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Activités :

- **Chargé de Recherche** – UCCS UMR 8181 CNRS-Université de Lille

Au sein de l'équipe "MATCAT", je suis responsable des activités de recherche portant sur la préparation de matériaux microporeux (zéolithes, MOFs) pour la catalyse et l'adsorption, et la mise en forme de catalyseurs selon des procédés conventionnels (granulation, pastillage, extrusion) et non-conventionnels.

- **Co-Responsable de pôle** – UPCAT, Institut Chevreul FR 2638 CNRS-Université de Lille

UPCAT est un pôle de la plateforme PTICM (Plateforme d'Ingénierie Technologique de la Chimie et des Matériaux) dédié à l'étude des étapes de synthèse et de mise en forme de matériaux pour la catalyse hétérogène, et permettant d'atteindre l'échelle pré-pilote. Plus d'informations : https://upcat.univ-lille.fr/.

- **Vice-président** – Société Chimique de France (SCF) & Réseau des Jeunes chimistes de la SCF (RJ-SCF)

En tant que membre du bureau national de la SCF, je suis responsable de la communication et des jeunes chimistes (~ 30 % des adhérents à la SCF).

Formation académique et expériences professionnelles :

- **2009** Master en Chimie Environnementale (Université de Savoie, Chambéry - FRANCE)
- **2012** Doctorat en Chimie des Matériaux (Université de Haute-Alsace, Mulhouse - FRANCE)
- **2013** Jeune Chercheur (Saint-Gobain Recherche Provence, Cavaillon - FRANCE)
- **2014** Ingénieur Recherche & Développement (Huntsman, Calais - FRANCE)
- **2015** Jeune Chercheur (IRCELYON – UMR 5256 CNRS, Villeurbanne - FRANCE)
- **2017** Jeune Chercheur (IMEC – FR 2638 CNRS, Villeneuve d'Ascq - FRANCE)
- **2018** Jeune Chercheur (iCeMS, Kyoto University - JAPAN)
- **2019** Chercheur CNRS (UCCS – UMR 8181 CNRS, Villeneuve d'Ascq - FRANCE)
- **2023** Habilitation à Diriger la Recherche (Université de Lille, Villeneuve d'Ascq - FRANCE)

Résumé de la production scientifique :

Articles publiés avec comité de relecture : 29	**Dont articles publiés depuis 2019 : 18**
Citations totales: 817[1]	**Dont articles de revue publiés depus 2019 : 2**

Articles publiés dans des journaux à comité de relecture (* auteur de correspondance) :

[29] *Hierarchically Porous ZIF-67/Chitosan Beads with High Surface Area and Strengthened Mechanical Properties: Application to CO_2 Storage.*
N. Hammi*, N. Couzon, T. Loiseau, C. Volkringer, A. El Kadib, S. Royer, J. Dhainaut*, **Materials Today Sustainability** (2023) 100394

[28] *Milling-Assisted Loading of drugs into mesoporous silica carriers: A green and innovative method for fine-tuning the drug dosage and delivery.*
B. Moutamenni, N. Tabary, A. Mussi, J. Dhainaut, C. Ciotonea, A. Fadel, L. Paccou, J.-P. Dacquin, Y. Guinet, A. Hédoux*, **Pharmaceutics** 15 (2023) 390

[1] Données issues de Publons, 15/02/2023.

[27] *Unraveling the critical role of Si-OH in Pt/SiO_2 for room temperature HCHO oxidation: An experimental and DFT study.*
S. Chen, S. Gueddida, M. Badawi, S. Lebègue, J.-M. Giraudon, J. Dhainaut, S. Royer*, J.-F. Lamonier*, **Applied Catalysis B : Environmental** 331 (2023) 122672

[26] *Experimental and Ab initio investigation on the effect of CO and CO_2 during hydrodeoxygenation of m-cresol over Co/SBA-15.*
Camila A. Teles, Saber Gueddida, Roger Deplazes, Carmen Ciotonea, Nadia Canilho, Sébastien Lebègue, Jérémy Dhainaut, Michael Badawi, Frédéric Richard*, Sébastien Royer*, **ChemCatChem** (2023) e202201327

[25] *Enhancing ammonia catalytic production over spatially confined cobalt molybdenum nitride nanoparticles in SBA-15.*
A. Sfeir, C.A. Teles, C. Ciotonea, M. Reddy, M. Marinova, J. Dhainaut, A. Löfberg, J.-P. Dacquin, S. Royer*, S. Laassiri*, **Applied Catalysis B : Environmental** 325 (2023) 122319

