Publications 2016

M. Talebi-Esfandarani, S. Rousselot, M. Gauthier, P. Sauriol, M. Duttine, A. Wattiaux, Y. Liu, A. X. Sun, G. Liang & M. Dollé
Control of the LiFePO4 electrochemical properties using low-cost iron precursor in a melt process.
Journal of Solid State Electrochemistry (**2016**) 20(12) : 3481-3490
DOI : 10.1007/s10008-016-3324-2

W. Ben Haj Othmen, B. Sieber, C. Cordier, H. Elhouichet, A. Addad, B. Gelloz, M. Moreau, A. Barras, M. Ferid & R. Boukherroub
Iron doping induced tunable band gap and tetravalent Fe iron in hydrothermally prepared SnO2 nanocrystals : application in photocatalysis.
Materials Research Bulletin (**2016**) 83 : 481-490.
DOI : 10.1016/j.materresbull.2016.06.041

V. Subramanian, V. V. Ordomsky, B. Legras, K. Cheng, C. Cordier, Petr A. Chernavskii & A. Y. Khodakov
Design of iron catalysts supported on carbon-silica composites with enhanced catalytic performance in high-temperature Fischer-Tropsch synthesis
Catalysis Science & Technology (**2016**) 6 : 4953-4961.
DOI : 10.1039/c6cy00060f

P.B. Fabritchnyi, M. Afanasov, E.M. Mezhuev, A. Wattiaux, M. Duttine, C. Labrugère
Effect of heterovalent substitutions in yttrium chromite on the hyperfine interactions of 119Sn4þ studied by Mössbauer spectroscopy
Journal of Solid State Chemistry (2016) 235 : 154-159.
DOI : 10.1016/j.jssc.2015.12.032

Y. Garcia, F. Renz, P. Gütlich
LIESST effect in Fe(II) 1,2,4-triazole chains
Curr. Inorg. Chem. 2016, 6, 4-9.
DOI : 10.2174/1877944105666150910195707

J. A. Wolny, Y. Garcia, I. Fauss, S. Rackwitz, K. Schlage, H.-C. Wille, V. Schuenemann
Nuclear inelastic scattering study of a dinuclear iron(II) complex showing a direct spin transition
Hyperfine Interactions 2016, 237, 65.
DOI : 10.1007/s10751-016-1242-4

M. M. Dîrtu, A. D. Naik, A. Rotaru, L. Spinu, D. Poelman, Y. Garcia
Fe(II) spin transition including an amino-ester 1,2,4-triazole derivative, operating at, below and above room temperature
Inorg. Chem. 2016, 55, 4278-4295.
DOI : 10.1021/acs.inorgchem.6b00015

Lesturgez S., Goglio G., Duttine M., Wattiaux A., Durand E., Hernandez J., Majimel J., Demourgues A.
Tuning the Mn and Fe valence states into new Ca0.7Mn2-xFexO4 (0 < x d 0.60) solid solution during reversible redox processes
Chemistry of Materials 2016, vol. 28, n° 14, p. 4935-4944.

DOI :10.1021/acs.chemmater.6b01135

Chevalier B., Duttine M., Wattiaux A.
Influence of hydrogenation and mechanical grinding on the structural and ferromagnetic properties of GdFeSi
Zeitschrift für Naturforschung, B : Chemical Sciences 2016, vol. 71, n° 5, p. 419-424.
DOI :10.1515/znb-2015-0225

Seitz G., Penin N., Decoux L., Wattiaux A., Duttine M., Gaudon M.
Near the ferric pseudobrookite composition (Fe2TiO5)
Inorganic Chemistry 2016, vol. 55, n° 5, p. 2499-2507.
DOI :10.1021/acs.inorgchem.5b02847

P.I. Arredondo S., C.A. Barrero, K.E. Garcia, J.M. Greneche
Enhancing the possibilities of 57Fe Mössbauer spectrometry to the study of chemical and physical properties of iron in medicines
Polyhedron 105 (2016) 27-34
DOI : 10.1016/j.poly.2015.12.001

Marina Lang, Emilie Delahaye, Dominique Foix, Dris Ihiawakrim, Ovidiu Ersen,Cedric Leuvrey, Jean-Marc Greneche, Guillaume Rogez, and Pierre Rabu
Pseudomorphic Transformation of Layered Simple Hydroxides into Prussian Blue Analogue Nanoplatelets
Eur. J. Inorg. Chem. 2016, 2030-2038
DOI : 10.1002/ejic.201501338

