



Dr. Marc MAUDUIT

CNRS Research Director

« Organometallic : Materials & Catalysis »
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CURRENT POSITION

Oct. 2016 - Present CNRS Research Director 1st class – *Institute of Chemical Sciences of Rennes (ISCR)*
Oct. 2010 – 2017 CNRS Research Director 2nd class – *ISCR*
Oct. 2001 – 2010 CNRS Research Fellow – *ISCR*

EDUCATION

- **Habilitation** (2007) – Rennes 1 university
- **Post-doctoral training** (1999-2001) Montréal University – Chemistry Department (Supervisor: Pr. S. HANESSIAN)
- **PhD in Organic Chemistry** (1996-1999) Paris XI-Orsay University (Supervisor: Pr. Y. LANGLOIS)

PUBLICATIONS & PATENTS

134 publications; 29 Patents and 5 Chapters - *h* index = 46 (Google Scholar)

RESEARCH TOPICS: ORGANOMETALLIC CHEMISTRY

- Design of homogeneous & heterogeneous Ru-complexes for Olefin Metathesis
- Development of chiral NHC- and CAAC-based Transition Metal complexes for asymmetric catalysis
- Alkyne metathesis – Synthesis of acyclic and cyclic Conjugated Polyynes
- Valorization of Biomass via catalytic transformations (including continuous flow processes)

SELECTED PROFESSIONAL ACTIVITIES

2024- present Head of the ISCR/Chanel PB ANR Join-Laboratory
2023- present Head of the Industrial Relationships of ISCR
2019- present Member of the Industrial Relationships of ENSCR
2008- present Member of the scientific Board of ENSCR
2017-Jan 2019 Member of the scientific Board and Scientific Consultant – DEMETA SAS (France)
2010-2017 Principal Co-founder and member of the Board – OMEGA Cat System (France)

AWARDS

French Academy of Sciences – Minafin Award 2022
French Chemical Society Award 2013 – Industrial Division
Distinguished Junior Member of the French Chemical Society 2013
CNRS Award of Scientific Excellence 2010, 2014 and 2022

INTERNATIONAL & INDUSTRIAL COLLABORATIONS

2024- present Dr. Eric Gayon – *Continuous Production of new insecticides* – M2i, France
2024- present Dr. Angelino Doppiu – *CAAC-Ru complexes for olefin metathesis* – UMICORE, Germany
2022- present Pr. Joanna Wencel-Delord – *CAAC-Ir/Rh complexes for asymmetric hydrogenation* – Wurzburg University
2022- present Pr. Jeremy E. Wulff – *Ring-opening metathesis polymerization* – University of Victoria, Canada
2021- present Dr. H. de Clermont Gallerande – *Development of new cosmetic ingredients* – CHANEL Parfums Beauté
2021- present Pr. Rik Tykwinski – *Synthesis of polyynes and cumulenes* – University of Alberta, Canada
2020- present Pr. Matthias Tamm – *Alkynes Metathesis* – Technische Universität Braunschweig, Germany
2017- present Pr. G. Bertrand/Dr R. Jazzar – *CAAC-Transition Metal Complexes* – University of California San Diego, USA
2008- present Pr. Luigi Cavallo/Pr. Laura Falivene – *Olefin Metathesis* – KAUST Catalysis Center, Saudi Arabia

SELECTED PUBLICATIONS

1. "An ionic liquid-supported Ruthenium carbene complex: A robust and recyclable catalyst for ring-closing olefin metathesis in ionic liquids." N. Audic, H. Clavier, M. Mauduit, J.C. Guillemin, *J. Am. Chem. Soc.* **2003**, 125, 9248-9249.
2. "New bidentate alkoxy-NHC ligands for enantioselective copper-catalysed conjugate addition." H. Clavier, L. Coutable, J.-C. Guillemin, M. Mauduit, *Tetrahedron:Asymmetry*, **2005**, 16, 921-924. (Most Cited Paper 2005-2008)
3. "Copper catalyzed asymmetric conjugate addition of Grignard reagents to trisubstituted enones. Construction of all-carbon quaternary chiral centers." D. Martin, S. Kehli, M. d'Augustin, H. Clavier, M. Mauduit, A. Alexakis, *J. Am. Chem. Soc.* **2006**, 128, 8416.
4. "Sustainable concepts in olefin metathesis." H. Clavier, K. Grela, A. Kirschning, M. Mauduit, S. P. Nolan (review) *Angew. Chem. Int. Ed.* **2007**, 46, 6786-6801.

