

DOLBECQ Anne

Senior scientist (DR1 CNRS)

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Diplomas

2003: **Accreditation to supervise research (HDR)** University of Versailles Saint Quentin.
1995: **PhD in Inorganic Chemistry**, University Paris Sud Orsay, France.
1992: Agrégation de Physique, option Chimie
Former student of the Ecole Normale Supérieure, Paris (1988-1992)

Awards

2000: CNRS bronze medal

Research Experience

Since 2009: **Senior scientist, DR CNRS**, Institut Lavoisier de Versailles, MIM group

Research topics:

- Multifunctional molecular polyoxometalates
- Metal Organic Frameworks with polyoxometalates building units (POMOFs)
- Encapsulation of polyoxometalates into Metal Organic Frameworks (POM@MOFs)

1997 – 2009: **Junior scientist, CR CNRS (section n°14)**, Institut Lavoisier de Versailles

1996 – 1997: **Teaching and research assistant position (ATER)** in the group of Prof. M. Verdaguer, Laboratoire de Chimie des Métaux de Transition, Université Paris VI.
Research topic: Synthesis of Co-Fe Prussian blue analogues.

1995 – 1996: **Post-doctoral researcher** in the group of Prof. A. M. Stacy at the University of California at Berkeley, USA (Lavoisier fellowship). Research topic: Molten salt synthesis, structural and magnetic characterization of new cobalt and rhodium oxides.

1992 – 1995: **Doctoral researcher** (supervision P. Batail) at the Univ. Paris Sud Orsay. Research topic: Organic-inorganic constructions based on functionalized radical salts.

133 publications, 1 patent

h-index: 48, > 7000 citations (excluding self-citations)

Administration and Collective Responsibilities

Since 2015: Deputy Director of Institut Lavoisier de Versailles

2008 – 2012: Member of the “Comité National du CNRS”, section n°14

Publications 2016 - 2020

2020----

- P26 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, **A. DOLBECQ**, C. SASSOYE, C. MELLOTT-DRAZNIIEKS, *Chem. Commun.* 2020, 56, 10143-10146, Thematic issue « Hybrid Functional Materials ».
- P25 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 CO₂ Reduction. Y. BENSEGHIR, A. LEMARCHAND, M. DUGUET, P. MIALANE, M. GOMEZ-MINGOT, C. ROCH-MARCHAL, T. PINO, M.-H. HA-THI, M. HAOUAS, M. FONTECAVE, **A. DOLBECQ**, C. SASSOYE, C. MELLOTT-DRAZNIIEKS, *J. Am. Chem. Soc.* 2020, 142, 9428-9438.
- P24 Aerobic Oxidation Catalyzed by Polyoxometalates Associated to an Artificial Reductase at Room Temperature and in Water. A. NAIM, Y. CHEVALIER, Y. BOUZIDI, P. GAIROLA, P. MIALANE, **A. DOLBECQ**, F. AVENIER, J.-P. MAHY, *Inorg. Chem. Front.* 2020, 7, 2362-2369.
- P23 Directing the solid-state photochromic and luminescent properties of spiromolecules with Dawson and Anderson polyoxometalate units. H. DRIDI, A. BOULMIER, P. BOLLE, **A. DOLBECQ**, P. MIALANE, J.-N. REBILLY, F. BANSE, L. RUHLMANN, H. SERIER-BRAULT, R. DESSAPT, O. OMS, *J. Mat. Chem. C.* 2020, 8, 637-649. LABEX Hachem -

