialia*, 196:355–369, 2020. doi: 10.1016/j.actamat.2020.06.049. URL <https://hal.archives-ouvertes.fr/hal-03095912>.