T. Gaudisson, R. Sayed-Hassan, N. Yaacoub, G. Franceschin, S. Nowak, J.-M. Grenèche, N. Menguy, Ph. Sainctavitd and S. Ammar
On the exact crystal structure of exchange-biased Fe3O4-CoO nanoaggregates produced by seed-mediated growth in polyol
Cryst. Eng. Comm., 2016, 18, 3799-3807-3799
DOI : 10.1039/c6ce00700g

Liron L. Israel, Emmanuel Lellouche, Jean-Marc Grene che, Moshe Bechor, Shulamit Michaeli and Jean-Paul Lellouche
Ultrasound-Mediated Surface Engineering of Theranostic Magnetic Nanoparticles : An Effective One-Pot Functionalization Process Using Mixed Polymers for siRNA Delivery
J. Nanomed Nanotechnol 2016, 7:3
DOI : 10.4172/2157-7439.1000385

Carlo Di Giovanni, A lvaro Reyes-Carmona, Anaïs Coursier, Sophie Nowak, Jean-Marc Grene che, He le ne Lecoq, Ludovic Mouton, Jacques Rozie re, Deborah Jones, Jennifer Peron, Marion Giraud, and Ce dric Tard
Low-Cost Nanostructured Iron Sulfide Electrocatalysts for PEM Water Electrolysis
ACS Catal. 2016, 6, 2626 2631
DOI : 10.1021/acscatal.5b02443

Marina Radoul, Limor Lewin, Batya Cohen, Roni Oren, Stanislav Popov, Geula Davidov, Moriel H. Vandsburger, Alon Harmelin, Ronit Bitton, Jean-Marc Greneche, Michal Neeman and Raz Zarivach
Genetic manipulation of iron biomineralization enhances MR relaxivity in a ferritin-M6A chimeric complex
Scientific Reports 2016, 6:26550
DOI : 10.1038/srep26550

L Z Zhao, Y Hong, D L Jiao, Z G Qiu, Q Zhou, M Hussain, Z W Liu, J M Greneche and G Q Zhang
Influences of intergranular structure on the magnetic properties of directly cast nanocrystalline NdFeCoTiNbBC alloys
J. Phys. D : Appl. Phys. 49 (2016) 185005
DOI : 10.1088/0022-3727/49/18/185005

Carla Albertina Demarchi, Tamiris Chahm, Bruna Aparecida Martins, Aline Debrassi, Natalia Nedelko, Anna Slawska-Waniewska, Piotr DBuzewski, Elzbieta Dynowska, Jean-Marc Greneche and Clovis Antonio Rodrigues
Adsorption of reactive red dye (RR-120) on nanoadsorbent O-carboxymethylchitosan/g-Fe2O3 : kinetic, equilibrium and factorial design studies
RSC Adv., 2016, 6, 35058-35070
DOI : 10.1039/c6ra04249j

M. Slimi, J. Saurina, J.J. Suñol, L. Escoda, M. Farid, J.M. Greneche, and M. Khitouni
Mössbauer and X-ray studies of mechanically alloyed Fe60Ni30Cr10 prepared by high energy ball milling
Advanced Powder Technology, 2016, 27 1618-1624.

Yassine El Mendili, Jean-François Bardeau, Nirina Randrianantoandro, Jean-Marc Greneche and Fabien Grasset
Structural behavior of laser-irradiated ³-Fe2O3 nanocrystals dispersed in porous silica matrix : ³-Fe2O3 to ±-Fe2O3 phase transition and formation of µ-Fe2O3
Science and Technology of Advanced Materials 17 (2016) 597-609
DOI : 10.1080/14686996.2016.1222494

Prakash Karipoth, Arun Thirumurugan, Srihari Velaga, Jean-Marc Greneche and R. Justin Joseyphus
Magnetic properties of FeCo alloy nanoparticles synthesized through instant chemical reduction
J. Appl. Phys. 120, 123906 (2016)
DOI : 10.1063/1.4962637

Fatima Sayed, Yvan Labaye, Rodaina Sayed Hassan, Fouad El Haj Hassan, Nader Yaacoub, Jean-Marc Greneche
Size and thickness effect on magnetic structures of maghemite hollow magnetic nanoparticles
J. Nanopart Res (2016) 18:279
DOI : 10.1007/s11051-016-3584-x

L Z Zhao, W Li, XH Wu, M Hussain, ZW Liu, GQ Zhang and JM Greneche
Inducing magnetic anisotropy and optimized microstructure in rapidly solidified Nd-Fe-B based magnets by thermal gradient, magnetic field and hot deformation
Mater. Res. Express 3 (2016) 105001
DOI : 10.1088/2053-1591/3/10/105001