2019----

- P22 Thin Films of Fully Noble Metal-Free POM@MOF for Photocatalytic Water Oxidation. G. PAILLE, M. GOMEZ-MINGOT, C. ROCH-MARCHAL, M. HAOUAS, Y. BENSEGHIR, T. PINO, M.-H. HA-THI, G. LANDROT, P. MIALANE, M. FONTECAVE, **A. DOLBECQ**, C. MELLOTT-DRAZNIIEKS, *ACS Appl. Mat. Int.* 2019, 11, 47837-47845.
- P21 One-pot Synthesis of a New Generation of Hybrid Bisphosphonate Polyoxometalate Gold Nanoparticles as Antibiofilm Agents. S. TOMANE, E. LOPEZ-MAYA, S. BOUJDAY, V. HUMBLLOT, J. MARROT, N. RABASSO, J. CASTELLS-GIL, C. SICARD, **A. DOLBECQ**, P. MIALANE, A. VALLEE, *Nanoscale Adv.* 2019, 1, 3400-3405.
- P20 Photoactive Polyoxometalate/DASA Covalent Hybrids for Photopolymerization in the Visible Range. A. BOULMIER, M. HAOUAS, S. TOMANE, L. MICHELY, **A. DOLBECQ**, A. VALLEE, V. BREZOVA, D.-L. VERSACE, P. MIALANE, O. OMS *Chem Eur J.* 2019, 25, 14349-14357.
- P19 An Unprecedented {Ni₁₄SiW₉} Hybrid Polyoxometalate with High Photocatalytic Hydrogen Evolution Activity. G. PAILLE, A. BOULMIER, A. BENSALD, M.-H. HA-THI, T.-T. TRAN, T. PINO, J. MARROT, E. RIVIERE, C. H. HENDON, O. OMS, M. GOMEZ-MINGOT, M. FONTECAVE, C. MELLOTT-DRAZNIIEKS, **A. DOLBECQ**, P. MIALANE, *Chem. Commun.* 2019, 55, 4166-4169.

2018----

- P18 Polymorphism and Structural Filiations in New Supramolecular Assemblies of Phosphorescent Cyclometalated Ir(III) Complexes and Polyoxometalates. P. BOLLE, H. SERIER-BRAULT, A. BOULMIER, M. PUGET, C. MENET, O. OMS, J. MARROT, P. MIALANE, **A. DOLBECQ**, R. DESSAPT, *Cryst. Growth Des.* 2018, 18, 7426-7434.
- P17 A Multifunctional Dual-Luminescent Polyoxometalate@Metal Organic Framework EuW₁₀@UiO-67 Composite as Chemical Probe and Temperature Sensor. W. SALOMON, **A. DOLBECQ**, C. ROCH-MARCHAL, G. PAILLE, R. DESSAPT, P. MIALANE, H. SERIER-BRAULT, *Frontiers in Chemistry* 2018, 6, 425. Special Issue "Polyoxometalates in Catalysis, Biology and Materials Science"

