

Liste publications 2022

- Li Wang, Viktoria A. Saveleva, Mohammad J. Eslamibidgoli, Denis Antipin, Corinne Bouillet, Indro Biswas, Aldo S. Gago, Seyed S. Hosseiny, Paweł Gazdzicki, Michael H. Eikerling, Elena R. Savinova, and K. Andreas Friedrich, Deciphering the Exceptional Performance of NiFe Hydroxide for the Oxygen Evolution Reaction in an Anion Exchange Membrane Electrolyzer, *ACS Appl. Energy Mater.*; 2022, 5, 2, 2221–2230; <https://doi.org/10.1021/acsaem.1c03761>
- Alexandr Oshchepkov, Antoine Bonnefont, Gaël Maranzana, Elena R. Savinova, Marian Chatenet, Direct borohydride fuel cells: A selected review of their reaction mechanisms, electrocatalysts, and influence of operating parameters on their performance, *Current Opinion in Electrochemistry*, Volume 32, April 2022, 100883; doi.org/10.1016/j.coelec.2021.100883
- Alexandr G. Oshchepkov, and Elena R. Savinova, Ni as a Promising Electrocatalytic Material for Electrooxidation of Hydrogen and Borohydride: State-of-the-Art and Future Challenges, *Kinetics and Catalysis*, 63c(2022) 16–32.
- Alexandr G. Oshchepkov, Pavel A. Simonov, Alexey N. Kuznetsov, Shokir A. Shermukhamedov, Renat R. Nazmutdinov, Ren I. Kvon, Vladimir I. Zaikovskii, Tatyana Yu. Kardash, Elizaveta A. Fedorova, Olga V. Cherstiouk, Antoine Bonnefont, Elena R. Savinova, Bimetallic NiM/C (M=Cu, Mo) Catalysts for the Hydrogen Oxidation Reaction: Deciphering the Role of Unintentional Surface Oxides in the Activity Enhancement, *ACS Catalysis* accepted.
- K.A. Dosaev, S.Ya. Istomin, D.A. Strebkov, G.A. Tsirlina, E.V. Antipov and E.R. Savinova, AMn₂O₄ Spinels (A - Li, Mg, Mn, Cd) as ORR catalysts: the role of Mn coordination and oxidation state in the catalytic activity and their propensity to degradation, *Electrochim. Acta* 428 (2022) 140923
- G. Kerangueven, I.S. Filimonenkov, E. R. Savinova, Investigation of the stability of the boron-doped diamond support for Co₃O₄-based oxygen evolution reaction catalysts synthesized through in situ autocombustion method, *J. Electroanal. Chem.*, 916 (2022) 116367; DOI10.1016/j.jelechem.2022.116367
- Rémy Savin, Nour-Ouda Benzaamia, Christian Njel, Sergey Pronkin, Christian Blanck, Marc Schmutz, Fouzia Boulmedais, "Nanohybrid biosensor based on mussel-inspired electro-cross-linking of tannic acid capped gold nanoparticles and enzymes," *Mater. Adv.*, vol. 3, no. 4, pp. 2222–2233, 2022, doi: 10.1039/D1MA01193F.
- Houda Boudjehem, Hayet Moumeni, Abderrafik Nemamcha, Sergey Pronkin, and Jean Luc Rehspringer, "Effect of deposition conditions on the properties of Ni–Mo–W coatings as electrocatalysts for hydrogen evolution reaction," *J Appl Electrochem*, vol. 52, no. 2, pp. 217–229, Feb. 2022, doi: 10.1007/s10800-021-01615-4.
- Yechuan Chen, Ying Huang, Mingjie Xu, Tristan Asset, Wingwu Yan, Kateryna Artyushkova, Mounka Kodali, Eamonn Murphy, Alvin Ly, Xiaoqing Pan, Iryna V. Zenyuk, Plamen Atanassov "Catalysts by pyrolysis: Direct observation of transformations during re-pyrolysis of transition metal-nitrogen-carbon materials leading to state-of-the-art platinum group metal-free electrocatalyst" *Materials Today*, 53 (2022) 58-70, <https://doi.org/10.1016/j.mattod.2022.01.016>
- Bjorn Eriksson, Tristan Asset, Francesco Spanu, Frédéric Lecoئur, Marc Dupont, Felipe A. Garces-Pineda, José Ramon Galan-Mascaros, Sara Cavaliere, Jacques Rozière, Frédéric Jaouen, "Mitigation of Carbon Crossover in CO₂ Electrolysis by Use of Bipolar Membranes", *J. Electrochem. Soc.*, 169 (2022) 034508, 10.1149/1945-7111/ac580e
- Tristan Asset, Frédéric Maillard, Frédéric Jaouen, "Electrocatalysis with Single-Metal Atom Sites in Doped Carbon Matrices" in Supported Metal Single Atom Catalysis, Philippe Serp & Doan Pham Minh, 2022 Wiley-VCH GmbH, <https://doi.org/10.1002/9783527830169.ch13>
- Meng Gao, Xi Liu, Zhenzhen Wang, Hui Wang, Tristan Asset, Di Wu, Jun Jiang, Qianqian Xie, Shujuan Xu, Xiaoming Cai, Jia Li, Weili Wang, Huizen Zheng, Xingfa Gao, Nikolai Tarashenko, Benjamin Rotonnelli, Jean-Jacques Gallet, Frédéric Jaoue, Ruibin Li, "Engineering catalytic dephosphorylation reaction for endotoxin inactivation" *Nano Today*, 44 (2022) 101456, <https://doi.org/10.1016/j.nantod.2022.101456>

