PUBLICATIONS

2024

A Bio-Inspired Dendritic MoOx Electrocatalyst for Efficient Electrochemical Nitrate Reduction to Ammonia
YZ Xu, DF Abbott, RN Dürr, TN Huan, V Mougel
Advanced Energy Materials 14, 2470160. DOI: 10.1002/aenm.202402294

Activation of Coq6p, a FAD Monooxygenase Involved in Coenzyme Q Biosynthesis, by Adrenodoxin Reductase/Ferredoxin
L. Gonzalez, S. Chau-Duy Tam Vo, B. Faivre, F. Pierrel, M. Fontecave, D. Hamdane, M. Lombard
ChemBioChem. 2024, 25, e202300738. DOI: 10.1002/cbic.202300738

Functional redundancy in tRNA dihydrouridylation
C. Sudol, L.M. Kilz, V. Marchand, Q. Thullier, V. Guérineau, C. Goyenvalle, B. Faivre, S. Toubdji,
M. Lombard, O. Jean-Jean, V. de Crécy-Lagard, M. Helm, Y. Motorin, D. Brégeon, D. Hamdane
Nucleic Acids Res, 2024, 52, 5880-5894. DOI: 10.1093/nar/gkae325

Structure-based insights into the mechanism of [4Fe-4S]-dependent sulfur insertase LarE
P. Zecchin, L. Pecqueur, J. Oltmanns, C. Velours, V. Schünemann, M. Fontecave, B. Golinelli-Pimpaneau
Protein Sci. 2024, 33:e4874. DOI: 10.1002/pro.4874

An organic O donor for biological hydroxylation reactions
K. Kazemzadeh Ferizhendi, P. Simon, L. Pelosi, E. Séchet, R. Arulanandam, M. Hajj Chehade, M. Rey, D. Onal, L. Flandrin, R. Chreim, B. Faivre, Chau-Duy-Tam Vo, R. Arias-Cartin, F. Barras, M. Fontecave, E. Bouveret, M. Lombard, F. Pierrel
Proc. Natl. Acad. Sci. 2024, 121, e2321242121. DOI: 10.1073/pnas.232124212

Photocatalytic CO_2 reduction by Ni-substituted polyoxometalates: structure-activity relationships and mechanistic insights
K. Talbia, F. Penas-Hidalgo, A. L. Robinson, P. Gotico, W. Leibl, P. Mialane, M. Gomez-Mingot, M. Fontecave, A. Solé-Daura, C. Mellot-Draznieks, A. Dolbecq
Applied Catal. B Environmental 2024, 345, 123681. DOI:10.1016/j.apcatb.2023.123681

Smart Electrode Surfaces by Electrolyte Immobilization for Electrocatalytic CO_2Conversion.
E. Vichou, Y. Adjez, Y. Li, M. Gomez-Mingot, Marc Fontecave, C. M. Sanchez-Sanchez
J. Am. Chem. Soc. 2024, 146, 2824-2834. DOI: 10.1021/jacs.3c13315

Low-Voltage Acidic CO2 Reduction Enabled by a Diaphragm-Based Electrolyzer
A. Perazio, Moritz W. Schreiber, C. E. Creissen, M. Fontecave
ChemElectroChem 2024, e202400045. DOI: 10.1002/celc.202400045

Promoting Selective CO2 Electroreduction to Formic Acid in Acidic Medium with Low Potassium Concentrations under High CO2 Pressure
F. Lhostis, Ngoc-Huan Tran, G. Rousse, S. Zanna, N. Menguy, M. Fontecave

ChemElectroChem 2024, 11, e202300799. DOI: 10.1002/celc.202300799

Zr-based MOF-545 Metal-Organic Framework Loaded with Highly Dispersed Small Size Ni Nanoparticles for CO2 Methanation
H. Chen, J.-B. Brubach, Ngoc-Huan Tran, A. L. Robinson, F. Ben Romdhane, M. Frégnaux, F. Penas-Hidalgo, A. Solé-Daura, P. Mialane, M. Fontecave, A. Dolbecq, C. Mellot-Draznieks
ACS Applied Materials & Interfaces 2024, 16, 12509–12520. DOI: 10.1021/acsami.3c18154

[4Fe-4S]-dependent enzymes in non-redox tRNA thiolation.
S. Gervason, S. Sen, M. Fontecave, B. Golinelli-Pimpaneau.
Biochim. Biophys. Acta. Molec. Cell Res. 2024, 1871, 119807. DOI:10.1016/j.bbamcr.2024.119807

Second Coordination Sphere Effects in an Earth-Abundant Monometallic Complex as Catalyst Dictate Highly Selective Photochemical Conversion of CO2 to HCOOH.
H. Agarwala, V. Artero, M. Fontecave
ChemRxiv 2024. DOI: 10.26434/chemrxiv-2024-zfvbq

Incorporation of isolated Ag atoms and Au nanoparticles in copper nitride for selective CO electroreduction to multicarbon alcohols.
Hong Phong Duong,a J. G. Rivera de la Cruz, D. Portehault, A. Zitolo, J. Louis, S. Zanna, Q. Arnoux, M. W. Schreiber, N. Menguy, Ngoc-Huan Tran, M. Fontecave
Nature Materials (revision)

Visible-Light-Driven Carbon Dioxide Reduction Catalyzed by Iron Schiff-Base Complexes
I. Cocosila, A. Solé-Daura, P. Gotico, J. Forte, Y. Li, M. Fontecave
ACS Catal. 2024, 14, 9618-9627. DOI: 10.1021/acscatal.4c01639

Light-Activated Artificial CO_2-Reductase: Structure and Activity
R.J. Labidi, B. Faivre, P. Carpentier, J. Perard, P. Gotico, Y. Li, M. Atta, M. Fontecave.
J. Am. Chem. Soc. 2024, 146, 28296-28305. DOI: 10.1021/jacs.4c08927

Experimental and computational aspects of molecular frustrated Lewis pairs for CO_2 hydrogenation: en route for heterogeneous systems?
R. K. Riddhi, F. Penas-Hildalgo, H. M. Chen, E. A. Quadrelli, J. Canivet, C. Mellot-Draznieks, A. Sole-Daura.
Chem. Soc. Rev. 2024, 53, 9874-9903. DOI : 10.1039/d3cs00267e

Tunable ratiometric temperature sensors based on a Zn-MOF material incorporating luminescent polyoxometalates and carbon dots
C. Viravaux, P. Mialane, A. Dolbec, N. Ramsahye, C. Mellot-Draznieks, H. Serier-Brault, O. Oms.
J. Mater. Chem. C, 2024, 12, 15535-15540. DOI: 10.1039/d4tc02596b

Cooperative Self-Assembly Process Involving Giant Toroidal Polyoxometalate as a Membrane Building Block in Nanoscale Vesicles

C. Falaise, S. Khlifi, P. Bauduin, P. Schmid, J. Degrouard, A. Leforestier, W. Shepard, J. Marrot, M. Haouas, D. Landy, C. Mellot-Draznieks, E. Cadot.
J. Am. Chem. Soc. 2024, 146, 1501-1511. DOI: 10.1021/jacs.3c11004

2023

Unravelling the Molecular Structure and Confining Environment of an Organometallic Catalyst Heterogenized within Amorphous Porous Polymers.
R. Jabbour, C.W. Ashling, T.C. Robinson, A.H. Khan, D. Wisser, P. Berruyer, A.C. Ghosh, A. Ranscht, D.A. Keen, E. Brunner, J. Canivet, TD Bennett, C. Mellot-Draznieks, A. Lesage, F.M. Wisser.
Angew. Chem. Int. Ed. 2023, 62, e202310878. DOI: 10.1002/anie.202310878.

Controlled Growth of a Photocatalytic Metal–Organic Framework on Conductive Plates by Mixing Direct Synthesis and Postsynthetic Modification Strategies. G. Genesio, B. Mortada, A.L. Robinson, J. Maynadié, M. Odorico, C. Mellot-Draznieks, M. Fontecave, M. Carboni, D. Meyer
ACS Appl. Energy Mater. 2023, 6, 9188–9195. DOI: 10.1021/acsaem.3c00447

Heterogenized Molecular Rhodium Phosphine Catalysts within Metal–Organic Frameworks for Alkene Hydroformylation.
P. Samanta, A. Solé-Daura, Remy Rajapaksha, Florian M. Wisser, F. Meunier, Y. Schuurman, C. Sassoye, C. Mellot-Draznieks, J. Canivet.
ACS Catal. 2023, 13, 4193–4204. DOI : 10.1021/acscatal.3c00398

ZIF-8 thin films by a vapor-phase process: limits to Growth.
V. Perrot, A. Roussey, A. Benayad, M. Veillerot, D. Mariolle, A. Solé-Daura, C. Mellot-Draznieks, F. Ricoul, J. Canivet, E. A. Quadrelli, V. Jousseaume.
Nanoscale. 2023, 15, 7115. DOI: 10.1039/d3nr00404j

Tuning Selectivity of Acidic Carbon Dioxide Electrolysis via Surface Modification.
E. Vichou, A. Perazio, Y. Adjez, M. Gomez-Mingot, M.W. Schreiber, C.M. Sánchez-Sánchez, M. Fontecave
Chem. Mater., 2023, 35, 7060–7068. DOI: 10.1021/acs.chemmater.3c01326

The thiolation of uridine 34 in tRNA, which controls protein translation, depends on a [4Fe-4S] cluster in the archeum Methanococcus maripaludis. O. Bimai, J. Zhou, M. Lénon, P. Legrand, J.-L. Ravanat, N. Touati, F. Barras, M. Fontecave, B. Golinelli-Pimpaneau.
Sci. Rep., 2023, 13, 5351. DOI: 10.1038/s41598-023-32423-9

TudS desulfidases recycle 4-thiouridine-5’-monophosphate at a catalytic [4Fe-4S] cluster.
J. Fuchs, R. Jamontas, M. H. Hoock, J. Oltmanns, B. Golinelli-Pimpaneau, V. Schünemann, A. J. Pierik, R. Meškys, A. Aučynaitė, M. Boll.
Comm. Biol. 2023, 6, 1092. DOI: 10.1038/s42003-023-05450-5

Integrative Approach to Probe Alternative Redox Mechanisms in RNA Modifications.
C. Bou-Nader, L. Pecqueur, V. de Crécy-Lagard, D. Hamdane
Acc Chem Res. 2023, 56, 3142-3152. DOI: 10.1021/acs.accounts.3c00418

Light-Driven Hydrogen Evolution Reaction Catalyzed by a Molybdenum-Copper Artificial Hydrogenase.
R.J. Labidi, B. Faivre, P. Carpentier, G. Veronesi, A. Solé-Daura, R. Bjornsson, C. Léger, P. Gotico, Y. Li, M. Atta, M. Fontecave.
J Am Chem Soc. 2023, 145, 13640-13649. DOI: 10.1021/jacs.3c01350.

