**DOLBECQ Anne** **Senior scientist (DR1 CNRS)**

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Université de Versailles Saint-Quentin-en-Yvelines
Université Paris-Saclay, France

## 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
- Nanomaterials functionalized by polyoxometalates for biological applications
- Metal-Organic Frameworks-based materials with optical or photocatalytic properties

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.

## 148 publications, 1 patent

h-index: 53, > 9000 citations (excluding self-citations)

## Administration and Collective Responsibilities

Since 2015 : Deputy Director of Institut Lavoisier de Versailles
2022 – 2025 : Member of the steering committee of DIM MaTerRe
2019 - 2023 : Member of the Conseil Scientifique, Institut de Chimie INC CNRS
2008 – 2012: Member of the “Comité National du CNRS”, section n°14

## Publications 2020 - 2024

*The review articles are indicated in blue*

2024---

P17 Chemo-Phototherapeutic Effect of Gold Nanostars Synthesized from Polyoxometalates. J. F. RAMIREZ HENAO, S. BOUJDAY, C. WILHELM, B. BOUVET, S. TOMANE, C. GUILHELM, F. BEN ROMDHANE, A. MICHE, A. DOLBECQ, P. MIALANE, A. VALLEE, under review

P16 Zr-based MOF-545 Metal-Organic Framework Loaded with Highly Dispersed Small Size Ni Nanoparticles for $CO_2$ Methanation. H. CHEN, J.-B. BURBACH, H. N. TRAN, A. ROBINSON, F. BEN ROMDHANE, M. FREGNAUX, F. PENAS-HIDALGO, A. SOLE-DAURA, P. MIALANE, M. FONTECAVE, **A. DOLBECQ**, C. MELLOT-DRAZNIEKS, *ACS Applied Mat. Interf.* 2024, 16, 12509.

P15 Photocatalytic $CO_2$ reduction by Ni-substituted polyoxometalates: structure-activity relationships and mechanistic insights. K. TALBI, F. PENAS-HIDALGO, A. L. ROBINSON, P. GOTICO, W. LEIBL, P. MIALANE, M. GOMEZ-MINGOT, M. FONTECAVE, A. SOLE-DAURA, C. MELLOT-DRAZNIEKS, **A. DOLBECQ**, *Applied Catal. B Env.* 2024, 345, 123681.

2023---

P14 Structure and Electronic Properties of Large Oligomeric Heterometallic 3d/CeIV Polyoxometalates. O. OMS, N. MAITY, J. MARROT, J. YU, E. RIVIERE, W. SHEPARD, Y. BENSEGHIR, K. TALBI, **A. DOLBECQ**, M.-H. HA-THI, J. RAMON, P. MIALANE, *Inorg. Chem*. 2023, 62, 18856-18863.

P13 Shifting from UV to visible-light the activity of organic photo-initiators via the covalent grafting of polyoxometalates. Z. El HAJJ, L. PIERAU, J.-P. MALVAL, J. MARROT, P.-E. MAZERAN, D. NAOUFAL, M.-H. HA-THI, K. STEENKESTE, **A. DOLBECQ**, S. FLOQUET, O. OMS, D.-L. VERSACE, P. MIALANE, *Macromolecules* 2023, 56, 6105-6116.

2022----

P12 Unveiling the mechanism of the photocatalytic reduction of $CO_2$ 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, *J. Mater. Chem. A* 2022, 10, 18103-18115.

P11 Origin of the Boosting Effect of Polyoxometalates in Photocatalysis: the Case of $CO_2$ Reduction by a Rh-Containing Metal-Organic Framework. A. SOLE-DAURA, Y. BENSEGHIR, M.-H. HA-THI, M. FONTECAVE, P. MIALANE, **A. DOLBECQ**, C. MELLOT-DRAZNIEKS. *ACS Catalysis* 2022, 12, 9244-9255.

P10 Heterogenization of molecular cobalt catalysts in robust metal-organic frameworks for efficient photocatalytic $CO_2$ reduction. S. PARSHAMONI, C. VIRAVAUX, M. ROBERT, C. MELLOT-DRAZNIEKS, G. CHEN, P. MIALANE, **A. DOLBECQ**, J. BONIN *Catal. Sci.Technol.* 2022, 12, 5418-5424.

P9 Understanding the Photocatalytic Reduction of $CO_2$ with Heterometallic Molybdenum(V) Phosphate Polyoxometalates in Aqueous Media. Y. BENSEGHIR, A. SOLE-DAURA, P. MIALANE, J. MARROT, L. DALECKY, S. BECHU, M. FREGNAUX, M. GOMEZ-MINGOT, M. FONTECAVE, C. MELLOT-DRAZNIEKS, **A. DOLBECQ**, *ACS Catalysis* 2022, 12, 453-464.

2021---

P8 Tailoring the solid-state fluorescence of BODIPY by supra-molecular assembly with polyoxometalates. P. BOLLE, T. BENALI, C. MENET, M. PUGET, E. FAULQUES, J. MARROT, P. MIALANE, **A. DOLBECQ**, H. SERIER-BRAULT, O. OMS, R. DESSAPT, *Inorg. Chem*. 2021, 60, 12602-12609.

P7 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. C*. 2021, 9, 8323-8328.

P6 Gold/polyoxometalate core/shell nanoparticles for combined chemotherapy-photothermal cancer therapy. S. TOMANE, C. WILHELM, S. BOUJDAY, A. FROMAIN, A. MICHE, F. BOURDREUX, **A. DOLBECQ**, P. MIALANE, A. VALLEE, *ACS Appl. Nano Mater*. 2021, 4, 2339-2344.

P5 Heterogenisation of coordination complexes or polyoxometalates in Metal-Organic Frameworks : from Synthesis to Characterisations 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.

2020----

P4 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. MELLOT-DRAZNIEKS, *Chem. Commun.* 2020, 56, 10143-10146, Thematic issue « Hybrid Functional Materials ».

P3 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. 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. MELLOT-DRAZNIEKS, *J. Am. Chem. Soc.* 2020, 142, 9428-9438.

P2 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.

P1 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.