Michele Ferri, Laurent Delafontaine, Shengyuan Gao, Tristan Asset, Pierangela Cristiani, Sebastiano Campisi, Antonella Gervasini, Plamen Atanassov, "Steering Cu-Based CO ₂ RR Electrocatalysts' Selectivity: Effect of Hydroxyapatite Acid/Base Moieties in Promoting Formate Production", ACS Energy Lett. 2022, 7, 7, 2304–2310, https://doi.org/10.1021/acsenergylett.2c01144
Laurent Delafontaine, Eamonn Murphy, Shengyuan Guo, Yuanchao Liu, Tristan Asset, Ying Huang, Jiazhe Chen, Iryna V. Zenyuk, Xiaoqing Pan, Plamen Atanassov, "Synergistic Electrocatalytic Syngas Production from Carbon Dioxide by Bi-Metallic Atomically Dispersed Catalysts", ChemElectroChem, 17 (2022), e202200647, https://doi.org/10.1002/celc.202200647
Yongzhen Qi, Ying Huang, Ziliang Gao, Celine H. Chen, Andrea Pergo, Hakan Yildirim, Madeleine Odgaard, Tristan Asset, Plamen Atanassov, Iryna V. Zenyuk, "Insight into carbon corrosion of different carbon supports for Pt-based electrocatalysts using accelerated stress tests in polymer electrolyte fuel cells", J. Power Sources, 551 (2022) 232209, https://doi.org/10.1016/j.jpowsour.2022.232209
U. Biapo, V. Keller, P. Bazin, T. Cottineau, Investigation of interactions between organophosphorous compounds and TiO ₂ modified microcantilevers for molecule detection in air, Materials Advances, 3, 3600-3609, 2022
L. Hammoud, C. Streibel, Joumana Toufaily, Tayssir Hamieh, V. Keller, V. Caps, The role of the gold-platinum interface in the AuPt/TiO ₂ -catalyzed plasmon-induced reduction of CO ₂ with water, Faraday Discussions 242, 443-463, 2022
G. Thomas, V. Keller, D. Spitzer, Highly vertical 3D Bio-Inspired Hierarchical and Multiscale Superstructures on Microcantilever for Gas Sensing of Organophosphorous, Materials Today, 101667, 2022
N. Rouvière, J-P. Brach, T. Honnecker, K. Christoforidis, D. Robert, V. Keller, UiO-66/TiO ₂ nanostructures as adsorbent/photocatalytic composites for air treatment, Catalysis Today, Doi.org/10.1016/j.cattod.2022.11.021
H. El-Marouazi, V. Keller, I. Janowska, On the evolution of oxidative etching of Few Layer Graphene nanocomposites. Interfacial signature chemical shift in C1s X-Ray Photoemission SpectroscopySurfaces and Interfaces, 36, 102510, 2022
G. Thomas, V. Keller, D. Spitzer, Highly vertical 3D Bio-Inspired Hierarchical and Multiscale Superstructures on Microcantilever for Gas Sensing of Organophosphorous, Materials Today, 101667, 2022
C. Marchal, C. Mary, L. Hammoud, X. Qingyang, J. Toufaily, T. Hamieh, L. Suhadolnik, P. Fornasiero, C. Colbeau-Justin, V. Caps, T. Cottineau, V. Keller, A parametric study of Au/TiO ₂ photocatalysts for CO ₂ gas-phase reduction in presence of water, Catalysts, 12, 1623, 2022
C. B. Dantio Nguela, N. H. Manga, C. Marchal, A. V. Abega, N. J. Nsami, D. Robert, Effect of Biogenic Silica Behavior in the Incorporation of Mesoporous Anatase TiO ₂ for Excellent Photocatalytic Mineralization of Sodium Diclofenac, Catalysts 12 (9), (2022) 1001.
P. García-Muñoz, P. H. Allé, C. Bertoloni, A. Torres, M. U. De La Orden, J. M. Urreaga, MA Dziurla, F. Fresno, D. Robert, Photocatalytic degradation of polystyrene nanoplastics in water. A methodological study, Journal of Environmental Chemical Engineering 10 (4), 108195
S Ihaddaden, D Aberkane, A Boukerroui, D Robert, Removal of methylene blue (basic dye) by coagulation-flocculation with biomaterials (bentonite and Opuntia ficus indica), Journal of Water Process Engineering 49, (2022) 102952
C Guillard, D Robert, Catalysis in Advanced Oxidation Technologies (AOTs) for Water, Air and Soil Treatment, Catalysts 12 (5), (2022) 502
M. Ellouzi, S El Hajjaji, M Harir, P Schmitt-Kopplin, D Robert, L Laânab, Synthesis of new C, N, S, Fe-multidoping nanoparticles with potential photochemical response, Journal of Dispersion Science and Technology, (2022) 1-10