Silver and Copper Nitride Cooperate for CO Electroreduction to Propanol.
H. Phong Duong, J.G. Rivera de la Cruz, N.H. Tran, J. Louis, S. Zanna, D. Portehault, A. Zitolo, M. Walls, D.V. Peron, M.W. Schreiber, N. Menguy, M. Fontecave.
Angew Chem Int Ed Engl. 2023, e202310788. DOI: 10.1002/anie.202310788.

Shigella IpaA mediates actin bundling through diffusible vinculin oligomers with activation imprint.
C. Valencia-Gallardo, D.I. Aguilar-Salvador, H. Khakzad, B. Cocom-Chan, C. Bou-Nader, C. Velours, Y. Zarrouk, C. Le Clainche, C. Malosse, D.B. Lima, N. Quenech'Du, B. Mazhar, S. Essid, M. Fontecave, A. Asnacios, J. Chamot-Rooke, L. Malmström, G. Tran Van Nhieu.
Cell Rep. 2023, 42, 112405. DOI: 10.1016/j.celrep.2023.112405.

Oxygen-induced chromophore degradation in the photoswitchable red fluorescent protein rsCherry.
T.Y.H. Bui, E. De Zitter, B. Moeyaert, L. Pecqueur, B.Y. Srinivasu, A. Economou, M. Fontecave, L. Van Meervelt, P. Dedecker, B. Pedre.
Int J Biol Macromol. 2023, 239, 124179. DOI: 10.1016/j.ijbiomac.2023.124179.

Identification of 2-Methylthio-methylenethio-N^6 -(cis-4-hydroxyisopentenyl)adenosine ($msms^2$ io^6 A_{37}) as a Novel Modification at Adenosine 37 of tRNAs from *Salmonella typhimurium.*
M. Libiad, T. Douki, M. Fontecave, M. Atta.
Chembiochem. 2023, 24: e202300019. doi: 10.1002/cbic.202300019.

Acidic Electroreduction of CO_2 to Multi-Carbon Products with CO_2 Recovery and Recycling from Carbonate
A. Perazio, C.E. Creissen, J.G. Rivera de la Cruz, M.W. Schreiber, M. Fontecave
ACS Energy Lett. 2023, 8, 2979–2985. DOI: 10.1021/acsenergylett.3c00901

Smoothing of wind energy: the limits of an electricity mix with a high proportion of intermittent renewable energies
D. Grand, M. Fontecave
Comptes Rendus Chimie, 2023, 26, 63-75. doi: 10.5802/crchim.232

2022

Heterogenization of molecular cobalt catalysts in robust metal-organic frameworks for efficient photocatalytic CO2 reduction
S. Parshamoni, C. Viravaux, M. Robert, C. Mellot-Draznieks, G. Chen, P. Mialane, A. Dolbecq, J. Bonin.

Catalysis Science & Technology 2022, 12, 5418-5424, doi: 10.1039/d2cy01147f

Unveiling the mechanism of the photocatalytic reduction of CO2 to formate promoted by porphyrinic Zr-based metal-organic frameworks
Y. Benseghir, A. Sole-Daura, D.R. Cairnie, A.L. Robinson, M. Duguet, P. Mialane, P. Gairola, M. Gomez-Mingot, M. Fontecave, D. Iovan, B. Bonnett, A.J. Morris, A. Dolbecq, C. Mellot-Draznieks
Journal of Materials Chemistry A 2022, 10, 18103-18115, doi: 10.1039/d2ta04164b

Highly Selective Copper-Based Catalysts for Electrochemical Conversion of Carbon Monoxide to Ethylene Using a Gas-Fed Flow Electrolyzer
H.P. Duong, Tran Ngoc Huan G. Rousse, S. Zanna, M.W. Schreiber, M. Fontecave
ACS Catalysis 2022, 12, 10285-10293, doi: 10.1021/acscatal.2c03143

A soluble metabolon synthesizes the isoprenoid lipid ubiquinone in *Escherichia coli*
M. Hajj Chehade, C.D. Fyfe, L. Loiseau, B. Rascalou, K. Kazemzadeh, C.-D.-T. Vo, L. Ciccone, L. Aussel, M. Fontecave, F. Barras, M. Lombard, F. Pierrel, L. Pelosi
Biochem. Biophys. Act. 2022, 1863, 37. doi: 10.1016/j.bbabio.2022.148707

Spain-France Special Collection: Current Trends in Electrochemistry
I. Sirés, M.A. Rodrigo, M. Gomez-Mingot, E.P.L. Roberts
ChemElectroChem, 2022, 9, e202200691, doi:10.1002/celc.202200691

Evolutionary Diversity of Dus2 Enzymes Reveals Novel Structural and Functional Features among Members of the RNA Dihydrouridine Synthases Family
M. Lombard, C.J. Reed, L. Pecqueur, B. Faivre, S. Toubdji, C. Sudol, D. Brégeon, V. de Crécy-Lagard, D. Hamdane
Biomolecules. 2022, 12, 1760. doi: 10.3390/biom12121760

A miniature airlock system to aid the cryo-cooling of protein crystals grown under anoxic conditions.
P. van der Linden, S. Engilberge, M. Atta, P. Carpentier.
J. Appl. Cryst. 2022, 55, 1212-1218. doi : 10.1107/S1600576722007580

Selective Ethylene Production from CO_2 and CO Reduction via Engineering Membrane Electrode Assembly with Porous Dendritic Copper Oxide
Tran Ngoc Huan, H.P. Duong, G. Rousse, S. Zanna, M.W. Schreiber, M. Fontecave
ACS Appl Mater Interfaces. 2022, 14, 31933-31941. doi: 10.1021/ acsami.2c0606831933

Formate Dehydrogenase Mimics as Catalysts for Carbon Dioxide Reduction
T. Fogeron, Y. Li, M. Fontecave
Molecules. 2022, 27, 5989. doi: 10.3390/molecules27185989

CO_2 Electroreduction in Water with a Heterogenized C-Substituted Nickel Cyclam Catalyst
S. Pugliese, Tran Ngoc Huan, A. Solé-Daura, Y. Li, J.G. Rivera de la Cruz, J. Forte, S. Zanna, A. Krief, B.L. Su, M. Fontecave
Inorg Chem. 2022, 61, 15841-15852. doi: 10.1021/acs.inorgchem.2c01645

Electrocatalytic Conversion of CO_2 to Formate at Low Overpotential by Electrolyte Engineering in Model Molecular Catalysis
E. Vichou, A. Solé-Daura, C. Mellot-Draznieks, Y. Li, M. Gomez-Mingot, M. Fontecave, C.M. Sánchez-Sánchez
ChemSusChem. 2022, 15, e202201566. doi: 10.1002/cssc.202201566

Structural Insights into the Dimeric Form of Bacillus subtilis RNase Y Using NMR and AlphaFold
N. Morellet, P. Hardouin, N. Assrir, C. van Heijenoort, B. Golinelli-Pimpaneau
Biomolecules, 2022, 12, 1798, doi: 10.3390/biom12121798

A subclass of archaeal U8-tRNA sulfurases requires a [4Fe-4S] cluster for catalysis
N. He, J. Zhou, O. Bimai, J. Oltmanns, J.-L. Ravanat, C. Velours, V. Schünemann, M. Fontecave, B. Golinelli-Pimpaneau
Nucleic Acids Res. 2022, 50, 12969-12978, doi: 10.1093/nar/gkac1156

Gas diffusion electrodes, reactor designs and key metrics of low-temperature CO2 electrolysers
D. Wakerley, S. Lamaison, J. Wicks, A. Clemens, J. Feaster, D. Corral, M. Fontecave, E. Duoss, S. Baker, E. Sargent, T. F. Jaramillo, C. Hahn
Nature Energy 2022, 7, 130-143, doi: 10.1038/s41560-021-00973-9

Understanding the Photocatalytic Reduction of CO_2 with Heterometallic Molybdenum(V)-Phosphate Polyoxometalates in Aqueous Media
Y. Benseghir, A. Solé-Daura, P. Mialane, J. Marrot, L. Dalecky, S. Béchu, M. Frégnaux, M. Gomez-Mingot, M. Fontecave, C. Mellot-Drazniek, A. Dolbecq
ACS Catal. 2022, 12, 453-464, doi: 10.1021/acscatal.1c04530

From Nickel Foam to Highly Active NiFe-based Oxygen Evolution Catalysts
A. Peugeot, C. E. Creissen, M. W. Schreiber, M. Fontecave
ChemElectroChem 2022, 9, e202200148, doi: 10.1002/celc.202200148

Prediction of the Iron–Sulfur Binding Sites in Proteins Using the Highly Accurate Three-Dimensional Models Calculated by AlphaFold and RoseTTAFold.
B. Golinelli-Pimpaneau
Inorganics 2022*, 10*, 2, doi: 10.3390/inorganics10010002

Determination of the absolute molar mass of [Fe-S]-containing proteins using Size Exclusion Chromatography-Multi Angle Light Scattering (SEC-MALS)
C. Velours, J. Zhou, P. Zecchin, N. He, M. Salameh, M.-P. Golinelli-Cohen, B. Golinelli-Pimpaneau.
Biomolecules, 2022, 12, 270, doi: 10.3390/biom12020270

tRNA-monooxygenase enzyme MiaE
P. Carpentier, M. Fontecave, M. Atta
Dans *Encyclopedia of Inorganic and Bioinorganic Chemistry*, 2022, John Wiley & Sons, Ltd. doi: 10.1002/9781119951438.eibc2819

Heterogenised molecular catalysts for sustainable electrochemical CO_2 reduction
D. Grammatico, A.J. Bagnall, L. Riccardi, M. Fontecave, B.L. Su, L. Billon