P. E. Lippens, M. El Khalifi and M. Womes
Electronic structures of SnS and SnS2
Phys. Status Solidi B, 2016, Ahead of Print
DOI : 10.1002/pssb.201600194

M. El Khalifi and P.-E. Lippens
First-Principles Investigation of the 57Fe Mössbauer Parameters of LiFePO4 and FePO4
J. Phys. Chem. C, 2016, 120, 28375
DOI : 10.1021/acs.jpcc.6b07209

R. D. Bayliss, F. J. Berry, J. C. Cumby, C. Greaves, J.-C. Jumas and J. F. Marco
Synthetic versiliaite and apuanite : investigation by 57Fe Mössbauer spectroscopy
Hyperfine Interact., 2016, 237, 1

DOI : 10.1007/s10751-016-1308-3

S. Schmidt, D. Sheptyakov, J.-C. Jumas, M. Medarde, P. Benedek, P. Novak, S. Sallard and C. Villevieille
Lithium Iron Methylenediphosphonate : A Model Material for New Organic-Inorganic Hybrid Positive Electrode Materials for Li Ion Batteries
Chem. Mater., 2015, 27, 7889
DOI : 10.1021/acs.chemmater.5b02595

M. Mouyane, J.-C. Jumas, J. Olivier-Fourcade, S. Cassaignon, C. Jordy and P.-E. Lippens
One-pot synthesis of tin-borophosphate-carbon composites as anode materials for Li-ion batteries
J. Solid State Chem., 2016, 233, 52
DOI : 10.1016/j.jssc.2015.10.007

F. Strauss, G. Rousse, M. T. Sougrati, D. A. Dalla Corte, M. Courty, R. Dominko and J.-M. Tarascon
Synthesis, Structure, and Electrochemical Properties of Na3MB5O10 (M = Fe, Co) Containing M2+ in Tetrahedral Coordination
Inorg. Chem., 2016, 55, 12775
DOI : 10.1021/acs.inorgchem.6b02070

M. T. Sougrati, V. Goellner, A. K. Schuppert, L. Stievano and F. Jaouen
Probing active sites in iron-based catalysts for oxygen electro-reduction : A temperature-dependent 57Fe Mössbauer spectroscopy study
Catal. Today, 2016, 262, 110
DOI : 10.1016/j.cattod.2015.10.017

M. T. Sougrati, A. Darwiche, X. Liu, A. Mahmoud, R. P. Hermann, S. Jouen, L. Monconduit, R. Dronskowski and L. Stievano
Transition-Metal Carbodiimides as Molecular Negative Electrode Materials for Lithium- and Sodium-Ion Batteries with Excellent Cycling Properties
Angew. Chem., Int. Ed., 2016, 55, 5090
DOI : 110.1002/anie.201600098

S. Petit, S. T. A. G. Melissen, L. Duclaux, M. T. Sougrati, T. Le Bahers, P. Sautet, D. Dambournet, O. Borkiewicz, C. Laberty-Robert and O. Durupthy
How Should Iron and Titanium be Combined in Oxides to Improve Photoelectrochemical Properties ?
J. Phys. Chem. C, 2016, 120, 24521
DOI : 10.1021/acs.jpcc.6b05794

E. Panabiere, N. Emery, C. Lorthioir, M. T. Sougrati, J. C. Jumas, S. Bach, J. P. Pereira-Ramos, R. I. Smith and P. Willmann
Structural reinvestigation of Li3FeN2 : Evidence of cationic disorder through XRD, solid-state NMR and Mossbauer spectroscopy
J. Phys. Chem. Solids, 2016, 95, 37
DOI : 10.1016/j.jpcs.2016.03.016

B. Mirvaux, N. Recham, J. Miot, M. Courty, S. Bernard, O. Beyssac, C. Davoisne, M. Sougrati, A. Demortie're, F. Guyot, J. M. Tarascon and D. Larcher
Iron Phosphate/Bacteria Composites as Precursors for Textured Electrode Materials with Enhanced Electrochemical Properties
J. Electrochem. Soc., 2016, 163, A2139
DOI : 10.1149/2.0101610jes

J. Li, S. Ghoshal, W. Liang, M.-T. Sougrati, F. Jaouen, B. Halevi, S. McKinney, G. McCool, C. Ma, X. Yuan, Z.-F. Ma, S. Mukerjee and Q. Jia
Structural and mechanistic basis for the high activity of Fe-N-C catalysts toward oxygen reduction
Energy Environ. Sci., 2016, 9, 2418
DOI : 10.1039/c6ee01160h