Song, J Sun, Z Wang, J Ma, Y Liu, FJ Rivas, FJ Beltrán, W Chu, D Robert, Z Chen, Bi Xu, F Qi, J Kumirska, E M Siedlecka, A Ikhlaq, Two-dimensional layered carbon-based catalytic ozonation for water purification: Rational design of catalysts and an in-depth understanding of the interfacial reaction mechanismZ <i>Science of the Total Environment</i> , (2022) 155071
JA C El Bekkali, J Labrag, A Oulguidoum, I Chamkhi, A Laghzizil, J-M Nunzi, D. Robert, Porous ZnO/hydroxyapatite nanomaterials with effective photocatalytic and antibacterial activities for the degradation of antibiotics, <i>Nanotechnology for Environmental Engineering</i> 7 (1) (2022)
VK Sharma, X Ma, E Lichtfouse, D RobertNanoplastics are potentially more dangerous than microplastics, <i>Environmental Chemistry Letters</i> , 1-4, (2022) https://doi.org/10.1007/s10311-022-01539-1
S. Federici, Z. Ademovic, M.J.B. Amorim, M. Bigalke, M.C. Cocca, L.E. Depero, J. Dutta, W. Fritzsche, N.B. Hartmann, G. Kalčíkova, N. Keller et al., COST Action PRIORITY: An EU Perspective on Micro- and Nanoplastics as Global Issues, <i>Microplastics</i> 2022, 1(2), 282-290, doi.org/10.3390/microplastics1020020
P. Garcia-Muñoz, F. Fresno, C. Lefevre, D. Robert, N. Keller, Influence of the solid titanium source on the activity of La _{1-x} TixFeO ₃ photo-CWPO catalysts under UV-A light, <i>Catalysis Today</i> , 2022, https://doi.org/10.1016/j.cattod.2022.12.005 .
P. García-Muñoz, J. Ibanez, V. A. de la Peña O'Shea, N. Keller, F. Fresno, Solar hydrogen production from ethanol-water vapours over metal/TiO ₂ photocatalysts supported on β-SiC alveolar foams, <i>Catalysis Today</i> , doi.org/10.1016/j.cattod.2022.12.018
A. Iglesias-Juez, F. Fresno, J.M. Coronado, J. Highfield, A.M. Ruppert, N. Keller, Emerging high-prospect applications in photothermal catalysis, <i>Current Opinion in Green and Sustainable Chemistry</i> 2022, 37:100652
E. Soszka, M. Jędrzejczyk, C. Lefèvre, D. Ihiawakrim, N. Keller, A.M. Ruppert, TiO ₂ -supported Co catalysts for the hydrogenation of γ-valerolactone to 2-methyltetrahydrofuran: influence of the support, <i>Catal. Sci. Technol.</i> , 2022, 12, 5802 (Front Cover)
Microplastics (MPs) and nanoplastics (NPs): Introduction, P. Garcia-Munoz, D. Robert, A.M. Ruppert, N. Keller, <i>Current Developments in Biotechnology and Bioengineering</i> , doi.org/10.1016/B978-0-323-99908-3.00013-0
Methods of sampling and sample preparation for detection of microplastics and nanoplastics in the environment, Q. Tornero, M.-A. Dzuila, D. Robert, N. Keller, J. Rodriguez-Chueca, P. Garcia-Munoz, <i>Current Developments in Biotechnology and Bioengineering</i> , doi.org/10.1016/B978-0-323-99908-3.00004-X
Challenges and opportunities for microplastic and nanoplastic removal from industrial wastewater, D. Robert, P.H. Alle, N. Keller, M.-A. Dzuila, P. Garcia-Munoz, <i>Current Developments in Biotechnology and Bioengineering</i> , doi.org/10.1016/B978-0-323-99908-3.00009-9
Barreau, M., Chen, D., Zhang, J., ...Torelli, P., Zafeiratos, S. "Synthesis of Ni-doped ceria nanoparticles and their unusual surface reduction in hydrogen" <i>Materials Today Chemistry</i> , 2022, 26, 101011
Chen, D., Barreau, M., Turczyniak-Surdacka, S., ...Petit, C., Zafeiratos, S. "Ceria nanoparticles as promoters of CO ₂ electroreduction on Ni/YSZ: An efficient preparation strategy and insights into the catalytic promotion mechanism" <i>Nano Energy</i> , 2022, 101, 107564
Chen, D., Barreau, M., Dintzer, T., ...Gallet, J.-J., Zafeiratos, S. "Surface oxidation of Ni-cermet electrodes by CO ₂ and H ₂ O and how to moderate it" <i>Journal of Energy Chemistry</i> , 2022, 67, pp. 300–308
P. Berling, M. Dolci, S. Zafeiratos, T. Gehin, C. Leuvrey, C. Kiefer, D. Wagner, F. Boulmedais, B. P. Pichon "Chemical design of high performance SPR biosensor based on a dielectric nanoparticle assembly supported onto a gold thin film" <i>Sens. Diagn.</i> , 2022, 1, 1069-1079
V. L'hospital, S. Heyte, S. Paul, K. Parkhomenko, A.C. Roger Optimization of the continuous coprecipitation in a microfluidic reactor: Cu-based catalysts for CO ₂ hydrogenation into methanol" <i>Fuel</i> 319, 123689 (2022)