Angew Chem Int Ed Engl. 2022, 61, e202206399, doi: 10.1002/anie.202206399

Molecular Inhibition for Selective CO2 Conversion
C. E. Creissen, J. G. Rivera de la Cruz, D. Karapinar, D. Taverna, M.W. Schreiber, M. Fontecave
Angew Chem Int Ed Engl 2022, 61, e202206279.doi: 10.1002/anie.202206279

Keeping Sight of Copper in Single-Atom Catalysts for Electrochemical CO_2 Reduction
C. E. Creissen, M. Fontecave
Nature Commun. 2022, 13, 2280, doi: 10.1038/s41467-022-30027-x

Electrochemical CO2 reduction on Cu single atom catalyst and Cu nanoclusters: an ab initio approach
J. G. Rivera de la Cruz, M. Fontecave
Phys. Chem. Chem. Phys. 2022, 24, 15767-15775, doi: 10.1039/d2cp00887d

Dihydrouridine in the transcriptome: New life for this ancient RNA chemical modification
D. Brégeon, L. Pecqueur, S. Toubdji, C. Sudol, M. Lombard, M. Fontecave, V. De Crécy-Lagarde, Y. Motorin, M. Helm, D. Hamdane
ACS Chemical Biology 2022, 17, 1638-1657, doi: 10.1021/acschembio.2c00307

Electrocatalytic metal hydride generation using CPET mediators
S. Dey, F. Masero, E. Brack, M. Fontecave, V. Mougel
Nature 2022, 607, 499-506. doi: 10.1038/s41586-022-04874-z

TtuA and TudS, two [4Fe-4S]-dependent enzymes catalyzing non-redox sulfuration or desulfuration reactions
J. Zhou, O. Bimai, S. Arragain, L. Pecqueur, B. Golinelli-Pimpaneau
Dans *Encyclopedia of Inorganic and Bioinorganic Chemistry* 2022, John Wiley & Sons, doi: 10.1002/9781119951438.eibc2811

Origin of the Boosting Effect of Polyoxometalates in the Photo-catalysis: the case of CO_2 Reduction by a Rh-Containing Metal-Organic Framework
A. Solé-Daura, Y. Benséghir, M.-H. Ha-Thi, M. Fontecave, P. Mialane, A. Dolbecq, C. Mellot-Draznieks.
ACS Catalysis, 2022, 12, 9244–9255, doi:10.1021/acscatal.2c02088

Designing a Zn-Ag Catalyst Matrix and Electrolyzer System for CO_2 Conversion to CO and Beyond
S. Lamaison, D. Wakerley, F. Kracke, T. Moore, L. Zhou, D.U. Lee, L. Wang, M.A. Hubert, J.E. Aviles Acosta, J.M. Gregoire, E.B. Duoss, S. Baker, V.A. Beck, A.M. Spormann, M. Fontecave, C. Hahn, T.F. Jaramillo
Adv Mater. 2022, 34, e2103963, doi: 10.1002/adma.202103963

2021

Ultrafast dynamics of fully reduced flavin in catalytic structures of thymidylate synthase ThyX
N. Dozova, F. Lacombat, M. Lombard, D. Hamdane, P. Plaza

Phys. Chem. Chem. Phys. 2021, 23, 22692-22702, doi: 10.1039/d1cp03379d

Artificial maturation of [FeFe] hydrogenase in a redox polymer film
C. Felbek, S. Hardt, C. Papini, D. Pramanik, V. Artero, M. Fontecave, V. Fourmond, N. Plumeré, C. Léger
Chem. Commun. 2021, 57, 1750-1753, doi: 10.1039/d0cc08168j

Bimetallic Effects on ZnCu Electrocatalysts Enhance Activity and Selectivity for the conversion of CO_2 to CO
L. Wang, H. Peng, S. Lamaison, Z. Qi, D. M. Koshy, M. Burke Stevens, D. Wakerley, L. King, L. Zhou, Y. Lai, J. Gregoire, M. Fontecave, F. Abild-Pedersen, T. F. Jaramillo, C. Hahn
Chem Catalysis 2021, 1, 663-680, doi: 10.1016/j.checat.2021.05.006

Electrochemical CO_2 Reduction to Ethanol with Copper-Based Catalysts
D. Karapinar, C. E. Creissen, J. G. Riviera de la Cruz, M. W. Schreiber, M. Fontecave
ACS Energy Letters 2021, 6, 694-706, doi: 10.1021/acsenergylett.0c02610

Iron sulfur biology invades tRNA modification: the case of U34 sulfuration
J. Zhou, M. Lénon, N. Touati, J.-L.Ravanat, C. Velours, M. Fontecave, F. Barras, B. Golinelli-Pimpaneau
Nucl. Acids Res. 2021, 49, 3997–4007, doi: 10.1093/nar/gkab138

Benchmarking of Oxygen Evolution Catalysts on Porous Nickel Supports: Towards Optimised Anode Materials
A. Peugeot, C. E. Creissen, D. Karapinar, H. Ngoc Tran, M. Schreiber, M. Fontecave
Joule 2021, 5, 1281-1300, doi: 10.1016/j.joule.2021.03.022

De novo crystal structure determination of double stranded RNA binding domain using only the sulfur anomalous diffraction in SAD phasing
B. Guimaraes, B. Golinelli-Pimpaneau
Cur. Res. Struct. Biol., 2021, 3, 112-120, doi: 10.1016/j.crstbi.2021.05.002

Coupling electrocatalytic CO_2 reduction with thermocatalysis enables the formation of a lactone monomer
L. Ponsard, E. Nicolas, H. Ngoc Tran, S. Lamaison, D. Wakerley, T. Cantat, M. Fontecave
ChemSusChem 2021, 14, 2198–2204, doi: 10.1002/cssc.202100459

Designing a Zn-Ag catalyst matrix and electrolyser system for CO_2 to CO and beyond
S. Lamaison, D. Wakerley, F. Kracke, T. Moore, L. Zhou, D. Lee, L. Wang, H. McKenzie, J. E. Aviles Acosta, J. M. Gregoire, E. B. Duoss, S. Baker, V. Beck, A. Spormann, M. Fontecave, C. Hahn, T. F. Jaramillo
Advanced Materials 2021, 34, 2103963, doi: 10.1002/adma.202103963

Dihydrouridine synthesis in tRNAs under reductive evolution in Molliculites
B. Faivre, M. Lombard, S. Fakroun, C.-D.-T. Vo, C. Goyendalle, V. Guérineau, L. Pecqueur, M. Fontecave, V. de Crecy-Lagarde, D. Bregeon, D. Hamdane
RNA Biol. 2021, 18, 2278–2289, doi: 10.1080/15476286.2021.1899653

An enzymatic activation of formaldehyde for nucleotide methylation
C. Bou-Nader, F. W. Stull, L. Pecqueur, P. Simon, V. Guérineau, A. Royant, M. Fontecave, M. Lombard, B. A. Palfey, D. Hamdane
Nature Commun. 2021, 12, 4542, doi:10.1038/s41467-021-24756-8

Advancing the Anode Compartment for Energy Efficient CO2 Reduction at Neutral pH
A. Peugeot, C. E. Creissen, M. W. Schreiber, M. Fontecave
ChemElectroChem 2021, 8, 2726-2736, doi:10.1002/celc.202100742

Structural evidence for the bleaching caused by oxygen in rsCherry
T.Y.H Bui, B. Moeyaert, L. Pecqueur, B. Srinivasu, A. Economou, M. Fontecave, P. Dedecker, L. Van Meervelt
Acta Crystallographica A 2021, 77, C243
Carbon dioxide Reduction: a Bioinspired Catalysis Approach
Y. Li, M. Gomez-Mingot, T. Fogeron, M. Fontecave
Acc. Chem. Res. 2021, 54, 4250−4261, doi: 10.1021/acs.accounts.1c00461

Les scénarios énergétiques à l'épreuve du stockage des énergies intermittentes
M. Fontecave, D. Grand
C.R. Acad. Sci. 2021, 24, 331-350, doi: 10.5802/crchim.115

Heterogenization of a Molecular Ni Catalyst within a Porous Macroligand for the Direct C-H Arylation of Heteroarenes
Y. Mohr, M. Alves-Favaro, R. Rajapaksha, G. Hisler, A. Ranscht, P. Samanta, C. Lorentz, M. Duguet, C. Mellot-Draznieks, A.E. Quadrelli, F. M. Wisser, J. Canivet
ACS Catal. 2021, 11, 3507-3515, doi: 10.1021/acscatal.1c00209

Heterogenisation of polyoxometalates and other metal-based complexes in metal-organic frameworks: from synthesis to characterisation and applications in catalysis.
P. Mialane, C. Mellot-Draznieks, P. Gairola, M. Duguet, Y. Benseghir, O. Oms, A. Dolbecq.
Chem. Soc. Rev. 2021, 50, 6152-6220, doi: 10.1039/d0cs00323a

Temperature sensors based on europium polyoxometalate and mesoporous terbium metal-organic framework
C. Viravaux, O. Oms, A. Dolbecq, E. Nassar, L. Busson, C. Mellot-Draznieks, R. Dessapt, H. Serier-Brault, P. Mialane
J. Mater. Chem., 2021, 9 (26) 8323-8328, doi: 10.1039/d1tc01532j

Impact of organic templates on the selective formation of zeolite oligomers.
M. Ciantar, T. T. Trinh, C. Michel, P. Sautet, C. Mellot-Draznieks, C. Nieto-Draghi.
Angew. Chem. Int. Ed. 2021, 60 (13) 7111-7116, doi: 10.1002/anie.202014027

[Fe-Fe]-Hydrogenases: structure, mechanism, and metallic cluster biosynthesis
M. Atta, M. Fontecave
Dans "Comprehensive Inorganic Chemistry III", Elsevier, 2021

Structural evidence for a [4Fe-5S] intermediate in the non-redox desulfuration of thiouracil

Zhou J, Pecqueur L, Aučynaitė A, Fuchs J, Rutkienė R, Vaitekūnas J, Meškys R, Boll M, Fontecave M, Urbonavičius J, Golinelli-Pimpaneau B.
Angew Chem Int Ed Engl. 2021, 60, 424-431, doi: 10.1002/anie.202011211