[24] *Water-based synthesis of Zr_6-based metal-organic framework nanocrystals with sulfonate functions: Structural features and application to fructose dehydration.*
B. Yeskendir, P.M. de Souza, P. Simon, R. Wojcieszak, C. Courtois, Y. Lorgouilloux, S. Royer, J.-P. Dacquin, J. Dhainaut*, **ACS Applied Nano Materials** 5 (2022) 14561

[23] *Porous textile composites (PTC) for the removal and the decomposition of chemical warfare agents (CWAs) – A review.*
N. Couzon, J. Dhainaut, E. Moreau, R.-M. Sauvage, C. Campagne, S. Royer, T. Loiseau, C. Volkringer*, **Coordination Chemistry Reviews** 467 (2022) 214598

[22] *Assembly of SBA-15 into Hierarchical porous monoliths replicating polymeric scaffolds.*
R. Yildiz, Y. Lorgouilloux*, J. Dhainaut*, C. Ciotonea, J.-P. Dacquin, S. Royer, C. Courtois, **Microporous and Mesoporous Materials** 337 (2022) 111908

[21] *Extrusion-spheronization of UiO-66 and UiO-66_NH_2 into robust-shaped solids and their use for gaseous molecular iodine, xenon, and krypton adsorption.*
A. Abramova, N. Couzon, M. Leloire, P. Nerisson, L. Cantrel, S. Royer, T. Loiseau, C. Volkringer, J. Dhainaut*, **ACS Applied Materials & Interfaces** 14 (2022) 10669

[20] *From metal-organic framework powders to shaped solids: Recent developments and challenges.*
B. Yeskendir, J.-P. Dacquin, Y. Lorgouilloux, C. Courtois, S. Royer, J. Dhainaut*, **Materials Advances** 2 (2021) 7139

[19] *Stability and Radioactive Gaseous Iodine-131 Retention Capacity of Binderless UiO-66-NH_2 Granules under Severe Nuclear Accidental Conditions.*
M. Leloire, J. Dhainaut, P. Devaux, O. Leroy, H. Desjonqueres, S. Poirier, P. Nerisson, L. Cantrel, S. Royer, T. Loiseau, C. Volkringer*, **Journal of Hazardous Materials** 416 (2021) 125890

[18] *Playing on 3D spatial distribution of Cu-Co (oxide) nanoparticles in inorganic mesoporous sieves: Impact on catalytic performance toward the cinnamaldehyde hydrogenation.*
C. Ciotonea, A. Chirieac, B. Dragoi, J. Dhainaut, M. Marinova, S. Pronier, S. Arii-Clacens, J.-P. Dacquin, E. Dumitriu, A. Ungureanu, S. Royer*, **Applied Catalysis A: General** 623 (2021) 118303

[17] *$La_{1-x}(Sr, Na, K)_xMnO_3$ Perovskites for HCHO Oxidation: The Role of Oxygen Species on the Catalytic Mechanism.*
Y. Xu, J. Dhainaut*, J.-P. Dacquin, A.-S. Mamede, M. Marinova, J.-F. Lamonier, H. Vezin, H. Zhang*, S. Royer, **Applied Catalysis B: Environmental** 287 (2021) 119955

[16] *Manipulating the Physical States of Confined Ibuprofen in SBA-15 based Drug Delivery Systems Obtained by Solid-State Loading: Impact of the Loading Degree.*
B. Malfait, N.T. Correia, C. Ciotonea, J. Dhainaut, J.-P. Dacquin, S. Royer, N. Tabary, Y. Guinet, A. Hédoux*, **The Journal of Chemical Physics** 153 (2020) 154506

[15] *Hierarchical Porous ε-MnO_2 from Perovskite Precursor: Application to the Formaldehyde Total Oxidation.*
Y. Xu, J. Dhainaut, G. Rochard, J.-P. Dacquin, A.-S. Mamede, J.-M. Giraudon, J.-F. Lamonier, H. Zhang*, S. Royer*, **Chemical Engineering Journal** 388 (2020) 124146

[14] *Phyllosilicate-derived Nickel-Cobalt Bimetallic Nanoparticles for the Catalytic Hydrogenation of Imines, Oximes and N-Heteroarenes.*
C. Ciotonea, N. Hammi, J. Dhainaut, M. Marinova, A. Ungureanu, A. El Kadib, C. Michon, S. Royer*, **ChemCatChem** 12 (2020) 4652