Z.G. Duma, X. Dyosiba, J. Moma, H.W. Langmi, B. Louis, K. Parkhomenko, N.M. Musyoka "Thermocatalytic hydrogenation of CO ₂ to methanol using Cu-ZnO bimetallic supported on Metal–Organic Frameworks" <i>Catalysts</i> 12 (2022) 401; doi.org/10.3390/catal12040401
C.G. Flores, H. Schneider, B. Louis "Lignin as a bio-sourced secondary template for ZSM-5 zeolite synthesis" <i>Catalysts</i> 12 (2022) 368; doi.org/10.3390/catal12040368
Q. Wu, S. Liang, T. Zhang, B. Louis, Q. Wang "Current advances in bimetallic catalysts for carbon dioxide hydrogenation to methanol" <i>Fuel</i> 313 (2022) 122963.
N. Israfilov, K. Soukup, B. Louis, J.M. Planeix "MOFs side chains as sources of supramolecular interactions: organic pollutants extraction from water." <i>New J. Chem.</i> 46 (2022) 8967-8970.
M. Teixeira, R.A. Maia, S. Shanmugam, B. Louis, S.A. Baudron "Impact of urea-based deep eutectic solvents on Mg-MOF-74 morphology and sorption properties" <i>Microporous Mesoporous Mater.</i> 343 (2022) 112148.
G. Lutzweiler, Y. Zhang, B. Louis "Marginal strategies of CO ₂ use as a reactant for sustainable chemistry and health applications" <i>Current Opinion Green and Sustainable Chemistry</i> 37 (2022) 100679.
Z.G. Duma, J. Moma, H.W. Langmi, B. Louis, K. Parkhomenko, N.M. Musyoka "Towards high CO ₂ conversion using Cu/Zn catalysts supported on aluminum fumarate Metal-Organic Framework for Methanol Synthesis" <i>Catalysts</i> 12 (2022) 1104.
Lalaut, A., Courson, C., Gallucci, K., Development of a high temperature CO ₂ sorbent based on hydrotalcite for a H ₂ -rich syngas production, <i>Waste and Biomass Valorization</i> , 13(1) 117-133, 2022
Ruiz, M., Schnitzer, A., Courson, C., Mauviel, G., Fe-doped olivine and char for in-bed elimination of gasification tars in an air-blown fluidised bed reactor coupled with oxidative hot gas filtration, <i>Carbon Resources Conversion</i> , 5, 271-288, 2022
Barisano, D., Canneto, G., Nanna, F., Villone, A., Fanelli, E., Freda, C., Grieco, M., Lotierz, A., Cornacchia, G., Braccio, G., Marcantonio, V., Bocci, E., Courson, C., Rep, M., Oudenhoven, T., Heidenreich, S., Foscolo, P.U., Investigation of an Intensified Thermo-Chemical Experimental Set-Up for Hydrogen Production from Biomass: Gasification Process Integrated to a Portable Purification System—Part II, <i>Energies</i> , 15(13) 4580, 2022
3D multiscale analysis of the hierarchical porosity in <i>Coscinodiscus</i> sp. diatoms using a combination of tomographic techniques Darouich, O; Baaziz, W; Ihiawakrim, D; Hirlimann, C; Spehner, D; Schultz, P; Poncet, H; Rouchon, V; Labidi, S; Petit, C; Levitz, P; Ersen, O <i>Nanoscale Advances</i> 4, 1587-1598 (2022) DOI10.1039/d1na00691f
Not Just Another Methanation Catalyst: Depleted Uranium Meets Nickel for a High-Performing Process Under Autothermal Regime Truong-Phuoc, L ; Nhut, JM ; Sall, S ; Tuci, G ; Rossin, A ; Papaefthimiou, V Duong-Viet, C Petit, C ; Arab, M ; Jourdan, A; <i>ChemSusChem</i> 2022,e202201859(1 of 14) DOI10.1002/cssc.202201859
Radio-frequency induction heating powered low-temperature catalytic CO ₂ conversion via bi-reforming of methane. Nguyen M. H., Phan M. C., Liu S., Pham-Huu C., Nguyen-Dinh L. <i>Chemical Engineering Journal</i> 430, 132934
Exohedrally functionalized carbon-based networks as catalysts for electrochemical syntheses. Tuci G., Rossin A., Zhang X., Pham-Huu C., Giambastiani G. <i>Current Opinion in Green and Sustainable Chemistry</i> 33, 100579
Assessing the Nature of Active Sites on Nanodiamonds as Metal-Free Catalysts for the EB-to-ST Direct Dehydrogenation Using a Catalytic Approach. Feng L., Ali S., Xu C., Cao S., Tuci G., Giambastiani G., Pham-Huu C., Liu Y. <i>ACS Catalysis</i> 12, 6119-6131

<p>Graphite Felt-Sandwiched Ni/SiC Catalysts for the Induction versus Joule-Heated Sabatier Reaction: Assessing the Catalyst Temperature at the Nanoscale.</p> <p>Truong-Phuoc L., Duong-Viet C., Tuci G., Rossin A., Nhut J.-M., Baaziz W., Ersen O., Arab M., Jourdan A., Giambastiani G., Pham-Huu C.</p> <p>ACS Sustainable Chemical Engineering 10, 622-632</p>
<p>Tailoring morphological and chemical properties of covalent triazine frameworks for dual CO₂ and H₂ adsorption.</p> <p>Tuci G., Iemhoff A., Rossin A., Yakhvarov D., Gatto M. F., Balderas-Xicoht-Encatl R., Zhang L., Hirscher M., Palkovits R., Pham-Huu C., Giambastiani G.</p> <p>International Journal of Hydrogen Energy 47, 8434-8445</p>
<p>Design of a novel naphtiridine-based covalent triazine framework for carbon dioxide capture and storage applications.</p> <p>Tuci G., Pugliesi M., Rossin A., Pham-Huu C., Berretti E., Giambastiani G.</p> <p>ChemistrySelect, 7, e202203560</p>
<p>Peptide Hydrogels Assembled from Enzyme-Adsorbed Mesoporous Silica Nanostructures for Thermoresponsive Doxorubicin Release</p> <p>Li, B.; Criado-Gonzalez, M.; Adam, A.; Bizeau, J.; Melart, C.; Carvalho, A.; Begin, S.; Begin, D.; Jierry, L.; Mertz, D.</p> <p>ACS Applied Nanomaterials 2 (2022) 120-125</p>
<p>Near-infrared responsive nanocomposite hydrogels made from enzyme-coated carbon nanotubes@ large pore mesoporous silica for remotely triggered drug delivery</p> <p>Bing L., Adam A., Criado-Gonzales M., Jierry L., Bizeau J., Chaumont A., Harlepp S., Mélart C., Bégin-Colin S., Bégin D., Mertz D.</p> <p>Materialia, 22 (2022) 101417</p>
<p>Enhanced dual photo/thermal initiating systems for preparation of few layer graphene filler-based composites and 3D printing</p> <p>Ma, Q., Schmitt, M., Zhang, Y., ...Begin, D., Lalevée, J.</p> <p>Materials Chemistry Frontiers, 2022</p>
<p>Shoueir, K., Mohanty, A., Janowska, I., Industrial molasses waste in the performant synthesis of few-layer graphene and its Au/Ag nanoparticles nanocomposites. Photocatalytic and supercapacitance applications,</p> <p>J. Clean. Prod. 351, 2022, 131540.</p>
<p>Aloui, L., Dintzer, T., Janowska, I., Fe Atom—Mixed Edges Fractal Graphene via DFT Calculation,</p> <p>ChemEngineering 6, 2022, 79.</p>
<p>Long-term anxiety and microbiota changes induced in mice by sublethal doses of acute sarin surrogate exposure.</p> <p>S. François, S. Mondot, Q. Gerard, R. Bel, J. Knoertzer, A. Berriche, S. Cavallero, R. Baati, C. Orset, G. Dal Bo, K. Thibault.</p> <p>Biomedecine 2022, 10, 1167</p>
<p>A new class of bi and trifunctional sugar oximes as antidotes against organophosphorus poisoning.</p> <p>Da Silva, Ophélie; Probst, Nicolas; Landry, Christophe; Hanak, Anne-Sophie; Warnault, Pierre ; Coisne, Caroline; Calas, André-Guilhem; Gosselet, Fabien; Courageux, Charlotte; Gastellier, Anne-Julie; Trancart, Marilène; Baati, Rachid ; Dehouck, Marie-Pierre ; Jean, Ludovic; Nachon, Florian; Renard, Pierre-Yves; Dias, José, J. Med. Chem. 2022, 65, 6, 4649-4666</p>
<p>Matériaux bio-inspirés : conception et utilisation d'enzymes artificielles pour la décontamination d'agents neurotoxiques.</p> <p>François Estour, Benedetta Cornelio, Capucine Chaar, Louise Hespel, Laurent Lebrun, R. Baati</p>
<p>Shoueir, K., Mohanty, A., Janowska, I., Industrial molasses waste in the performant synthesis of few-layer graphene and its Au/Ag nanoparticles nanocomposites. Photocatalytic and supercapacitance applications,</p> <p>J. Clean. Prod. 351, 2022, 131540.</p>
<p>Aloui, L., Dintzer, T., Janowska, I., Fe Atom—Mixed Edges Fractal Graphene via DFT Calculation,</p> <p>ChemEngineering 6, 2022, 79.</p>
<p>Al Jahdaly, B.A., Maghraby, Y.R., Ibrahim, A.H., Shouier, K.R., Taher, M.M. and El-Shabasy, R.M., 2022. Role of green chemistry in sustainable corrosion inhibition: a review on recent developments.</p> <p>Materials Today Sustainability, 20, 100242.</p>
<p>Al Jahdaly, B.A., Abu-Rayyan, A., Taher, M.M. and Shoueir, K., 2022. Phytosynthesis of Co₃O₄ nanoparticles as the high energy storage material of an activated carbon/Co₃O₄ symmetric</p>