5. "Regiodivergent 1,4 versus 1,6 asymmetric copper-catalyzed conjugate addition" H. Hénon, M. Mauduit, A. Alexakis, *Angew. Chem. Int. Ed.* **2008**, *47*, 9122-9124
6. "Multicomponent Synthesis of (a)chiral Unsymmetrical Unsaturated N-Heterocyclic Carbene (U₂-NHC) Precursors; and Their Related Transition-Metal Complexes" P. Queval, C. Jahier, M. Rouen, I. Artur, J.-C. Legeay, L. Falivene, L. Toupet, C. Crévisy, L. Cavallo, O. Baslé, M. Mauduit, *Angew. Chem. Int. Ed.* **2013**, *52*, 14103-14107.
7. "Copper-catalyzed asymmetric conjugate addition of dimethylzinc to acyl-N-methylimidazole Michael acceptors: a powerful synthetic platform" S. Drissy-Amraoui, M. S. T. Morin, C. Crévisy, O. Baslé, R. Maria de Figueiredo, M. Mauduit, J.-M. Campagne, *Angew. Chem. Int. Ed.* **2015**, *54*, 11830-11834.
8. "Selective metathesis of α -olefins from bio-sourced Fischer-Tropsch Feeds" M. Rouen, P. Queval, E. Borré, L. Falivene, A. Poater, M. Berthod, F. Hugues, L. Cavallo, O. Baslé, H. Olivier-Bourbigou, M. Mauduit, *ACS Catal.* **2016**, *6*, 7970-7976.
9. "A Versatile and Highly Z-Selective Olefin Metathesis Ruthenium Catalyst Based on a Readily Accessible N-Heterocyclic Carbene." A. Dumas, R. Tarrieu, I. Curbet, T. Vives, T. Roisnel, V. Dorcet, O. Baslé, M. Mauduit, *ACS Catal.* **2018**, *8*, 3257-3262.
10. "The Debut of Chiral Cyclic (Alkyl)(amino)carbenes (CAACs) in Enantioselective Catalysis" D. Pichon, M. Soleilhavoup, J. Morvan, G. P. Junor, T. Vives, C. Crévisy, V. Lavallo, J.-M. Campagne, M. Mauduit, R. Jazzar, G. Bertrand, *Chem. Sci.*, **2019**, *10*, 7807.
11. "From Prochiral N-Heterocyclic Carbenes to Optically Pure Metal Complexes: New Opportunities in Asymmetric Catalysis" L. Kong, J. Morvan, D. Pichon, M. Jean, M. Albalat, T. Vives, S. Colombel-Rouen, M. Giorgi, C. Crévisy, T. Roisnel, V. Dorcet, D. Nuel, P. Nava, S. Humbel, N. Vanthuyne, M. Mauduit, H. Clavier, *J. Am. Chem. Soc.* **2020**, *142*, 93-98.
12. "Expedient Synthesis of Conjugated Triynes via Alkyne Metathesis" I. Curbet, S. Colombel-Rouen, R. Manguin, A. Clermont, A. Quelhas, D. S. Müller, T. Roisnel, O. Baslé, Y. Trolez, M. Mauduit, *Chem. Sci.*, **2020**, *11*, 4934-4938
13. "Optically pure C₁-Symmetric Cyclic(alkyl)(amino)carbene (CAAC) Ruthenium-Complexes for Asymmetric Olefin Metathesis" J. Morvan, F. Vermesch, Z. Zhang, L. Falivene, T. Vives, V. Dorcet, T. Roisnel, C. Crévisy, L. Cavallo, N. Vanthuyne, G. Bertrand, R. Jazzar, M. Mauduit, *J. Am. Chem. Soc.* **2020**, *142*, 19895-19901.
14. "Continuous Flow Z-selective Olefin Metathesis: An Efficient Production of Macrocyclic Odorant Molecules and Pheromones" J. Morvan, T. McBride, I. Curbet, S. Colombel-Rouen, T. Roisnel, C. Crévisy, D. L. Browne, M. Mauduit, *Angew. Chem. Int. Ed.* **2021**, *60*, 19685-19690 (hot paper)
15. "Challenges Arising from Continuous Flow Olefin Metathesis" A. Del Vecchio, H. R. Smallman, J. Morvan, T. McBride, D. L. Browne, M. Mauduit, *Angew. Chem. Int. Ed.* **2022**, *61*, e202209564
16. "Circularly Polarized Luminescence from Cyclic(Alkyl)(Amino)Carbene Derived Propellers" J. Lorkowski, D. Bouetard, P. Yorkgitis, M. Gembicky, T. Roisnel, N. Vanthuyne, D. Munz, L. Favereau, G. Bertrand, M. Mauduit, R. Jazzar, *Angew. Chem. Int. Ed.* **2023**, *62*, e202305404
17. "Chiral N-Hydroxyalkyl Pyrid-2-ylidenes: a new class of ligand for Copper-Catalyzed Asymmetric Allylic Alkylation" D. Bouëtard, Z. Zhang, T. Vives, M. Cordier, Luigi Cavallo, Lucie Jarrige, L. Falivene, M. Mauduit, *ACS Catal.* **2024**, *14*, 16785-16794.
18. "Singlet Carbenes Are Stereoinductive Main Group Ambiphiles" J. Lorkowski, P. Yorkgitis, F. Morvan, J. Morvan, N. Vanthuyne, T. Roisnel, M. Gembicky, G. Bertrand, M. Mauduit, R. Jazzar *J. Am. Chem. Soc.* **2025**, *147*, 14777-14784.
19. "A Crystalline Annelated Pyridin-1-ylidene and Its Isomerization into a Pyridin-3-ylidene" J. Lorkowski, L. Gojashvili, P. Yorkgitis, D. Pichon, J. Talcik, M. Gembicky, T. Roisnel, O. Baslé, R. Jazzar, M. Mauduit, G. Bertrand *J. Am. Chem. Soc.* **2025**, *147*, 14972-14977.
20. "Synthesis of Conjugated Linear and Cyclic Polyyenes by Selective Alkyne Metathesis" J. Escudero, J. Long, D. Bouëtard, J. Morvan, M. Koohgard, A. Neitzel, D. Bockfeld, S. Nwachukwu, T. Roisnel, R. R. Tykwinski, M. Tamm, M. Mauduit, Y. Trolez, *Angew. Chem. Int. Ed.* **2026**, in press

