Publications 2020

Cini, A., Poggini, L., Chumakov, A. I., Rüffer, R., Spina, G., **Wattiaux, A.**, **Duttine, M.**, Gonidec, M., Fittipaldi, M., Rosa, P. & Mannini, M.
"Synchrotron-based Mössbauer spectroscopy characterization of sublimated spin crossover molecules."
Physical Chemistry Chemical Physics 22(12) (**2020**) 6626-6637.
DOI : 10.1039/C9CP04464G

Cotin, G., Perton, F., Petit, C., Sall, S., Kiefer, C., Begin, V., Pichon, B., Lefevre, C., Mertz, D., **Grenèche, J.-M.** & Begin-Colin, S.
"Harnessing composition of iron oxide nanoparticle : impact of solvent mediated ligand-ligand interaction and of competition between oxidation and growth kinetics"
Chem. Mater. 32 (**2020**) 9245 9259
DOI : 10.1021/acs.chemmater.0c03041

M. J. Dzara, K. Artyushkova, **M. T. Sougrati**, C. Ngo, M. A. Fitzgerald, A. Serov, B. Zulevi, P. Atanassov, F. Jaouen & S. Pylypenko
"Characterizing Complex Gas-Solid Interfaces with in Situ Spectroscopy : Oxygen Adsorption Behavior on Fe-N-C Catalysts"
Journal of Physical Chemistry C 124 (**2020**) 16529-16543
DOI : 10.1021/acs.jpcc.0c05244

Doggaz, A., **Coustel, R.**, Durand, P., Humbert, F. & Ruby, C.
"Birnessite : a new oxydant for Green Rust formation"
Materials 13 (**2020**) 3777
DOI : 10.3390/ma13173777

Duboscq, M., **Abdelmoula, M.**, Remazeilles, C., Jeannin, M., Sabot, R. & Refait, Ph.
"On the formation and transformation of Fe(III)-containing chukanovite, FeII2-xFeIIIx(OH)2-xOxCO3"
Journal of Physics and Chemistry of Solids 138 (**2020**) 109310
DOI : 10.1016/j.jpcs.2019.109310

F. Eveillard, C. Gervillie, C. Taviot-Gueho, F. Leroux, K. Guerin, **M. T. Sougrati**, S. Belin & D. Delbegue
"Unravelling lithiation mechanisms of iron trifluoride by operando X-ray absorption spectroscopy and MCR-ALS chemometric tools"
New Journal of Chemistry 44 (**2020**) 10153-10164
DOI : 10.1039/c9nj06321h

M. Fehse, D. Bessas, A. Mahmoud, A. Diatta, R. P. Hermann, L. Stievano & **M. T. Sougrati**
"The Fe4+/3+ redox mechanism in NaFeO2 : A simultaneous operando Nuclear Resonance and X-ray Scattering study"
Batteries & Supercaps 3 (**2020**) 1341-1349
DOI : 10.1002/batt.202000157

Franceschin, G., Gaudisson, T., Perez Quiros, S., Yaacoub, N., **Grenèche, J.-M.**, Menguy, N., Mercone, S., Mazaleyrat, F. & Ammar, S.
"Exchange-bias features in nanoceramics prepared by spark plasma sintering of exchange-biased nanopowders"
Journal of Materials Chemistry C 8 (**2020**) 5941-594
DOI : 10.1039/d0tc00428f

Fujieda, S., Gaudisson, T., **Grenèche, J.-M.**, François, M. & Ammar, S.
"Synthesis of Magnetic Wires from Polyol-Derived Fe-GlycolateWires"
Nanomaterials 10 (**2020**) 318
DOI : 10.3390/nano10020318

Garcia, Y.
"Selected polyazole based coordination polymers displaying functional properties"
Adv. Inorg. Chem. 76 (**2020**) 121-153.

T. Kosmala, N. Bibent, **M. T. Sougrati**, G. Drazic, S. Agnoli, F. Jaouen & G. Granozzi
"Stable, Active, and Methanol-Tolerant PGM-Free Surfaces in an Acidic Medium : Electron Tunneling at Play in Pt/FeNC Hybrid Catalysts for Direct Methanol Fuel Cell Cathodes"
ACS Catalysis 10 (**2020**) 7475-7485
DOI : 10.1021/acscatal.0c01288

Kumar, V., El Massaoudi, M., Radi, S., Van Hecke, K., Rotaru, A. & **Garcia, Y.**
"Iron(II) coordination pyrazole complexes with aromatic sulfonate ligands : the role of ether"
New J. Chem. 44 (**2020**) 13902 - 13912.

Kumar, V., Fusaro, L., Aprile, C., Robeyns, K. & **Garcia, Y.**
"[2+2] photodimerization of sulfonate derivative of trans-cinnamic acid : Kinetics study using solid state 13C NMR, and hybrid material inclusion"
Cryst. Growth Des. 20 (**2020**) 7850-7861.