2020

Effect of Ligands on HP-Induced Unfolding and Oligomerization of beta-Lactoglobulin
S.Minic, B. Annighofer, A. Helary, D. Hamdane, G.H.B. Hoa, C. Loupiac, A. Brulet, S. Combet
Biophysical Journal 2020, 119, 2262-2274, doi: 10.1016/j.bpj.2020.10.019

Solar-Driven Electrochemical CO_2 Reduction with Heterogeneous Catalysts
C. E. Creissen, M. Fontecave
Adv. En. Mater. 2020, 11, 2002652, doi:10.1002/aenm.202002652

Imidazolium and Pyrrolidinium Based Ionic Liquids as Co-catalysts for CO_2 Electroreduction in Model Molecular Electrocatalysis
E. Vichou, Y. Li, M. Gomez-Mingot, M. Fontecave, C.M. Sanchez-Sanchez
The Journal of Physical Chemistry C, 2020, 124, 23764–23772, doi: 10.1021/acs.jpcc.0c07556

Immobilization of a molecular Re complex on MOF-derived hierarchical porous carbon for CO_2 electroreduction in water/ionic liquid electrolyte
D. Grammatico, Tran NGoc Huan, Y. Li, B.-L. Su, M. Fontecave
ChemSusChem 2020, 13, 6418-6425, doi: 10.1002/cssc.202002014
A Single Molecular Stoichiometric P-Source for Phase-Selective Synthesis of Crystalline and Amorphous Iron Phosphide Nanocatalysts
F. D'Accriscio, E. Schrader, C. Sassoye, M. Selmane, R.F. André, S. Lamaison, D. Wakerley, M. Fontecave, V. Mougel, G. Le Corre, H. Grützmacher, C. Sanchez, S. Carenco
ChemNanoMat 2020, 6, 1208 –1219, doi: 10.1002/cnma.202000198

Co-immobilization of a Rh Catalyst and a Keggin Polyoxometalate in the UiO-67 Zr-Based Metal-Organic Framework: In Depth Structural Characterization and Photocatalytic Properties for CO_2 Reduction
Benseghir Y, Lemarchand A, Duguet M, Mialane P, Gomez-Mingot M, Roch-Marchal C, Pino T, Ha-Thi MH, Haouas M, Fontecave M, Dolbecq A, Sassoye C, Mellot-Draznieks C
J Am Chem Soc. 2020, 142, 9428-9438, doi: 10.1021/jacs.0c02425

The O_2-independent pathway of ubiquinone biosynthesis is essential for denitrification in *Pseudomonas aeruginosa*
C.-D.-T. Vo, J. Michaud, S. Elsen, B. Faivre, E. Bouveret, F. Barras, M. Fontecave, F. Pierrel, M. Lombard, L. Pelosi
J Biol Chem. 2020, 295, 9021-9032, doi: 10.1074/jbc.RA120.013748

Mechanistic Understanding of CO_2 Reduction Reaction (CO2RR) Towards Multicarbon Products by Heterogeneous Copper-Based Catalysts
T. K. Todorova, M. Schreiber, M. Fontecave
ACS Catalysis 2020, 10, 1754-1768, doi: 10.1021/acscatal.9b04746

Electroreduction of CO_2 to Formate with Low Overpotential using Cobalt Pyridine Thiolate Complexes
S. Dey S, T.K. Todorova, M. Fontecave, V. Mougel
Angew Chem Int Ed Engl. 2020, 59, 15726-15733, doi: 10.1002/anie.202006269

Structure-directing role of immobilized polyoxometalates in the synthesis of porphyrinic Zr-based metal-organic frameworks
M. Duguet, A. Lemarchand, Y. Benseghir, P. Mialane, M. Gomez-Mingot, C. Roch-Marchal, M. Haouas, M. Fontecave, C. Mellot-Draznieks, C. Sassoye, A. Dolbecq
Chem Commun (Camb), 2020, 56, 10143-10146, doi: 10.1039/d0cc04283h

Structural, biochemical and functional analyses of tRNA-monooxygenase enzyme MiaE from Pseudomonas putida provide insights into tRNA/MiaE interaction
P. Carpentier, C. Leprêtre, C. Basset, T. Douki, S. Torelli, V. Duarte, D. Hamdane, M. Fontecave, M. Atta
Nucleic Acids Res. 2020, 48, 9918-9930, doi: 10.1093/nar/gkaa667

A bioinspired molybdenum-copper molecular catalyst for CO_2 electroreduction
A. Mouchfiq, T.K. Todorova, S. Dey, M. Fontecave, V. Mougel
Chem Sci. 2020, 11, 5503-5510, doi: 10.1039/d0sc01045f

A heterogeneous recyclable Rhodium-based catalyst for the reduction of pyridine dinucleotides and flavins
Y. Deng, M. Odziomek, C. Sanchez, O. Back, V. Mougel, M. Fontecave
ChemCatChem 2020, 12, 1236-1243, doi: 10.1002/cctc.201901726

Carbon Nanotube supported Copper Polyphthalocyanine for Efficient and Selective Electrocatalytic CO_2 Reduction to CO
D. Karapinar, A. Zitolo, Tran NGoc Huan, S. Zanna, D. Taverna, L.H.G. Tizei, D. Giaume, P. Marcus, V. Mougel, M. Fontecave
ChemSusChem 2020, 13, 173-179, doi: 10.1002/cssc.201902859
High Current Density CO_2-to-CO Electroreduction on Ag-Alloyed Zn dendrites at Elevated Pressure
S. Lamaison, D.Wakerley, J. Blanchard, D. Montero, G. Rousse, D. Mercier, P.Marcus, D.Taverna[D. Giaume, V. Mougel, M. Fontecave
Joule 2020, 4, 395-406, doi: 10.1016/j.joule.2019.11.014

Structure and functional characterization of 4-hydroxyphenylacetate 3-hydroxylase from *Escherichia coli*
Y. Deng, B. Faivre, O. Back, M. Lombard, L. Pecqueur, M. Fontecave
ChemBioChem, 2020, 21, 163-170, doi: 10.1002/cbic.201900277

Molecular porous photosystems tailored for long-term photocatalytic Co_2 Reduction.
F. M. Wisser, M. Duguet, Q. Perrinet, A. C. Ghosh, M. Alves-Favaro, Y. Mohr, C. Lorentz, E. A. Quadrelli, R. Palkovits, D. Farrusseng, C. Mellot-Draznieks, V. De Waele, J. M. Canivet
Angew. Chem. Int. Ed., 2020, 59, 5116-5122, doi: 10.1002/anie.201912883

Reductive Evolution and Diversification of C5-Uracil Methylation in the Nucleic Acids of Mollicutes

P. Sirand-Pugnet, D. Brégeon, L. Béven, C. Goyenvalle, A. Blanchard, S. Rose, H. Grosjean, S. Douthwaite, D. Hamdane, V. Crécy-Lagard
Biomolecules 2020, 10, 587, doi: 10.3390/biom10040587

Structure-based mechanistic insights into catalysis by tRNA thiolation enzymes
O. Bimai, S.Arragain, B. Golinelli-Pimpaneau
Curr Opin Struct Biol 2020, 65, 69-78, doi: 10.1016/j.sbi.2020.06.002

Functionalization of Carbon Nanotubes with Nickel Cyclam for the Electrochemical Reduction of CO_2
S. Pugliese, Tran Ngoc Huan, J. Forte, D. Grammatico, S. Zanna, B.L. Su, Y. Li, M. Fontecave
ChemSusChem 2020, 13, 6449-6456, doi: 10.1002/cssc.202002092

2019

Nickel complexes based on molybdopterin-like dithiolenes: catalysts for CO_2 electroreduction
T. Fogeron, P. Retailleau, M. Gomez-Mingot, Y. Li, M. Fontecave
Organometallics 2019, 38, 1344-1350, doi: 10.1021/acs.organomet.8b00655

A soluble metabolon synthesizes the isoprenoid lipid Ubiquinone
M. Hajj Chehade, L. Pelosi, C. D. Fyfe, L. Loiseau, B. Rascalou, S. Brugière, K. Kazemzadeh, Chau-Duy-Tam Vo, L. Aussel, Y. Couté, M. Fontecave, F. Barras, M. Lombard, F. Pierrel
Cell Chem. Biol. 2019, 26, 482-492, doi: 10.1016/j.chembiol.2018.12.001

Zn-Cu alloy nanofoams as efficient catalysts for the reduction of CO_2 to syngas mixtures with a potential-independent H_2:CO ratio
S. Lamaison, D. Wakerley, D. Montero, G. Rousse, D. Taverna, D. Giaume, Tran NGoc Huan, M. Fontecave, V. Mougel
ChemSusChem 2019, 12, 511-517, doi: 10.1002/cssc.201802287

Controlling Hydrogen Evolution during CO_2 Photoreduction to Formic Acid using $[Rh(bpy)(Cp^*)Cl]^+$ Catalysts: A Structure-Activity Study
T. K. Todorova, Tran Ngoc Huan, X. Wang, H. Agarwala, M. Fontecave
Inorg. Chem. 2019, 58, 6893-6903, doi: 10.1021/acs.inorgchem.9b00371

Shigella IpaA binding to talin stimulates filopodial capture and cell adhesion
C. Valencia-Gallardo, C. Bou-Nader, D.I. Aguilar-Salvador, N. Carayol, N. Quenech'Du, L. Pecqueur, H. Park, M. Fontecave, T. Izard, G. Tran Van Nhieu
Cell Reports 2019, 26, 921-932, doi: 10.1016/j.celrep.2018.12.091

Molecular basis for transfer RNA recognition by the double-stranded RNA-binding domain of human dihydrouridine synthase 2
C. Bou-Nader, P. Barraud, L. Pecqueur, J. Pérez, C. Velours, M. Fontecave, C. Tisné and D. Hamdane
Nucl. Acid Res. 2019, 47, 3117-3126, doi: 10.1093/nar/gky1302

Low-cost high efficiency system for solar-driven conversion of CO_2 to hydrocarbons
Tran Ngoc Huan, D. Alves Dalla Corte, S. Lamaison, L. Lutz, N. Menguy, M. Foldyna, S.-H. Turren-Cruz, A. Hagfeldt, F. Bella, M. Fontecave, V. Mougel.
Proc. Natl. Acad. Sci. 2019, 116, 9735-9740, doi: 10.1073/pnas.1815412116