supercapacitor device with excellent cyclic stability based on a Na ₂ SO ₄ aqueous electrolyte. ACS omega, 7(27), 23673-23684.
Abd-elnaby, A.E., Shoueir, K.R., Wazeer, W., Kashyout, A.E.H.B. and El-Kemary, M., 2022. Synthesis of binary nanohybrid-based polygonal Pd nanoparticles for proficient photoelectrochemical oxidation of methanol and urea. Journal of Materials Science: Materials in Electronics, 33(16), pp.13255-13270.
Asal, H.A., Shoueir, K.R., El-Hagrasy, M.A. and Toson, E.A., 2022. Controlled synthesis of in-situ gold nanoparticles onto chitosan functionalized PLGA nanoparticles for oral insulin delivery. International Journal of Biological Macromolecules, 209, pp.2188-2196.
El-Saeed, R.A., Hosny, R., Mubarak, M.F., Abdou, M.M. and Shoueir, K.R., 2022. An innovative SiO ₂ -pyrazole nanocomposite for Zn (II) and Cr (III) ions effective adsorption and anti-sulfate-reducing bacteria from the produced oilfield water. Arabian Journal of Chemistry, 15(8), p.103949.
Algabry, S.M., Shoueir, K.R., Kashyout, A.E.H.B. and El-Kemary, M., 2022. Engineering electrospun of in-situ plasmonic AgNPs onto PANI@ PVDF nanofibrous scaffold as back surface support for enhancing silicon solar cells efficiency with the electrical model assessment. Sustainable Materials and Technologies, 31, p.e00380.
Abdelnaby, M.A., Shoueir, K.R., Ghazy, A.A., Abdelhamid, S.M., El Kemary, M.A., Mahmoud, H.E., Baraka, K. and Abozahra, R.R., 2022. Synthesis and evaluation of metallic nanoparticles-based vaccines against Candida albicans infections. Journal of Drug Delivery Science and Technology, 68, p.102862.
El-Shabasy, R.M., Nayel, M.A., Taher, M.M., Abdelmonem, R. and Shoueir, K.R., 2022. Three wave changes, new variant strains, and vaccination effect against COVID-19 pandemic. International Journal of Biological Macromolecules.
El-Desouky, N., Shoueir, K., El-Mehasseb, I. and El-Kemary, M., 2022. Synthesis of silver nanoparticles using bio valorization coffee waste extract: photocatalytic flow-rate performance, antibacterial activity, and electrochemical investigation. Biomass Conversion and Biorefinery, pp.1-15.
Teaima, M.H., Elasaly, M.K., Omar, S.A., El-Nabarawi, M.A. and Shoueir, K.R., 2022. Wound healing activities of polyurethane modified chitosan nanofibers loaded with different concentrations of linezolid in an experimental model of diabetes. Journal of Drug Delivery Science and Technology, 67, p.102982.
Teaima, M.H., Elasaly, M.K., Omar, S.A., El-Nabarawi, M.A. and Shoueir, K.R., 2022. Wound healing activities of polyurethane modified chitosan nanofibers loaded with different concentrations of linezolid in an experimental model of diabetes. Journal of Drug Delivery Science and Technology, 67, p.102982.
Maurazi, H. El., Keller, V., Janowska, I. On the evolution of oxidative etching of few layer graphene (FLG) in FLG /TiO ₂ nanocomposites. Interfacial dipole signature and chemical shift in C1s X-ray photoemission spectra, Surfaces and Interfaces 36, 2023, 102510.
Stoerkler, Timothee; Laurent, Adele D. ; Jacquemin, Denis ; Ulrich, Gilles ; Massue, Julien Influence of ethynyl extension on the dual-state emission properties of pyridinium-substituted ESIPT fluorophores Dyes & Pigments 2022, 208, 110872
Stoerkler, Timothee; Pariat, Thibault; Laurent, Adele D. ; Jacquemin, Denis ; Ulrich, Gilles ; Massue, Julien Sterically Hindered 2-(2?-Hydroxyphenyl)benzoxazole (HBO) Emitters: Synthesis, Spectroscopic Studies, and Theoretical Calculations European Journal of Organic Chemistry 2022, e202200661
Durko-Maciag, Martyna; Jacquemin, Denis; Ulrich, Gilles; Massue, Julien; Mysliwiec, Jaroslaw Color-Tunable Multifunctional Excited-State Intramolecular Proton Transfer Emitter: Stimulated Emission of a Single Dye Chemistry - A European Journal 2022, 28, e202201327
Munch, Maxime; Ulrich, Gilles; Massue, Julien Synthesis and Optical Properties of Excited-State Intramolecular Proton Transfer (ESIPT) Emitters with Sulfobetaine Fragments Organic & Biomolecular Chemistry 2022, 20, 4640-4649