Lemoine, K., Moury, R., Lhoste, J., Hémon-Ribaud, A., Leblanc, M., **Grenèche, J.-M.**, Tarascon, J.-M. & Maisonneuve, V.
"Stabilization of a mixed iron vanadium based hexagonal tungsten bronze hydroxyfluoride HTB-(Fe0.55V0.45)F2.67(OH)0.33 as a positive electrode for lithium-ion batteries"
Dalton Trans. 49 (**2020**) 8186-8193
DOI : 10.1039/d0dt01310b

J. K. Li, L. Jiao, E. Wegener, L. L. Richard, E. S. Liu, A. Zitolo, **M. T. Sougrati**, S. Mukerjee, Z. P. Zhao, Y. Huang, F. Yang, S. C. Zhong, H. Xu, A. J. Kropf, F. Jaouen, D. J. Myers & Q. Y. Jia
"Evolution Pathway from Iron Compounds to Fe-1(II)-N-4 Sites through Gas-Phase Iron during Pyrolysis"
Journal of the American Chemical Society 142 (**2020**) 1417-1423
DOI : 10.1021/jacs.9b11197

J. K. Li, **M. T. Sougrati**, A. Zitolo, J. M. Ablett, I. C. Oguz, T. Mineva, I. Matanovic, P. Atanassov, Y. Huang, I. Zenyuk, A. Di Cicco, K. Kumar, L. Dubau, F. Maillard, G. Drazic & F. Jaouen
"Identification of durable and non-durable FeNx sites in Fe-N-C materials for proton exchange membrane fuel cells"
Nature Catalysis 4 (**2020**) 10-19
DOI : 10.1038/s41929-020-00545-2

Lizhong Zhao & **Jean-Marc Grenèche**
"On the magnetism of grain boundary phase and its contribution to the abnormal openness of recoil loops in hot-deformed magnets"
J. Phys. D : Appl. Phys. 53 (**2020**) 095002
DOI : 10.1088/1361-6463/ab58e1

Lizhong Zhao, Chengli Li, Xuefeng Zhang, Sateesh Bandaru, Kunpeng Su, Xiaolian Liu, Qing Zhou, Lingwei Li, **Jean-Marc Grenèche**, Jiayin Jin & Mi Yan
"Effects of Sm content on the phase structure, microstructure and magnetic properties of the SmxZr0.2(Fe0$8Co0.2)11.5Ti0.5 (x¼0.8) alloys"
Journal of Alloys and Compounds 828 (**2020**) 154428
DOI : 10.1016/j.jallcom.2020.154428

Lizhong Zhao, Huacun Tian, Xichun Zhong, Zhongwu Liu, **Jean-Marc Grenèche** & R.V. Ramanujan
"Influence of gadolinium and dysprosium substitution on magnetic properties and magnetocaloric effect of Fe78_xRExSi4Nb5B12Cu1 amorphous alloys"
Journal of Rare Earth 38 (**2020**) 1317e1321
DOI : 10.1016/j.jre.2020.02.005

Lu, C., Kim, TH., Bendix, J., **Abdelmoula, M.**, Ruby, C., Nielsen, U. G. & Brun Hansen, H.C.
"Stability of magnetic LDH composites used for phosphate recovery"
Journal of Colloid and Interface Science 580 (**2020**) 660-668
DOI : 10.1016/j.jcis.2020.07.020

F. Luo, A. R. Roy, L. Silvioli, D. A. Cullen, A. Zitolo, **M. T. Sougrati**, I. C. Oguz, T. Mineva, D. Teschner, S. Wagner, J. Wen, F. Dionigi, U. I. Kramm, J. Rossmeisl, F. Jaouen & P. Strasser
"P-block single-metal-site tin/nitrogen-doped carbon fuel cell cathode catalyst for oxygen reduction reaction"
Nature Materials 19 (**2020**) 1215
DOI : 10.1038/s41563-020-0717-5

Mari , I., `ijakovi  Vujii , N., Pustak, A., Goti , M., `tefani , G., **Jean-Marc Grenèche**, Dra~i , G. & Jurkin, T.
"Rheological, Microstructural and Thermal Properties of Magnetic Poly(Ethylene Oxide)/Iron Oxide Nanocomposite Hydrogels Synthesized Using a One-Step Gamma-Irradiation Method"
Nanomaterials 10 (**2020**) 1823 ;
DOI : 10.3390/nano10091823

Mosser-Ruck, R., Stermenich, J., Michau, N., Jodin-Caumon, M., Randi, A., **Abdelmoula, M.**, Barrès, O. & Cathelineau, M.
"Serpentinization and H2 production during an iron-clay interaction experiment at 90C under low CO2 pressure"
Applied Clay Science 191 (**2020**) 105609
DOI : 10.1016/j.clay.2020.105609

Odin, G. P., Belhadj, O., Vanmeert, F., Janssens, K., **Wattiaux, A.**, François, A. & Rouchon, V.
"Study of the influence of water and oxygen on the morphology and chemistry of pyritized lignite : Implications for the development of a preventive drying protocol."
Journal of Cultural Heritage 42 (**2020**) 117-130.
DOI : 10.1016/j.culher.2019.08.004