Electroreduction of CO_2 on Single-Site Copper-Nitrogen-Doped Carbon Material: Selective Formation of Ethanol and Reversible Restructuration of the Metal Sites
D. Karapinar, Tran NGoc Huan, N. Ranjbar Sahraie, D. W. Wakerley, N. Touati, S. Zanna, D. Taverna, L.H. Galvão Tizei, A. Zitolo, F. Jaouen, V. Mougel, M. Fontecave
Angew. Chem. 2019, 58, 15098-15103, doi: 10.1002/anie.201907994

Physiologically relevant reconstitution of iron-sulfur cluster biosynthesis uncovers persulfide-processing functions of ferredoxin-2 and frataxin
S. Gervason, D. Larkem, A. Ben Mansour, T. Botzanowski, C.S. Müller, L. Pecqueur, A. Delaunay-Moisan, G. Le Pavec, O. Brun, J. Agramunt, A. Grandas, M. Fontecave, V. Schüneman, S. Cianférani, C. Sizun, M. Toledano, B. D'Autréaux.
Nature Commun. 2019, 10, 3566, doi: 10.1038/s41467-019-11470-9

Bio-inspired hydrophobicity promotes CO_2 reduction on a Cu surface
D. Wakerley, S. Lamaison, F. Ozanam, N. Menguy, D. Mercier, P. Marcus, M. Fontecave, V. Mougel
Nature Materials 2019, 18, 1222-1227, doi: 10.1038/s41563-019-0445-x

Conformational stability adaptation of a double-stranded RNA binding domain to transfer RNA ligand
C. Bou-Nader, L. Pecqueur, P. Barraud, M. Fontecave, C. Tisné, S. Sacquin-Mora, D. Hamdane
Biochemistry 2019, 58, 2463-2473, doi: 10.1021/acs.biochem.9b00111

A bioinspired artificial [FeFe]-hydrogenase with a synthetic H-cluster
C. Papini, C. Sommer, L. Pecqueur, D. Pramanik, S. Roy, E. J. Reijerse, F. Wittkamp, U-P. Apfel, V. Artero, W. Lubitz, M. Fontecave
ACS Catal. 2019, 9, 4495-4501, doi: 10.1021/acscatal.9b00540

Ubiquinone biosynthesis over the entire O_2 range: characterization of a conserved O_2-independent pathway
L. Pelosi, C.-D.-T. Vo, S. Abby, L. Loiseau, B. Rascalou, M. Hajj Chehade, B. Faivre, M. Gousse, C. Chenal, N. Touati, Laurent Binet, David Cornu, C. D. Fyfe, M. Fontecave, F. Barras, M. Lombard, F. Pierrel
mBio 2019, 10, e01319-19, doi: 10.1128/mBio.01319-19

An unprecedented $\{Ni_{14}SiW_9\}$ hybrid polyoxometalate with high photocatalytic hydrogen evolution activity
G. Paille, A. Boulmier, A. Bensaid, Minh-Huong Ha-Thi, Thu-Trang Tran, T. Pino, J. Marrot, E. Rivière, C. H. Hendon, O. Oms, M. Gomez-Mingot, M. Fontecave, C. Mellot-Draznieks, A. Dolbecq, P. Mialane
Chem. Commun. 2019, 55, 4166-4169, doi: 10.1039/c9cc01269a
FeNC Catalysts for CO_2 Electroreduction to CO: Effect of Nanostructured Carbon Supports

D. Karapinar, Tran NGoc Huan, D. Giaume, N. Ranjbar, F. Jaouen, V. Mougel, M. Fontecave.
Sust. En. & Fuels 2019, 33, 1833-1840, doi : 10.1039/c9se00214f

Copper substituted $NiTiO_3$ Ilmenite type Materials for Oxygen Evolution Reaction
A. Guiet, Tran Ngoc Huan, C. Payen, F. Porcher, V. Mougel, M. Fontecave, G. Corbel
ACS Appl. Mat. Int. 2019, 11, 31038-31048, doi: 10.1021/acsami.9b08535

Ultrafast photoinduced flavin dynamics in the unusual active site of the tRNA methyltransferase TrmFO
Dozova N, Lacombat F, Bou-Nader C, Hamdane D, Plaza P.
Phys Chem Chem Phys. 2019, 21, 8743-8756, doi: 10.1039/c8cp06072j

Thin Films of Fully Noble Metal-Free POM@MOF for Electrocatalytic and Photocatalytic Water Oxidation
G. Paille, M. Gomez-Mingot, C. Roch-Marchal, M. Haouas, T. Pino, M.-H. Ha-Thi, G. Landrot, P. Mialane, M. Fontecave, A. Dolbecq, C. Mellot-Draznieks
ACS Appl. Mat. Int. 2019, 11, 47837-47845, doi: 10.1021/acsami.9b13121

2018

Photosynthèse artificielle: transformer le soleil en carburants
T. Fontecave, M. Fontecave
Bulletin de l'Union des Physiciens 2018, 1000, 249-260, doi : 10.4000/lettre-cdf.3285

Arabidopsis thaliana DGAT3 is a [2Fe-2S] protein involved in TAG biosynthesis
L. Aymé, S. Arragain, M. Canonge, S. Baud, N. Touati, O. Bimai, F. Jagic, C. Louis-Mondésir, P. Briozzo, M. Fontecave, T Chardot
Scientific Reports 2018, 8, 17254, doi: 10.1038/s41598-018-35545-7, doi: 10.1038/s41598-018-35545-7

A robust zirconium amino acid metal-organic framework for proton conduction
S.J. Wang, M. Wahiduzzaman, L. Davis, A. Tissot, W. Shepard, J. Marrot, C. Martineau-Corcos, D. Hamdane, G. Maurin, S. Devautour-Vinot, C. Serre
Nature Commun. 2018, 9, 4937, doi : 10.1038/s41467-018-07414-4

A Fully Noble Metal-Free Photosystem Based on Cobalt-Polyoxometalates Immobilized in a Porphyrinic Metal-Organic-Framework for Water Oxidation
G. Paille, M. Gomez-Mingot, C. Roch-Marchal, B. Lassalle-Kaiser, P. Mialane, M. Fontecave, C. Mellot-Draznieks, A. Dolbecq
J. Am. Chem. Soc. 2018, 140, 3613-3618, doi: 10.1021/jacs.7b11788

The ErpA/NfuA complex builds an oxidative resistant Fe-S cluster delivery pathway
B. Py, C. Gerez, A. Huguenot, C. Vidaud, M. Fontecave, S. Ollagnier de Choudens, F. Barras
J. Biol. Chem. 2018, 293, 7689-7702, doi: 10.1074/jbc.RA118.002160

Engineering a microbial [FeFe]-hydrogenase: do accessory clusters influence O_2 resistance and catalytic bias ?

G. Caserta, C. Papini, A. Adamska-Venkatesh, L. Pecqueur, C. Sommer, E. Reijerse, W. Lubitz, C. Gauquelin, I. Meynial-Salles, D. Pramanik, V. Artero, M. Atta, M. del Barrio, B. Faivre, V. Fourmond, C. Léger, M. Fontecave
J. Am. Chem. Soc. 2018, 140, 5516-5526, doi: 10.1021/jacs.8b01689

Characterization of CyrI, the hydroxylase involved in the last step of cylindrospermopsin biosynthesis: Binding studies, site-directed mutagenesis and stereoselectivity
R. Mazmouz, I. Essadik, D. Hamdane, A. Méjean, O. Ploux
Arch. Biochem. Biophys. 2018, 647, 1-9, doi: 10.1016/j.abb.2018.04.007

A Bioinspired Nickel(bis-dithiolene) Complex as a Novel Homogeneous Catalyst for Carbon Dioxide Electroreduction
T. Fogeron, T. K. Todorova, J.-P. Porcher, M. Gomez-Mingot, L.-M. Chamoreau, C. Mellot-Draznieks, Y. Li, M. Fontecave
ACS Catalysis 2018, 8, 2030-2038, doi: 10.1021/acscatal.7b03383

Spectroscopic Investigations of a semi-synthetic [FeFe] hydrogenase with propane di-selenol as bridging ligand in the bi-nuclear subsite: comparison to the wild type and propane di-thiol variants
C. Sommer, S. Rumpel, S. Roy, V. Artero, M. Fontecave, E. Reijerse, W. Lubitz
J. Biol. Inorg. Chem. 2018, 23, 481-491, doi: 10.1007/s00775-018-1558-4

Electrostatic potential in tRNA-binding evolution of dihydrouridine synthases
C. Bou-Nader, D. Bregeon, L. Pecqueur, V. Guerineau, M. Fontecave, D. Hamdane
Biochemistry 2018, 57, 5407-5414, doi: 10.1021/acs.biochem.8b00584

Immobilization of a full photosystem in the large pore MIL-101 Metal-organic Framework for CO_2 reduction
X. Wang, F. M. Wisser, J. Canivet, M. Fontecave, C. Mellot-Draznieks
ChemSusChem 2018, 11, 3315-3322, doi: 10.1002/cssc.201801066

Structure searching methods: general discussion
M. Addicoat, C. S. Adjiman, M. Arhangelskis, C. Mellot-Draznieks *et al.*
Faraday Discussions 2018, 211, 133-180, doi: 10.1039/c8fd90030b

Applications of crystal structure prediction - inorganic and network structures: general discussion
V. Burger, F. Claeyssens, D. W. Davies, G. M. Day, M. S. Dyer, A. Hare, Y. Li, C. Mellot-Draznieks, J. B. O. Mitchell, S. Mohamed, A. R. Oganov, S. L. Price, M. Ruggiero, M. R. Ryder, G. Sastre, J. C. Schön, P. Spackman, S. M. Woodley, Q. Zhu.
Faraday Discussions 2018, 211, 613-642, doi: 10.1039/c8fd90034e

Novel Ni-IRMOF-74 Postsynthetically Functionalized for H_2 Storage Applications
H. Monte-Andres, G. Orcajo, C. Mellot-Draznieks, C. Martos, J. A. Botas, G. Calleja.
J. Phys. Chem. C 2018, 122, 49, 28123-28132, doi: 10.1021/acs.jpcc.8b08972

Unveiling structural and functional divergences of bacterial tRNA dihydrouridine synthases: perspectives on the evolution scenario
C. Bou-Nader, H. Montemont, V. Guérineau, O. Jean-Jean, D. Bregeon, D. Hamdane
Nucleic Acids Res. 2018, 46, 1386-1394, doi: 10.1093/nar/gkx1294