<p>Stoerkler, Timothee; Pariat, Thibault; Laurent, Adele D. ; Jacquemin, Denis; Ulrich, Gilles; Massue, Julien Excited-State Intramolecular Proton Transfer Dyes with Dual-State Emission Properties: Concept, Examples and Applications Molecules 2022, 27, 2443</p>
<p>Munch, Maxime; Colombain, Erika; Stoerkler, Timothee; Verite, Pauline M.; Jacquemin, Denis ; Ulrich, Gilles ; Massue, Julien Blue-Emitting 2-(2'-Hydroxyphenyl)benzazole Fluorophores by Modulation of Excited-State Intramolecular Proton Transfer: Spectroscopic Studies and Theoretical Calculations Journal of Physical Chemistry B 2022, 126(10), 2108-2118</p>
<p>Khelladi, Mustapha; Maret, Corentin; De Nicola, Antoinette; Ulrich, Gilles Fused BODIPY: Synthesis of diketobenzofuran derivatives towards DiBenzofuranBODIPYs Dyes & Pigments 2022, 198, 110032</p>
<p>Achelle, Sylvain ; Hodee, Maxime; Massue, Julien; Fihey, Arnaud; Katan, Claudine Diazine-based thermally activated delayed fluorescence chromophores Dyes and Pigments (2022), 200, 110157</p>
<p>Devault, D.A., Guillemin, J.P., Millet, M., Eymery, F., Hulin, M., Merlo, M., "Prosulfocarb at center stage!", Environmental Science and Pollution Research, 29, 61–67, 2022.</p>
<p>Baroudi, F., Al-Alam, J., Chimjarn, S., Haddad, K., Fajloun, Z., Delhomme, O., Millet, M., The use of <i>Helix aspersa</i> and <i>Pinus nigra</i> as environmental biomonitoring for the study of temporal air pollution variation in Northern Lebanon, International Journal of Environmental Research, 16, Article n°4, 2022.</p>
<p>Al-Alma, J., Fajloun, Z., Millet, M., Sabatier, J.-M., Chbani, A., The use of <i>Ulva lactuca</i> seaweed for post harvesting control of <i>Penicillium digitatum</i> in citrus fruits, Arabian Journal of Medicinal and Aromatic Plants, 8(1), 155-170, 2022.</p>
<p>Pelosi, C., Bertrand, C., Bretagnolle, V., Coeurdassier, M., Delhomme, O., Deschamps, M., Gaba, S., Millet, M., Nelieu, S., Fritsch, C., Glyphosate, its metabolite AMPA and glufosinate in soils and earthworms from French arable landscapes, Chemosphere, 301, 134672, 2022.</p>
<p>Galmiche, M., Rodrigues, A., Motsch, E., Delhomme, O., François, Y.-N., Millet, M., The use of pseudo-MRM for a sensitive and selective detection and quantification of Polycyclic Aromatic Compounds by Tandem Mass Spectrometry, Rapid Communication in mass spectrometry, 36(13), e9307, 2022, https://doi.org/10.1002/rcm.9307.</p>
<p>Dione, C. T., Diagne, I., Ndyaye, M., Millet, M., Diebakate, C., Ndyaye, B., Determination of the chromium (VI) content in five species of fish from Soumbédioune beach (Dakar / Senegal), Chemistry Africa, 5, 1845-1850, 2022, https://doi.org/10.1007/s42250-022-00332-5.</p>
<p>Al-Alam, J., Millet, M., Khoury, D., Rodrigues, A., Harb, M., Akoury, E., Tokajian, S., Wazne, M., Snails as temporal biomonitoring of the occurrence and distribution of pesticides in an apple orchard, Atmosphere, 13, 1185., 2022.</p>
<p>Dione, C. T., Delhomme, O., Ndyaye, Diebakate, C., M, Diagne, I., Ndyaye, B., Cisse, D., Hane, M., Diop, A., Millet, Application of the QuEChERS method for the determination of pesticides, PAHs and PCBs in fish in Senegal, Journal of Environmental Science and Health, Part A, 57(10), 869-879, 2022.</p>
<p>Al-Alam, J., Sonnette, A., Alleman, L. Y., Codeville, P., Millet, M., Pesticides in the indoor environment of residential houses in Strasbourg: A case study, International Journal of Environmental Research and Public Health, 19(21), Article n°14049, 2022.</p>
<p>F. Ramadzan Nursanto, J. Vaz-Ramos, O. Delhomme, S. Bégin, S. Le Calvé, Simultaneous monitoring of outdoor PAHs and particles in French peri-urban site during winter Saharan dust event, Atmosphere, 13 (9), 1435, 2022.</p>
<p>T. Mokalled, S. Le Calvé, N. Badaro-Salibaa, M. Abboud, R. Zaarour, W. Farah, J. Adjizian-Gérard, Atmospheric Dispersion Modelling of Gaseous Emissions from Beirut—International Airport Activities, AIMS Environmental Science, 9(5), 553-572 2022.</p>
<p>A. Grandjean, D. Bazin, F. Amiet, S. Le Calvé, Comparison of two Analytical Systems for Continuous Monitoring of ppb to ppm-levels of Formaldehyde in Air, Chemical Engineering Transactions, 95, 67-72, 2022.</p>