Ona-Nguema, G., Guerbois, D., Pallud, C., Brest, J., **Abdelmoula, M.** & Morin, G.
"Biogenic Fe(II-III) hydroxycarbonate green rust enhances nitrate removal and decreases ammonium selectivity during heterotrophic denitrification"
Minerals 10(9) (**2020**) 818
DOI : 10.3390/min10090818

M. Primbs, Y. Y. Sun, A. Roy, D. Malko, A. Mehmood, **M. T. Sougrati**, P. Y. Blanchard, G. Granozzi, T. Kosmala, G. Daniel, P. Atanassov, J. Sharman, C. Durante, A. Kucernak, D. Jones, F. Jaouen & P. Strasser
"Establishing reactivity descriptors for platinum group metal (PGM)-free Fe-N-C catalysts for PEM fuel cells"
Energy & Environmental Science 13 (**2020**) 2480-2500
DOI : 10.1039/d0ee01013h

Rabi, B., Essoumhi, A., Sajieddine, M., **Grenèche, J.-M.**, EK Hlil, Razouk, A. & Valente, M.A.
"Structural, magnetic and magnetocaloric study of Ni 0.5 Zn 0.5 Fe 2 O 4 spinel"
Applied Physics A 126 (**2020**) 1-11
DOI : 10.1007/s00339-020-3344-8

Rakotomalala Robinson, M., Coustel, R., **Abdelmoula, M.** & Mallet, M.
"As(V) and As(III) sequestration by starch functionalized magnetite nanoparticles : influence of the route onto the trapping efficiency"
Science and Technology of Advanced Materials 21(1) (**2020**) 524-539
DOI : 10.1080/14686996.2020.1782714

Sartori, K., Gailly, D., Bouillet, C., **Grenèche, J.-M.**, Dueñas-Ramirez, P., Begin-Colin, S., Choueikani, F. & Pichon, B. P.
"Increasing the size of Fe3-´O4 Nanoparticles by Performing a Multistep Seed-Mediated Growth Approach"
Cryst. Growth Des. 20(3) (**2020**) 1572-1582
DOI : 10.1021/acs.cgd.9b01300

R. Sibul, E. Kibena-Poldsepp, S. Ratso, M. Kook, **M. T. Sougrati**, M. Kaarik, M. Merisalu, J. Aruvali, P. Paiste, A. Treshchalov, J. Leis, V. Kisand, V. Sammelselg, S. Holdcroft, F. Jaouen & K. Tammeveski
"Iron- and Nitrogen-Doped Graphene-Based Catalysts for Fuel Cell Applications"
Chemelectrochem 7 (**2020**) 1739-1747
DOI : 10.1002/celc.202000011

Soulmi, N., Porras-Gutierrez, A. G., Rizzi, C., Sirieix-Plénet, J., Gaillon, L., Groult, H., Rollet, A.-L., Umut, E., **Duttine, M.**, Borkiewicz, O. J., Lebedev, O. I. & Dambournet, D.
"Sn-based alloys synthesized in an ionic liquid at room temperature : Cu6Sn5 as a case study."
ChemNanoMat 6(4) (**2020**) 639-647.
DOI : 10.1002/cnma.201900718

N. Soulmi, **M. T. Sougrati**, **L. Stievano**, A. G. P. Gutierrez, O. I. Lebedev, C. Rizzi, J. Sirieix-Plenet, L. Gaillon, H. Groult & D. Dambournet
"Lithium-driven conversion and alloying mechanisms in core -shell Sn/SnOx nanoparticles"
Solid State Sciences 101 (**2020**) 106153
DOI : 10.1016/j.solidstatesciences.2020.106153

Vallés-Garcia, C., Gkaniatsou, E., Santiago-Portillo, A., Gimenez-Marques, M., Alvaro, M., **Grenèche, J.-M.**, Steunou, N., Sicard, C., Navalon, S., Serre, C. & Garc1a, H.
"Design of stable mixed-metal MIL-101(Cr/Fe) materials with enhanced catalytic activity for the Prins reaction"
J. Mater. Chem. A 8 (**2020**) 17002
DOI : 10.1039/d0ta02991b

Villacorta, V., Augusto Barrero, C., Turrion, M.-B., Lafuente, F., **Grenèche, J.-M.** & Garc1a, K. E.
"Removal of As3+, As5+, Sb3+, and Hg2+ ions from aqueous solutions by pure and co-precipitated akaganeite nanoparticles : adsorption kinetics studies"
RSC Adv. 10 (**2020**) 42688
DOI : 10.1039/d0ra08075f

M. Worle, C. P. Guntlin, L. Gyr, **M. T. Sougrati**, C. H. Lambert, K. V. Kravchyk, R. Zenobi & M. V. Kovalenko
"Structural Evolution of Iron(III) Trifluoroacetate upon Thermal Decomposition : Chains, Layers, and Rings"
Chemistry of Materials 32 (**2020**) 2482-2488
DOI : 10.1021/acs.chemmater.9b05004

2022 2021 **2020**