Pyranopterin Related Dithiolene Molybdenum Complexes as Homogeneous Catalysts for CO_2 Photoreduction
T. Fogeron, P. Retailleau, L.-M. Chamoreau, Y. Li, M. Fontecave
Angew. Chem. Int. Ed. Engl. 2018, 57, 17033-17037, doi: 10.1002/anie.201809084

2017

Molecular cobalt complexes with pendant amines for selective electrocatalytic reduction of carbon dioxide to formate
S. Roy, B. Sharma, J. Pecaut, P. Simon, M. Fontecave, P. Tran, E. Derat, V. Artero
J. Am. Chem. Soc. 2017, 139, 3685-3696, doi: 10.1021/jacs.6b11474

A synthetic redox biofilm made from metalloprotein - prion domain chimera nanowires
L. Altamura, C. Horvath, S. Rengaraj, K. Elouarzaki, C. Gondran, A. L. B. Maçon, C. Vendrely, V. Bouchiat, M. Fontecave, A. Le Goff, M. Holzinger, N. Duraffourg, V. Forge
Nature Chemistry 2017, 9, 157-163, doi: 10.1038/NCHEM.2616

Porous dendritic copper: an electrocatalyst for highly selective CO_2 reduction to formate in water/ionic liquid electrolyte
Tran Ngoc Huan, P. Simon, G. Rousse, I. Génois, V. Artero, M. Fontecave
Chem. Sci. 2017, 8, 742-747, doi: 10.1039/c6sc03194c

Structural and Functional Characterization of the hydrogenase-maturation protein HydF
G. Caserta, L. Pecqueur, A. Adamska-Venkatesh, C. Papini, S. Roy, V. Artero, M. Atta, E. Reijerse, W. Lubitz, M. Fontecave
Nature Chem. Biol. 2017, 13, 779-784, doi: 10.1038/nchembio.2385

Molecular polypyridine-based metal complexes as catalysts for the reduction of CO_2
N. Elgrishi, M. B. Chambers, X. Wang, M. Fontecave
Chem Soc. Rev. 2017 46, 761-796, doi: 10.1039/c5cs00391a

Effect of Cations on the Structure and Electrocatalytic Response of Polyoxometalate-Based Coordination Polymers
W. Salomon, G. Paille, M. Gomez-Mingot, P. Mialane, J. Marrot, C. Roch-Marchal, G. Nocton, C. Mellot-Draznieks, M. Fontecave, A. Dolbecq
Crystal Growth & Design 2017 17, 1600–1609, doi: 10.1021/acs.cgd.6b01600

Electrochemical reduction of CO_2 catalyzed by Fe-N-C materials: a structure-selectivity study
Tran Ngoc Huan, N. Ranjbar, G. Rousse, M. Sougrati, A. Zitolo, V. Mougel, F. Jaouen, M. Fontecave
ACS Catalysis 2017, 7, 1520-1525, doi: 10.1021/acscatal.6b03353

Flavin-dependent epitranscriptomic world
Lombard M, Hamdane D.
Arch Biochem Biophys. 2017, 632, 28-40, doi: 10.1016/j.abb.2017.06.011

Ruthenium-Cobalt Dinuclear complexes as Photocatalysts for CO_2 reduction
X.Wang, V. Goudy, G. Genesio, J. Maynadié, D. Meyer, M. Fontecave
Chem. Commun 2017, 53, 5040-5043, doi: 10.1039/c6cc09941f

Nonredox thiolation in transfer RNA occuring via sulfur activation by a [4Fe-4S] cluster
S. Arragain, O. Bimai, P. Legrand, S. Caillat, J.-L. Ravanat, N. Touati, L. Binet, M. Atta, M. Fontecave, B. Golinelli-Pimpaneau
Proc. Natl. Acad. Sci. 2017, 114, 7355-7360, doi: 10.1073/pnas.1700902114

Rhenium complexes based on 2-pyridyl-1,2,3-triazole ligands: a new class of CO_2 reduction catalysts
H.Y.V. Ching, X. Wang, M. He, N. P. Holland, R. Guillot, C. Slim, S. Griveau, H. C. Bertrand, C. Policar, F. Bedioui, M. Fontecave
Inorg. Chem. 2017, 56, 2966-2976, doi: 10.1021/acs.inorgchem.6b03078

Maximizing the Photocatalytic Activity of Metal-Organic Frameworks with Aminated-Functionalized Linkers: Substoichiometric effects in MIL-125-NH2
M. Chambers, X. Wang, L. Ellezam, Ov. Ersen, M. Fontecave, C. Sanchez, L. Rozes, C. Mellot-Draznieks
J. Am. Chem. Soc. 2017, 139, 8222-8228, doi: 10.1021/jacs.7b02186

Synthesis, Characterization and DFT Analysis of Bis-Terpyridyl-Based Molecular Cobalt Complexes
S. Aroua, T. K. Todorova, L.-M. Chamoreau, V. Mougel, H.-U. Reissig M. Fontecave
Inorg. Chem. 2017, 56, 5930-5940, doi: 10.1021/acs.inorgchem.7b00595

The unusual ring scission of a quinoxaline-pyranfused dithiolene system related to molybdopterin
T. Fogeron, P. Retailleau, L.-M. Chamoreau, M. Fontecave, Y. Li
Dalton Trans. 2017, 46, 4161-4164, doi: 10.1039/c7dt00377c

A Dendritic Nanostructured Copper Oxide Electrocatalyst for the Oxygen-Evolving Reaction
Tran Ngoc Huan, G. Rousse, S. Zanna, I. T. Lucas, X. Xu, N. Menguy, V. Mougel, M. Fontecave
Angew. Chem. 2017, 56, 4792-4796, doi: 10.1002/anie.201700388

New Cobalt-Bisterpyridyl Catalysts for Hydrogen Evolution Reaction
S. Aroua, T. K. Todorova, V. Mougel, P. Hommes, H.-U. Reissig, M. Fontecave
ChemCatChem 2017, 9, 2099-2105, doi:

On the Role of Additional [4Fe-4S] Clusters with a Free Coordination Site in Radical-SAM Enzymes
E. Mulliez, V. Duarte, S. Arragain, M. Fontecave, M. Atta
Front. Chem. 2017, 5, 17. doi: 10.3389/fchem.2017.00017

The UbiK protein is necessary for coenzyme Q biosynthesis in *Escherichia coli* and *Salmonella enterica* and forms a complex with UbiJ
L. Loiseau, C. Fyfe, L. Aussel, M. Hajj Chehade, S. B. Hernández, B. Faivre, D. Hamdane, C. Mellot-Draznieks, B. Rascalou, L. Pelosi, C. Velours, D. Cornu, J. Casadesús, M. Lombard F. Pierrel, M. Fontecave, F. Barras
J. Biol. Chem. 2017, 292, 11937-11950, doi: 10.1074/jbc.M117.789164

Pt Immobilization within a Tailored Porous-Organic Polymer–Graphene Composite: Opportunities in the Hydrogen Evolving Reaction
A. Soliman, Tran Ngoc Huan, M. Hassan, A. Abugable, W. Elmehalmey, Worood; S. Karakalos, M. Tsotsalas, M. Heinle, M. Fontecave, M. Alkordi
ACS Catalysis 2017, 7, 7847-7854, doi: 10.1021/acscatal.7b02246

Enzyme activation with a synthetic catalytic co-enzyme intermediate: nucleotide methylation by new flavoenzymes
C. Bou-Nader, D. Cornu, V. Guerineau, T. Fogeron, M. Fontecave, D. Hamdane
Angew. Chem. Int. Ed. 2017, 56, 12523-12527, doi: 10.1002/anie.201706219

Power of protein/tRNA functional assembly against aberrant aggregation
C. Bou-Nader, L. Pecqueur, D. Cornu, M. Lombard, M. Dezi, C. Velours, M. Fontecave, D. Hamdane
Phys. Chem. Chem. Phys. 2017, 19, 28014-28027, doi: 10.1039/c7cp05599d

Site-isolated manganese carbonyl on bipyridine-functionalities of periodic mesoporous organosilicas: efficient CO_2 photoreduction and detection of key reaction intermediates
X. Wang, I. Thiel, A. Fedorov, C. Copéret, V. Mougel, M. Fontecave
Chem. Sci. 2017, 8, 8204-8213, doi: 10.1039/c7sc03512h

2016

Coenzyme Q biosynthesis: Evidence for a substrate access channel in the FAD-dependent monooxygenase Coq6
A. Ismail, V. Leroux, M. Smaja, L. Gonzalez, M. Lombard, F. Pierrel, C. Mellot-Draznieks, M. Fontecave
PLOS Computational Biology 2016, 12, e1004690

Synthesis, electrochemical and spectroscopic properties of ruthenium(II) complexes containing 2,6-di(1*H*-imidazo[4,5-*f*][1,10]phenantrolin-2-yl)aryl ligands
V. Goudy, J. Maynadié, X. Le Goff, D. Meyer, M. Fontecave.
New. J. Chem. 2016, 40, 1704-1714

Cu/Cu_2O electrodes and CO_2 reduction to formic acid: Effects of organic additives on surface morphology and activity
Tran Ngoc Huan, P. Simon, A. Benayad, L. Guetaz, V. Artero, M. Fontecave
Chemistry 2016, 22, 14029-14035

Synthesis and Reactivity of a Bio-inspired Dithiolene ligand and its Mo-oxo complex
J.-P. Porcher, T. Fogeron, M. Gomez-Mingot, L.-M. Chamoreau, Yun Li , M. Fontecave
Chemistry 2016, 22, 4447-4453

A simple and non-destructive method for assessing the incorporation of bipyridine dicarboxylates as linkers within metalorganic frameworks
C. H. Hendon, J. Bonnefoy, E. A. Quadrelli, J. Canivet, M.B. Chambers, G. Rousse, A. Walsh, M. Fontecave, C. Mellot-Draznieks.
Chemistry 2016, 22, 3713-3718

Chimie bioinspirée pour l'énergie: Transformer le soleil en carburants (Bioinspired chemistry for energy means: Conversion of sun into fuels)
M. Fontecave, M. Gomez-Mingot
L'Actualité Chimique 2016, 408-409, 46-50