K. Lasri, A. Mahmoud, I. Saadoune, M. T. Sougrati, L. Stievano, P.-E. Lippens, R. P. Hermann and H. Ehrenberg
Toward understanding the lithiation/delithiation process in Fe0.5TiOPO4/C electrode material for lithium-ion batteries
Sol. Energy Mater. Sol. Cells, 2016, 148, 11
DOI : 10.1016/j.solmat.2015.11.021

K. E. Johnson, M. T. Sougrati, L. Stievano, A. Darwiche, N. Dupre, C. P. Grey and L. Monconduit
Effects of Relaxation on Conversion Negative Electrode Materials for Li-Ion Batteries : A Study of TiSnSb Using 119Sn Mossbauer and 7Li MAS NMR Spectroscopies
Chem. Mater., 2016, Ahead of Print
DOI : 10.1021/acs.chemmater.6b01502

Q. Jia, N. Ramaswamy, U. Tylus, K. Strickland, J. Li, A. Serov, K. Artyushkova, P. Atanassov, J. Anibal, C. Gumeci, S. C. Barton, M.-T. Sougrati, F. Jaouen, B. Halevi and S. Mukerjee
Spectroscopic insights into the nature of active sites in iron-nitrogen-carbon electrocatalysts for oxygen reduction in acid
Nano Energy, 2016, 29, 65
DOI : 10.1016/j.nanoen.2016.03.025

R. Essehli, H. Ben Yahia, K. Maher, M. T. Sougrati, A. Abouimrane, J. B. Park, Y. K. Sun, M. A. Al-Maadeed and I. Belharouak
Unveiling the sodium intercalation properties in Na1.86(_)0.14Fe3(PO4)3
J. Power Sources, 2016, 324, 657
DOI : 10.1016/j.jpowsour.2016.05.125

S. Difi, I. Saadoune, M. T. Sougrati, R. Hakkou, K. Edstrom and P.-E. Lippens
Role of iron in Na1.5Fe0.5Ti1.5(PO4)3/C as electrode material for Na-ion batteries studied by operando Mössbauer spectroscopy
Hyperfine Interact., 2016, Ahead of Print
DOI : 10.1007/s10751-016-1292-7

C. Crouzet, N. Recham, F. Brunet, N. Findling, R. David and M.-T. Sougrati
A novel route for FePO4 olivine synthesis from sarcopside oxidation
Solid State Sci., 2016, 62, 29
DOI : 10.1016/j.solidstatesciences.2016.10.013

D. E. Conte, L. Di Carlo, M. T. Sougrati, B. Fraisse, L. Stievano and N. Pinna
Operando Mössbauer Spectroscopy Investigation of the Electrochemical Reaction with Lithium in Bronze-Type FeF3*0.33H2O
J. Phys. Chem. C, 2016, 120, 23933
DOI : 10.1021/acs.jpcc.6b06711

M. Ciabocco, M. Berrettoni, M. Giorgetti, M. T. Sougrati, N. Louvain and L. Stievano
Electron transfer and spin transition in metal-hexacyanoferrates driven by anatase TiO2 : electronic and structural order effects
New J. Chem., 2016, 40, 10406

DOI : 10.1039/c6nj02650h

C. H. Choi, C. Baldizzone, G. Polymeros, E. Pizzutilo, O. Kasian, A. K. Schuppert, N. Ranjbar Sahraie, M.-T. Sougrati, K. J. J. Mayrhofer and F. Jaouen
Minimizing Operando Demetallation of Fe-N-C Electrocatalysts in Acidic Medium
ACS Catal., 2016, 6, 3136
DOI : 10.1021/acscatal.6b00643

M. Brisbois, S. Caes, M. T. Sougrati, B. Vertruyen, A. Schrijnemakers, R. Cloots, N. Eshraghi, R. P. Hermann, A. Mahmoud and F. Boschini
Na2FePO4F/multi-walled carbon nanotubes for lithium-ion batteries : Operando Mössbauer study of spray-dried composites
Sol. Energy Mater. Sol. Cells, 2016, 148, 67
DOI : 10.1016/j.solmat.2015.09.005

P. Antitomaso, B. Fraisse, M. T. Sougrati, F. Morato-Lallemand, S. Biscaglia, D. Ayme-Perrot, P. Girard and L. Monconduit
Ultra-fast dry microwave preparation of SnSb used as negative electrode material for Li-ion batteries
J. Power Sources, 2016, 325, 346
DOI : 10.1016/j.jpowsour.2016.06.010

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