A. Becker, N. Lohmann, C. Serra, S. Le Calvé, Development of a Portable and Modular Gas Generator: Application to Formaldehyde Analysis, <i>Chemosensors</i> , 10, 131, 2022.
Follain N., Ren J., Pollet E., Avérous L. (2022) « Study of the water sorption and barrier performances of potato starch nano-biocomposites based on halloysite nanotubes » <i>Carbohydrate Polymers</i> , Vol. 277, ID N°118805
Wendels S., Balahura R., Dinescu S., Ignat S., Costache M., Avérous L. (2022) « Influence of the Macromolecular Architecture on the Properties of Biobased Polyurethane Tissue Adhesives » <i>European Polymer Journal</i> , Vol. 164, ID N°110968.
Duval A., Avérous L. (2022) « Dihydrolevoglucosenone (Cyrene™) as versatile biobased solvent for lignins fractionation, processing, and chemistry » <i>Green Chemistry</i> , Vol. 24, pp. 338-349
Walsh-Korb Z, Stelzner I, dos Santos Gabriel J., Eggert G., Avérous L. (2022) « Morphological study of bio-based polymers in the consolidation of waterlogged wooden objects » <i>Materials</i> , Vol. 15, ID N°681.
Lucherelli M.A., Duval A., Avérous L. (2022) « Biobased vitrimers: towards sustainable and adaptable performing polymer materials » <i>Progress in Polymer Science</i> , Vol. 127, ID N°101515
Duval A., Vidal D., Sarbu A., René W., Avérous L. (2022) « Synthesis of lignin-based polyols with ethylene carbonate. Towards industrial production of renewable polyurethane foams. » <i>Materials Today Chemistry</i> , Vol. 24, ID N°100793
Bazin A., Duval A., Averous L., Pollet E. (2022) « Synthesis of biobased photo-crosslinkable polyesters based on caffeic acid through selective lipase-catalyzed polymerization" » <i>Macromolecules</i> Vol. 55, N°11, pp. 4256–4267
Sosa-Santillán G.d.J., Zugasti-Cruz A., Enríquez-Medrano F.J., Avérous L., Pollet E., Valdés-Ramos K.G., Gomez C.G., Ricardo Romero M., Garcia-Lobato M.A., Pérez-Aguilar N.V., Oyervides-Muñoz E. (2022) « Synthesis, characterization and antibacterial activities of novel starch derivatives against <i>E. coli</i> and <i>S. aureus</i> » <i>Starch-Stärke</i> , Vol. 74, N° 7-8, ID N°2100142
Coste G., Negrell C., Averous L., Caillol S. (2022) "Green synthesis of biobased soft foams by Aza-Michael reaction" <i>ACS Sustainable Chemistry & Engineering</i> . Vol. 10, pp. 8549–8558
Duval A., Sarbu A., Dalmas F., Albertini D., Averous L. (2022) "2,3-butanediol as biobased chain extender for thermoplastic polyurethanes: influence of the stereochemistry on macromolecular architectures and properties" <i>Macromolecules</i> . Vol. 55, N°13, pp. 5371–5381
Torres-Rodriguez A., Avérous L., Pollet E., Sosa-Santillán G.d.J., Zugasti-Cruz A., Sierra-Rivera C.A., Pérez-Aguilar N.V., Garcia-Lobato M.A., Oyervides-Muñoz E. (2022) "Antimicrobial and Anticancer Potential of Novel Polyaspartate Derivatives Synthesized Via Quaternary Ammonium Grafting" <i>Journal of Applied Polymer Science</i> . Vol.139, N°38, ID N°e52907
Morinval A., Avérous L. (2022) « Systems based on biobased thermoplastics: from bioresources to biodegradable packaging applications » <i>Polymers Review</i> , Vol. 62, N°4, pp. 653-721
Wendels S., Balahura R., Dinescu S., Costache M., Avérous L. (2022) "Synthesis and properties of biobased polyurethane tissue adhesives from bacterial polyester", <i>Sustainable Materials and Technologies</i> . Vol. 34, ID N° e00515
A. Dodero, M. Castellano, S. Vicini, A. Hébraud, E. Lobry, J.-M. Nhut, G. Schlatter, Eco-Friendly Needleless Electrospinning and Tannic Acid Functionalization of Polyurethane Nanofibers with Tunable Wettability and Mechanical Performances, <i>Macromolecular Materials and Engineering</i> , 2022, 2100823
Dispiroacridine-indacenobisthiophenes positional isomers: Impact of the bridge on the physicochemical properties, J.-D. Peltier, B. Heinrich, B. Donnio, O. A. Ibraikulov, T. Heiser, N. Leclerc, J. Rault-Berthelot and C. Poriel, <i>Materials Chemistry Frontiers</i> , 2022, 6, 225-236
Single ether-based side chains in conjugated polymers: Towards power factors of 2.9 mW/m.K2, P. Durand, H. Zeng, T. Biskup, V. Vijayakumar, V. Untilova, C. Kiefer, B. Heinrich, L. Herrmann, M. Brinkmann and N. Leclerc, <i>Advanced Energy Materials</i> , 2022, 12, 2103049.