Réduction photo-catalytique de CO_2 dans des matériaux à charpentes hybrides : contrôle de l'absorption de lumière et incorporation de catalyseurs moléculaires
G. Paille, M. Fontecave, C. Mellot-Draznieks
L'Actualité Chimique 2016, 408-409, 64-67

Artificial Hydrogenases based on Cobaloximes and Heme Oxygenase
M. Bacchi, E. Veinberg, M. J. Field, J. Niklas, O. G. Poluektov, M. Ikeda-Saito, M. Fontecave, V. Artero
ChemPlusChem 2016, 81, 1083-1089

CO_2 reduction to CO in water: carbon nanotube-gold nanohybrid as a selective and efficient electrocatalyst.
Tran Ngoc Huan, P. Prakash, P. Simon, G. Rousse, X. Xiangzhen, V. Artero, E. Gravel, E. Doris, M. Fontecave
ChemSusChem 2016, 9, 2317-2320

Chemical assembly of multiple cofactors: the heterologously expressed multidomain [FeFe]-hydrogenase from *Megasphaera elsdenii*.
G. Caserta, A. Adamska-Venkatesh, L. Pecqueur, M. Atta, V. Artero, R. Souvik, E. Reijerse, W. Lubitz, M. Fontecave
Biochim. Biophys. Acta, Bioenergetics 2016, 1857, 1734-1740

A chemical chaperone induces inhomogeneous conformational changes in flexible proteins
D. Hamdane, C. Velours, D. Cornu, M. Nicaise, M. Lombard, M.Fontecave
Phys. Chem. Chem. Phys. 2016, 18, 20410-20421

A Cobalt Complex with a bioinspired molybdopterin-like ligand: a Catalyst for Hydrogen Evolution
T. Fogeron, J.-P. Porcher, M. Gomez-Mingot, T. K. Todorova, L.-M. Chamoreau, C. Mellot-Draznieks, Yun Li, M. Fontecave
Dalton Trans 2016, **45**, 14754-14763.

Porous-Organic Polymers as Platforms for Hetrogeneous Photochemical Catalysis
M. H. Alkordi, R. R. Haikal, X. Wang, Y. S. Hassan, M. R. Parida, M. Banavoth, O. F. Mohammed, P. J. Pellechia, M. Fontecave
ACS Applied Materials and Interfaces 2016, 8, 19994-20002

Flavin-dependent methylation of RNAs: complex chemistry for a simple modification
D. Hamdane, H. Grosjean, M. Fontecave
J. Mol. Biol. 2016, 428, 4867-4881

Reactivity of the excited states of the H-cluster of FeFe hydrogenase

M. Sensi, C. Baffert, C.Greco, G.Caserta, C. Gauquelin, L. Saujet, M. Fontecave, S. Roy, V. Artero, P. Soucaille, I. Meynial-Salles, H.Bottin, L. de Gioia, V. Fourmond, C. Léger, Luca Bertini
J. Am. Chem. Soc. 2016, 138, 13612-13618

2015

Photocatalytic CO_2 Reduction Utilizing Cp*Rh-based Catalysts in Solution and Heterogenized within Metal-Organic Frameworks
M. B. Chambers, X. Wang, N. Elgrishi, C. H. Hendon, A. Walsh, J. Bonnefoy, J. Canivet, E. A. Quadrelli, D. Farrusseng, C. Mellot-Draznieks, M. Fontecave *ChemSusChem* 2015, 8, 603-608

Artificially Maturated [FeFe] Hydrogenase from C*hlamydomonas reinhardtii*: A HYSCORE and ENDOR Study of a Non-Natural H-cluster
A. Adamska-Venkatesh, T. R. Simmons, J. Siebel, V. Artero, M. Fontecave, E. Reijerse, W. Lubitz
Phys. Chem. Chem. Phys. 2015, 17, 5421-5430

Artificial hydrogenases: biohybrid and supramolecular systems for catalytic hydrogen production or uptake
G. Caserta, S. Roy, M. Atta, V. Artero, M. Fontecave
Curr. Op. Chem. Biol. 2015, 25, 36–47

A Noble Metal-Free Proton-Exchange Membrane Fuel Cell based on Bio-inspired Molecular Catalysts
P. D. Tran, A. Morozan, S. Archambault, J. Heidkamp, P. Chenevier, H. Dau, M. Fontecave, A. Martinent, B. Jousselme, V. Artero
Chem. Sci. 2015, **6**, 2050-2053

Turning it off! Shutting down hydrogen evolution during homogeneous CO_2 reduction to CO by cobalt-terpyridine complexes
N. Elgrishi, M. B. Chambers, M. Fontecave
Chem. Sci. 2015, **6**, 2522 – 2531

From molecular copper complexes to composite electrocatalytic materials for selective reduction of CO_2 to formic acid
Tran Ngoc Huan, E. S. Andreiadis, J. Heidkamp, P. Simon, E. Derat, S. Cobo, G. Royal, H. Dau, V. Artero, M. Fontecave
J. Mat. Chem. A 2015, 3, 3901-3907

Versatile functionalization of carbon electrodes with a polypyridine ligand: metallation and electrocatalytic H^+ and CO_2 reduction
N. Elgrishi, S. Griveau, M. B. Chambers, F. Bedioui, M. Fontecave
Chem. Commun. 2015, 51, 2995 – 2998

Bioinspired Tungsten Dithiolene Catalysts for Hydrogen Evolution: A Combined Electrochemical, Photochemical and Computational Study
M. Gomez-Mingot, J.-P. Porcher, T. K. Todorova, T. Fogeron, C. Mellot-Draznieks, Y. Xu-Li, M. Fontecave

J. Phys. Chem. B 2015, 119, 13524-13533

Sustainable Chemistry for Energizing the Planet
M. Fontecave
Angew. Chem. Int Ed. 2015 , 54, 6946-6947.

Les carburants solaires: Photosynthèse artificielle et procédés électrochimiques
N. Kaeffer, N. Queyriaux, M. Chavarot-Kerlidou, M. Fontecave, V. Artero
L'Actualité Chimique 2015, 397-398, 63-68

Electro-assisted Reduction of CO_2 to CO and Formaldehyde by the $(TOA)_6[\alpha\text{-}SiW_{11}O_{39}Co(\_)]$ Polyoxometalate
M. Girardi, S. Blanchard, S. Griveau, P. Simon, M. Fontecave, F. Bedioui, A. Proust
Eur. J. Chem. 2015, 22, 3642-3648

Flavin-protein Complexes: Aromatic Stacking driven by a Single Hydrogen Bond
D. Hamdane, C. Bou-Nader, D. Cornu, G. Hui-Bon-Hoa, M. Fontecave
Biochemistry 2015, 54, 4354-4364

Spectroscopic identification of the bridging amine in the active site of [FeFe] hydrogenase using isotopologues of the H-cluster.
A. Adamska-Venkatesh, S. Roy, J. F. Siebel, T. R. Simmons, M. Fontecave, V. Artero, E. Reijerse, W.L. Lubitz
J. Am. Chem. Soc. 2015, 137, 12744-12747

A bio-inspired Molybdenum Complex as a Catalyst for the Photo- and Electroreduction of Protons
J-P. Porcher, T. Fogeron, M. Gomez-Mingot, E. Derat, L-M. Chamoreau, Y. Li, M. Fontecave
Angew. Chem. Int. Ed. 2015, 54, 14090-14093

From Enzyme Maturation to Synthetic Chemistry:The case of Hydrogenases
V. Artero, G. Berggren, M. Atta, G. Caserta, S. Roy, L. Pecqueur, M. Fontecave
Accounts Chem Res. 2015, 48, 2380-2387

Coq6 is Responsible for the C4-Deamination Reaction in Coenzyme Q Biosynthesis in *Saccharomyces cerevisiae*
M. Ozeir, L. Pelosi, A. Ismail, C. Mellot-Draznieks, M. Fontecave, F. Pierrel.
J. Biol. Chem. 2015, 290, 24140-24151

An extended dsRBD is required for post-transcriptional modification in human tRNAs
C. Bou-Nader, L. Pecqueur, D. Bregeon, A. Kamah, V. Guérineau, B. Golinelli-Pimpaneau, B.G. Guimarães, M. Fontecave, D. Hamdane
Nucleic Acids Res. 2015, 43, 9446-9456

2014

UbiJ, a new gene required for aerobic growth and proliferation in macrophage, is involved in coenzyme Q biosynthesis in Escherichia coli and Salmonella enterica serovar typhimurium:

L. Aussel, L. Loiseau, M.H. Chehade, B. Pocachard, M. Fontecave, F. Pierrel, F. Barras
J. Bacteriol. 2014, 196, 70-79

Mimicking Hydrogenases: from Biomimetics to Artificial Enzymes
T. R. Simmons, G. Berggren, M. Bacchi, M. Fontecave, V. Artero
Coord. Chem. Rev. 2014, 270-271, 127-150.

An EPR/HYSCORE, Mössbauer, and resonance Raman study of the hydrogenase maturation enzyme HydF – a model for N coordination to [4Fe-4S] clusters
G. Berggren, R. Garcia, X. Brazzolotto, M. Clemancey, S. Gambarelli, M. Atta, J.-M. Latour, H. L. Hernández, S. Subramanian, M. K. Johnson, M. Fontecave
J. Biol. Inorg. Chem. 2014, 19, 75-84

Biosynthesis and physiology of coenzyme Q in bacteria
F. Barras, L. Aussel, F.Pierrel, L. Loiseau, M. Lombard, M. Fontecave
Biochim. Biophys. Acta, *Bioenergetics* 2014, 1837, 1004-1011

Terpyridine complexes of first row transition metals and electrochemical reduction of CO2 to CO.
N. Elgrishi, M.B. Chambers, V. Artero, M. Fontecave
Phys. Chem. Chem. Phys. 2014, 16, 13635-44

TtcA a new tRNA-thioltransferase with an Fe-S cluster.
D. Bouvier, N. Labessan, M. Clemancey, J-M Latour, J-L Ravanat, M. Fontecave, M. Atta
Nucleic Acid Res. 2014, 42, 7960-70

An integrative computational model for large-scale identification of metalloproteins in microbial genomes: a focus on iron-sulfur cluster proteins
Johan Estellon, Sandrine Ollagnier de Choudens, Myriam Smadja, Marc Fontecave, Yves Vandenbrouck
Metallomics, **2014, 6, 1913–1930**

Cobaloxime-Based Artificial Hydrogenases
M. Bacchi, G. Berggren, J. Niklas, E. Veinberg, M. W. Mara, M. L. Shelby, O. G. Poluektov, L. X. Chen, D. M. Tiede, C. Cavazza, M. J. Field, M. Fontecave, Vincent Artero
Inorg. Chem. 2014, 53, 8071-8082

Theoretical Modeling of Low-Energy Electronic Absorption Bands in Reduced Cobaloximes
A.Bhattacharjee, M. Chavarot-Kerlidou, J. L. Dempsey, H. B. Gray, E. Fujita, J. T. Muckerman, M. Fontecave, V. Artero, G. M. Arantes, M. J. Field
ChemPhysChem 2014, 15, 2951-2958

Electrode materials and artificial photosynthetic systems
P. D. Tran, M. Fontecave, V. Artero in "Bioinspired Catalysis: Metal-Sulfur Complexes" Wolfgang Weigand and Philippe Schollhammer, editors 2015, Wiley-VCH Verlag GmbH & Co. KGaA, Boschstr. 12, 69469 Weinheim, Germany, pp 385-410.