- P16 Bicapped Keggin Polyoxomolybdates: Discrete Species and Investigations on the Electronic Delocalization in a Chain Compound. W. SALOMON, E. RIVIERE, X. LOPEZ, N. SUAUD, P. MIALANE, M. HAOUAS, A. SAAD, J. MARROT, **A. DOLBECQ**, *Dalton Trans.* 2018, 47, 10636-10645. Special Issue "New Talent: Europe",
- P15 Simple and Efficient Polyoxomolybdate-Mediated Synthesis of Novel Graphene and Metal Nanohybrids for Versatile Applications. S. ZHANG, R. LIU, S. LI, **A. DOLBECQ**, P. MIALANE, L. SUO, L. BI, B. ZHANG, T. LIU, C.-X. WU, L.-K. YAN, Z. S. WU, G. ZHANG, B. KEITA, *J. Colloid and Interface Sci.* 2018, 514, 507-516.
- P14 Anderson-type Polyoxometalates Functionalized by Tetrathiafulvalene Groups : Synthesis, Spectroelectrochemical Studies and NLO Properties. A. BOULMIER, A. VACHER, D. ZANG, S. YANG, A. SAAD, J. MARROT, O. OMS, P. MIALANE, I. LEDOUX, L. RUHLMANN, D. LORCY, **A. DOLBECQ** *Inorg. Chem.* 2018, 57, 3742-3752.
- P13 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. MELLOTT-DRAZNIKS, **A. DOLBECQ**, *J. Am. Chem. Soc.* 2018, 140, 3613-3618.
- 2017 ----
- P12 High Oxygen Reduction Reaction Performances of Cathode Materials Combining Polyoxometalates, Coordination Complexes and Carbonaceous Supports. S. ZHANG, O. OMS, L. HAO, R. LIU, M. WANG, Y. ZHANG, H.-Y. HE, **A. DOLBECQ**, J. MARROT, B. KEITA, L. ZHI, P. MIALANE, B. LI, G. ZHANG. *ACS Appl. Mater. Interfaces*, 2017, 9, 38486-38498.
- P11 The design of New Photochromic Polymers Incorporating Covalently or Ionically Linked Spiropyran/Polyoxometalate Hybrids. I. BAZZAN, P. BOLLE, O. OMS, H. SALMI, N. AUBRY-BARROCA, **A. DOLBECQ**, H. SERIER-BRAULT, R. DESSAPT, P. ROGER, P. MIALANE. *J. Mat. Chem. C* 2017, 5, 6343-6351.
- P10 Anticancer Activity of Polyoxometalate Bisphosphonate Complexes : Synthesis, Characterization, *In Vitro* and *In Vivo* Results. A. BOULMIER, X. FENG, O. OMS, P. MIALANE, J. MARROT, E. RIVIERE, C. J. SHIN, J. YAO, T. KUBO, E. OLDFIELD, **A. DOLBECQ**. *Inorg. Chem.* 2017, 56, 7558-7565.
- P9 Cobalt Based Water Oxidation Catalysis with photogenerated Ru(bpy)₃³⁺: Different Kinetics and Competent Species Starting from a Molecular Polyoxometalate and Metal Oxide Nanoparticles Capped with a Bisphosphonate Alendronate Pendant, I. BAZZAN, A. VOLPE, **A. DOLBECQ**, M. NATALI, A. SARTOREL, P. MIALANE, M. BONCHIO, *Catal. Today*, 2017, 290, 39. Special Issue "Photo and Electrocatalytic Water Splitting"
- P8 Photochromism and Dual-Color Fluorescence in a Polyoxometalate-benzospiropyran Molecular Switch. A. PARROT, A. BERNARD, A. JACQUART, S. A. SERAPIAN, C. BO, E. DERAT, O. OMS, **A. DOLBECQ**, A. PROUST, R. METIVIER, P. MIALANE, G. IZZET, *Angew. Chem. Int. Ed. Engl.* 2017, 56, 4872-4876.
- P7 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, G. NOCTON, C. MELLOTT-DRAZNIKS, M. FONTECAVE, **A. DOLBECQ**, *Cryst. Growth Des.* 2017, 17, 1600-1609.
- 2016 ----
- P6 Drastic Solid-State Luminescence Color Tuning of an Archetypal Ir(III) Complex using Polyoxometalates and its Application as a Vapoluminescence Chemosensor. P. BOLLE, H. SERIER-BRAULT, R. GENOIS, E. FAULQUES, A. BOULMIER, O. OMS, M. LEPELTIER, J. MARROT, **A. DOLBECQ**, P. MIALANE, R. DESSAPT, *J. Mat. Chem. C.*, 2016, 4, 11392-11395.
- P5 Light- and Solvent-Controlled Self-Assembly Behavior of Spiropyran-Polyoxometalate-Alkyl Hybrid Molecules, Y. CHU, A. SAAD, P. YIN, J. WU, O. OMS, **A. DOLBECQ**, P. MIALANE, T. LIU, *Chem. Eur. J.*, 2016, 22, 11756-11762.

- P4 Single-Molecule Magnet Behaviour of Individual Polyoxometalate Molecules Incorporated within Biopolymer or Metal Organic Framework Matrices. W. SALOMON, Y. LAN, E. RIVIERE, S. YANG, C. ROCH-MARCHAL, A. DOLBECQ, C. SIMONNET-JEGAT, N. STEUNOU, N. LECLERC-LARONZE, L. RUHLMANN, T. MALLAH, W. WERNSDORFER, P. MIALANE, *Chem. Eur. J.*, 2016, 22, 6564-6574 (Hot Paper, Cover Picture).
- P3 Studies of the Effectiveness of Bisphosphonate and Vanadium-Bisphosphonate Compounds *in vitro* against *Axenic Leishmania tarentolae*. A. T. CHRISTENSEN, C. C. McLAUCHLAN, **A. DOLBECQ**, P. MIALANE, M. A. JONES, *Oxid. Med. Cell Longev.*, 2016, 9025627. Special issue « Vanadium Toxicological Potential versus its Pharmacological Activity : New Developments and Research ».
- P2 An All-inorganic Polyoxometalate-Polyoxocation Chemical Garden. L. J. POINTS, G. J. T. COOPER, **A. DOLBECQ**, P. MIALANE, L. CRONIN, *Chem Commun.*, 2016, 52, 1911-1914.
- P1 Heteroanionic Materials Based on Copper Clusters, Bisphosphonates and Polyoxometalates : Magnetic Properties and Comparative Electrocatalytic NO_x Reduction Studies O. OMS, S. YANG, W. SALOMON, J. MARROT, **A. DOLBECQ**, E. RIVIERE, A. BONNEFONT, L. RUHLMANN, P. MIALANE, *Inorg. Chem.*, 2016, 55, 1551-1561.