SELECTED BOOK CHAPTERS

1. "Asymmetric Allylic Alkylation" O. Baslé, A. Denicourt, C. Crévisy, M. Mauduit in : A. Alexakis, N. Krause, S. Woodward (eds.) *Copper-catalyzed Asymmetric Synthesis*, First Edition, Wiley-VCH Verlag GmbH & Co. KGaA ; **2014** , Chapter 4, pp 85-125
2. "Metal catalyzed Asymmetric nucleophilic addition to electron deficient alkenes" M. Mauduit, O. Baslé, H. Clavier, C. Crévisy, A. Denicourt In: Gary A. Molander and Paul Knochel (eds.), *Comprehensive Organic Synthesis*, 2nd edition, Vol 4, Oxford: Elsevier; **2014**. pp. 189-341.

SELECTED PATENTS

1. M. Mauduit, M. Rouen - Ruthenium complexes including an asymmetric unsaturated N-heterocyclic diaminocarbene - PCT Int. Appl. (**2014**), WO 2014091157
2. M. Mauduit, R. Jazzar, G. Bertrand, J. Morvan, F. Vermersch, N. Vanthuyne – Optically pure enantiomers of ruthenium complexes and uses thereof US PCT/IB2020/000920 (**2020**)
3. M. Mauduit, R. Jazzar, G. Bertrand, J. Morvan, N. Vanthuyne, J. Lorkowski – Synthesis of optically pure AminoAlkyles Cyclic Carbenes – EP 21306194.8 (**2021**)
4. M. Mauduit, A. Roucoux, E. Le Fur, L. Chaillou, H. de Clermont-Gallerande, I. Chicu – Particules d'oxydes de fer non nanométriques, leur procédé de préparation et composition cosmétique les contenant – EP 22207380.8 (**2023**) (with CHANEL PB)
5. M. Mauduit, W. Le Saint, S. Rouen, H. de Clermont-Gallerande – Procédé de synthèse de corps gras solides biosourcés – FR2404002 (**2024**) (with CHANEL PB)