Molecular Investigation of Iron-sulfur cluster Assembly Scaffolds under Stress
B. Blanc, M. Clemancey, J.-M. Latour, M. Fontecave, S. Ollagnier de Choudens
Biochemistry 2014, 53, 7867-7869

2013

Molecular Engineering of a Cobalt-based Electrocatalytic Nanomaterial for H_2 Evolution under Pure Aqueous Conditions
E. S. Andreiadis, P.-A. Jacques, P.D. Tran, A. Leyris, M. Chavarot-Kerlidou, B. Jousselme, M. Matheron, J. Pécaut, S. Palacin, M. Fontecave, V. Artero
Nature Chemistry 2013, 5, 48-53

In vivo [Fe-S] cluster acquisition by IscR and NsrR, two stress regulators in Escherichia coli
Daniel Vinella, Laurent Loiseau, Sandrine Ollagnier de Choudens, Marc Fontecave and Frédéric Barras
Molecular Microbiology 2013, 87, 493-508

Two Fe-S clusters catalyze sulfur insertion by radical-SAM methylthiotransferases
F. Forouhar, S. Arragain, M. Atta, S. Gambarelli, J.-M. Mouesca, M. Hussain, R. Xiao, S. Kieffer-Jaquinod, J. Seetharaman, T. B. Acton, G. T. Montelione, E. Mulliez, J. F. Hunt, M. Fontecave
Nature Chemical Biology 2013, 9, 333-338

Solar fuels generation and molecular systems: Is it homogeneous or heterogeneous catalysis?
V. Artero, M. Fontecave
Chem. Soc. Rev. 2013, 42, 2338-2356

Catalytic hydrogen production by Ni-Ru mimic of NiFe hydrogenases involves a proton-coupled electron transfer step
S. Canaguier, V. Fourmond, C. Perotto, J. Fize, J. Pécaut, M. Fontecave, M. J. Field, V. Artero
Chem. Commun. 2013, 49, 5004-5006

Biomimetic assembly and activation of [FeFe]-hydrogenases
G. Berggren, A. Adamska, C. Lambertz, T. Simmons, J. Esselborn, M. Atta, S. Gambarelli, JM Mouesca, E. Reijerse, W. Lubitz, T. Happe, V.Artero, M. Fontecave
Nature, 2013, 499, 66-70

Artificial Photosynthesis as a Frontier Technology for Energy Sustainability
T. Faunce S.Styring, M.R.Wasielewski, G.W. Brudvig, A. W. utherford, J. Messinger, A. F. Lee, C. L. Hill, H. deGroot, M. Fontecave, D. R. MacFarlane, B. Hankamer, D. G. Nocera, D. M. Tiede, H. Dau, W. Hillier, L. Wang
Energy Environ. Sci. 2013, 6, 1074-1076

Dye-Sensitized Nanostructured Crystalline Mesoporous Tin-doped Indium Oxide Films with Tunable Thickness for Photoelectrochemical Applications

W. Hamd, M. Chavarot-Kerlidou, J. Fize, G. Muller, A. Leyris, M. Matheron, E. Courtin, M. Fontecave, C. Sanchez, V. Artero, C. Laberty-Robert
J. Mater. Chem. A 2013, 1, 8217-8225

UbiI, a new gene in *Escherichia coli* Coenzyme Q biosynthesis, is involved in aerobic C5-hydroxylation
M. Hajj Chehade, L. Loiseau, M. Lombard, L. Pecqueur, A. Ismail, M. Smadja, B. Golinelli-Pimpaneau, C. Mellot-Draznieks, O. Hamelin, L. Aussel, S. Kieffer-Jaquinod, N. Labessan, F. Barras, M. Fontecave, F. Pierrel.
J. Biol. Chem. 2013, 288, 20085-20092

A computational study of the mechanism of hydrogen evolution by cobalt(diimine-dioxime) catalysts
A. Bhattacharjee, E. S. Andreiadis, M. Chavarot-Kerlidou, M. Fontecave, M. J. Field, V. Artero
Chemistry 2013, 19, 15166-15174

Spontaneous activation of [FeFe]-hydrogenases by an inorganic [2Fe] active site mimic
J. Esselborn, C. Lambertz, A. Adamska, T. Simmons, G. chambers
, J. Noth, J. Siebel, A. Hemschemeier, V. Artero, E. Reijerse, M. Fontecave, W. Lubitz, T. Happe
Nature Chem. Biol. 2013, 9, 607-609

Engineering the Optical Response of the Titanium-MIL-125 Metal−Organic Framework through Ligand Functionalization
C. H. Hendon, D. Tiana, M. Fontecave, C. Sanchez, L. D'arras, C. Sassoye, L. Rozes, C. Mellot-Draznieks, A. Walsh
J. Am. Chem. Soc. 2013, 135, 10942-10945

Activation du dioxyde de carbone: enzymes, catalyseurs bioinspirés et photosynthèse artificielle
N. Elgrishi, V. Artero, M. Fontecave
L'Actualité Chimique 2013, 371-372, 95-100

Activation of a unique flavin-dependent tRNA-methylating agent
D. Hamdane, E. Bruch, S. Un, M. Field, M. Fontecave
Biochemistry 2013, 52, 8949-8956

2012

The methylthiolation reaction mediated by the Radical-SAM enzymes.
M. Atta, S. Arragain, M. Fontecave, E. Mulliez, J. F. Hunt, J. D. Luff, F. Forouhar.
Biochim. Biophys. Acta 2012, 1824, 1223-1230

Combined experimental – theoretical characterization of the hydrido-cobaloxime [HCo(dmgH)2(P*n*Bu3)]
A. Bhattacharjee, M. Chavarot-Kerlidou, E.S. Andreiadis, M. Fontecave, M. J. Field, V. Artero
Inorg. Chem. 2012, 51, 7087-93

Phosphine coordination to a cobalt diimine-dioxime catalyst increases stability during light-driven H_2 production
P. Zhang, P.-A. Jacques, M. Chavarot-Kerlidou, M. Wang, L. Sun, M. Fontecave, V. Artero
Inorg. Chem. 2012, 51, 2115-2120

Molecular organisation, biochemical function, cellular role and evolution of NfuA, an atypical Fe-S carrier.
B. Py, C. Gerez, S. Angelini, S. Ollagnier-de Choudens, D. Vinella, L. Loiseau, M. Fontecave, F. Barras
Mol. Microbiol. 2012, 86, 155-171

Evolution of Fe-S cluster biogenesis in the anaerobic parasite *Blastocystis*
A. D. Tsaousis, E. Gentekaki, S. Ollagnier-de-Choudens, S. Long, D. Gaston, A. Stechmann, M. Fontecave, B. Py, F. Barras, J. Lukeš, A. J. Roger
Proc. Natl. Acad. Sci. 2012, 109,10426-31

A Janus cobalt-based catalytic material for electro-splitting of water.
S. Cobo, J. Heidkamp, P.-A. Jacques, J. Fize, V. Fourmond, L. Guetaz, B. Jousselme, R. Salazar, V. Ivanova, H. Dau, S. Palacin, M. Fontecave, V. Artero
Nature Materials 2012, 11, 802-807

Over-expression of the Coq8 kinase in Saccharomyces cerevisiae coq null mutants allows for accumulation of diagnostic intermediates of the Coenzyme Q_6 biosynthetic pathway
L. X. Xie, M. Ozeir, J. Y. Tang, J. Y. Chen, S. Kieffer-Jaquinod, M. Fontecave, C. F. Clarke, F. Pierrel
J. Biol. Chem. 2012, 287, 23571-81

4-demethylwyosine synthase from *Pyrococcus abyssi* is a Radical-SAM enzyme with an additional $[4Fe\text{-}4S]^{+2}$ cluster which interacts with the pyruvate co-substrate
P. Perche-Letuvée, V. Kathirvelu, G. Berggren, M. Clemancey, J.-M. Latour, V. Maurel, T. Douki, J. Armengaud, E. Mulliez, M. Fontecave, R. Garcia-Serres, S. Gambarelli, M. Atta.
J. Biol. Chem. 2012, 287, 41174-41185

Mesoporous α-Fe_2O_3 Thin Films Synthesized via the Sol-gel Process for Light-driven Water Oxidation
W. Hamd, S. Cobo, J. Fize, G. Baldinozzi, W. Schwartz, M. Reymermier, A. Pereira, M. Fontecave, V. Artero, C. Laberty-Robert, C. Sanchez
Phys. Chem. Chem. Phys., 2012, **14, 13224–13232**.

Flavin conjugates for delivery of peptide nucleic acids
F. Marlin, P. Simon, S. Bonneau, P. Alberti, C. Cordier, C. Boix, L. Perrouault, A. Fossey, T. Saison-Behmoaras, M. Fontecave, C. Giovannageli
ChemBioChem 2012, 13, 2593-2598

FAD/Folate-Dependent tRNA Methyltransferase: Flavin as a new methyl-tranfer agent
D. Hamdane, M. Argentini, D. Cornu, B. Golinelli-Pimpaneau, M. Fontecave
J. Am. Chem. Soc. 2012, 134, 19739-19745