[13] *Flash Catalytic Pyrolysis of Polyethylene over (Alumino)Silicate Materials.*
S. Klaimy, C. Ciotonea, J. Dhainaut, S. Royer, M. Casetta, S. Duquesne, G. Tricot, J.-F. Lamonier*, **ChemCatChem** 12 (2020) 1109

[12] *Formulation of Metal-Organic Framework Inks for the 3D Printing of Robust Microporous Solids toward High-Pressure Gas Storage and Separation.*
J. Dhainaut*, M. Bonneau, R. Ueoka, K. Kanamori, S. Furukawa*, **ACS Applied Materials & Interfaces** 12 (2020) 10983

[11] *Synthesis and shaping scale-up study of functionalized UiO-66 MOF for ammonia air purification filters.*
Y. Khabzina, J. Dhainaut, M. Ahlhelm, H.-J. Richter, H. Reinsch, N. Stock, D. Farrusseng*, **Industrial & Engineering Chemistry Research** 57 (2018) 8200

[10] *Systematic study of the impact of MOF densification into pellets on textural and mechanical properties.*
J. Dhainaut, C. Avci-Camur, J. Troyano, A. Legrand, J. Canivet, I. Imaz, D. Maspoch, H. Reinsch, D. Farrusseng*, **CrystEngComm** 19 (2017) 4211

[09] *A reliable method for the preparation of multiporous alumina monoliths by ice-templating.*
J. Dhainaut, S. Deville, I. Amirouche, M. Klotz*, **Inorganics** 4 (2016) 6

[08] *The use of original structure-directing agents for the synthesis of EMC-1 zeolite.*
T.J. Daou, J. Dhainaut, A. Chappaz, N. Bats, B. Harbuzaru, H. Chaumeil, A. Defoin, L. Rouleau, J. Patarin*, **Oil & Gas Science and Technology** 70 (2015) 447

[07] *Freezing-induced ordering of block copolymer micelles.*
J. Dhainaut, G. Piana, S. Deville, C. Guizard, M. Klotz*, **Chemical Communications** 50 (2014) 12572

[06] *Synthesis of a new diazacrown ether compound interconnected with an azacrown ether and decorated with a long lipophilic chain.*
J. Dhainaut, A. Chappaz, D. Bernard, H. Chaumeil, T.J. Daou, A. Defoin, L. Rouleau, N. Bats, B. Harbuzaru, J. Patarin*, **Synthetic Communications** 44 (2014) 1888

[05] *Synthesis of FAU and EMT-type zeolites using structure-directing agents specifically designed by molecular Modelling.*
J. Dhainaut, T.J. Daou, A. Chappaz, N. Bats, B. Harbuzaru, G. Lapisardi, H. Chaumeil, A. Defoin, L. Rouleau, J. Patarin*, **Microporous and Mesoporous Materials** 174 (2013) 117

[04] *One-pot structural conversion of magadiite into MFI zeolite nanosheets using mononitrogen surfactants as structure and shape-directing agents.*
J. Dhainaut, T.J. Daou, Y. Bidal, N. Bats, B. Harbuzaru, G. Lapisardi, H. Chaumeil, A. Defoin, L. Rouleau, J. Patarin*, **CrystEngComm** 15 (2013) 3009

[03] *The influence of L-lysine and PDADMA on the crystal size and porosity of zeolite Y material.*
J. Dhainaut, T.J. Daou, N. Bats, B. Harbuzaru, G. Lapisardi, L. Rouleau, J. Patarin*, **Microporous and Mesoporous Materials** 170 (2013) 346

[02] *Hierarchical macroporous-mesoporous SBA-15 sulfonic acid catalysts for biodiesel synthesis.*
J. Dhainaut, J.-P. Dacquin, A.F. Mee, K. Wilson*, **Green Chemistry** 12 (2010) 296

[01] *An efficient route to highly organized, tunable macroporous-mesoporous alumina.*
J.-P. Dacquin, J. Dhainaut, D. Duprez, S. Royer, A.F. Lee, K. Wilson*, **Journal of the American Chemical Society** 131 (2009) 12896

Preprints :
[01] *Borophene: A piezocatalyst.*
Aditi Sharma, Upasana Bhardwaj, Maya Marinova, Antonio Da Costa, Anthony Ferri, Sebastien Royer, Jérémy Dhainaut, Himmat Singh Kushwaha, **ChemRxiv** (DOI: 10.26434/chemrxiv-2023-2lhk3)