Selection of green solvents for organic photovoltaics by reverse engineering, J. Wang, I. Rodriguez-Donis, S. Thiebaud-Roux, O. A. Ibraikulov, N. Leclerc, P. Lévêque, V. Gerbaud, M. Kohlstdt and T. Heiser, <i>Molecular Systems Design & Engineering</i> , 2022, 7, 182-195.
Photo-degradation in bulk heterojunction organic solar cells using a fullerene or a non-fullerene derivative electron acceptor, A. Labiod, O. A. Ibraikulov, S. Dabos-Seignon, S. Ferry, B. Heinrich, S. Méry, S. Fall, T. Heiser, C. Cabanetos, N. Leclerc and P. Lévêque, <i>Organic Electronics</i> , 2022, 107, 106549
How Halogenation Impacts the Polymer Backbone Conformation: Learning from Combination of Solid-state MAS NMR and X-Ray Scattering, T. Olla, R. Jabbour, A. Labiod, O. Boyron, S. Méry, B. Heinrich, T. Heiser, D. Jacquemin, P. Lévêque, A. Lesage and N. Leclerc, <i>Advanced Functional Materials</i> , 2022, 32(18), 2204929
para-Azaquinodimethane based quinoidal polymers for opto-electronic applications: Impact of donor units on opto-electronic properties, B. Dyaga, S. Mayarambakam, O. A. Ibraikulov, N. Zimmermann, S. Fall, O. Boyron, T. Heiser, N. Leclerc, N. Berton and B. Schmaltz, <i>Materials Advances</i> , 2022, 3, 6853-6861
Simplified green-emitting single-layer phosphorescent organic light-emitting diodes with an external quantum efficiency of 22.7 %, F. Lucas, C. Brouillac, S. Fall, N. Zimmerman, D. Tondelier, B. Geffroy, N. Leclerc, T. Heiser, C. Quinton, J. Rault-Berthelot and C. Poriel, <i>Chemistry of Materials</i> , 2022, 34, 18, 8345-8355
Near Ultra-Violet absorbers for transparent organic solar cells, C. Mahmoudi, W. Muzuzu, S. Fall, Y. Zhong, C. M��lart, P. L��v��que, T. Heiser, N. S. Jaballah, M. Majdoub and N. Leclerc, <i>Dyes and Pigments</i> , 2022, 207, 110752
Optimizing chain alignment and preserving the pristine structure of single-ether based PBTTT helps improve thermoelectric properties in sequentially doped thin films, H. Zeng, P. Durand, S. Guchait, L. Herrmann, C. Kiefer, N. Leclerc and M. Brinkmann, <i>Journal of Materials Chemistry C</i> , 2022, 10, 15883
A. Becker, N. Israfilov, E. Ehrstein, I. Lara-Ibeas, J.M. Planeix, B. Louis, S. Le Calve "Adsorption of gaseous formaldehyde on Y zeolites and on metal-organic frameworks" <i>Microporous Mesoporous Mater.</i> 343 (2022) 112136.
Xiong Zhang, Lai Truong-Phuoc, Xuemei Lao, Vasiliki Papaefthimiou, Matteo Pugliesi, Giulia Tuci, Guiliano Giambastiani, Sergey Pronkin, and Cuong Pham-Huu, "Inducing atomically dispersed Cl-FeN 4 sites for ORRs in the SiO 2 -mediated synthesis of highly mesoporous N-enriched C-networks," <i>J. Mater. Chem. A</i> , vol. 10, no. 11, pp. 6153–6164, 2022, doi: 10.1039/D1TA09519F.
Xiong Zhang, Lai Truong-Phuoc, Tristan Asset, Sergey Pronkin, and Cuong Pham-Huu, "Are Fe–N–C Electrocatalysts an Alternative to Pt-Based Electrocatalysts for the Next Generation of Proton Exchange Membrane Fuel Cells?," <i>ACS Catal.</i> , vol. 12, no. 22, pp. 13853–13875, Nov. 2022, doi: 10.1021/acscatal.2c02146.
Redox Transitions in Pseudocapacitor Materials: Criteria and Ruling Factors. Pronkin S. N., Shokina N. Y., Pham-Huu C. IntechOpen Book Series "Redox Chemistry-From Molecules to Energy Storage", DOI: http://dx.doi.org/10.5772/intechopen.104084
Ceria nanoparticles as promoters of CO2 electroreduction on Ni/YSZ: An efficient preparation strategy and insights into the catalytic promotion mechanism Dingkai Chen, Mathias Barreau, Sylwia Turczyniak-Surdacka, Kamil Sobcza, Marcin Strawski, Annie Le Gal La Salle, Anna Efimenko , Detre Teschner Corinne Petit, Spyridon Zafeiratos, <i>Nano Energy</i> Volume 101, October 2022, 107564
Inducing atomically dispersed Cl–FeN4 sites for ORRs in the SiO2-mediated synthesis of highly mesoporous N-enriched C-networks. Zhang X., Truong-Phuoc L., Liao X., Papaefthimiou V., Pugliesi M., Tuci G., Giambastiani G., Pronkin S., Pham-Huu C. <i>Journal of Materials Chemistry A</i> 10, 6153-6164

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Zhang X., Truong-Phuoc L., Asset T., Pronkin S., Pham-Huu C.
ACS Catalysis, 12, 13853–13875

Maurazi,H. El., Keller, V., Janowska, I.On the evolution of oxidative etching of few layer graphene (FLG) in FLG /TiO₂ nanocomposites. Interfacial dipole signature and chemical shift in C1s X-ray photoemission spectra, Surfaces and Interfaces 36, 2023, 102510.

Ceugniet, Fabien; Huaulme, Quentin; Sutter, Alexandra; Jacquemin, Denis ; Leclerc, Nicolas ; Ulrich, Gilles Hetero-Substituted $\alpha\beta$ -Fused BODIPY Chemistry - A European Journal 2022, 28, e202200130

Hetero-substituted $\alpha\beta$ -fused BODIPY, F. Ceugniet, Q. Huaulmé, A. Sutter, D. Jacquemin, N. Leclerc and G. Ulrich, Chemistry – a European Journal, 2022, e20220013.

A. Becker, N. Israfilov, E. Ehrstein, I. Lara-Ibeas, J.-M. Planeix, B. Louis, S. Le Calvé, Adsorption of gaseous formaldehyde on Y zeolites and on Metal-Organic Frameworks, Microporous and Mesoporous Materials, 343, 112136, 2022.