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RESEARCH INTEREST

Development of New Methods for Organic Synthesis, Fluorinated Molecules, Metal Catalyzed Reactions, Glycomimetics, Carbohydrates, Asymmetric Catalysis.

EDUCATION

- 2015 **Habilitation** (*Habilitation à Diriger des Recherches*)
- 2005-2008 **Ph.D. Organic Chemistry**, Advisor: Dr. Vincent Levacher
(UMR 6014, IRCOF-LCOFH, Université de Rouen, France)
- 2004-2005 **Master II of Organic Chemistry** (with honors)
Rouen University (France)

EXPERIENCE

- Since 2011 **Maître de Conférences** INSA de Rouen, UMR 6014 COBRA, IRCOF
Fluorinated Biomolecules team, directed by Prof. Xavier Pannecoucke
- 2010-2011 **Post-doctoral fellow** with Prof. Magnus Rueping
Institute of Organic Chemistry, RWTH-Aachen University (Germany)
- 2008-2010 **Post-doctoral fellow** with Prof. Shū Kobayashi (JSPS Fellowship)
Department of Chemistry, School of Science, the University of Tokyo (Japan)
- 2005-2008 **Ph.D. in Organic Chemistry**, Advisor: Dr. Vincent Levacher
(UMR 6014, IRCOF-LCOFH, Université de Rouen, France)

PUBLICATIONS, BOOK CHAPTERS & PATENTS

PUBLICATIONS:

2016

48. Recent Progress Toward the Synthesis of Trifluoromethyl and Difluoromethyl Substituted Cyclopropanes. (Review)

Chem. Eur. J. **2016**, *22*, 10.1002/chem.201604564

Bos, M.; Poisson, T.; Pannecoucke, X.; Charette, A. B.; Jubault, P.

47. Copper Salt-Controlled Divergent Reactivity of [Cu]CF₂PO(OEt)₂ with α -Diazocarbonyl Derivatives.

Angew. Chem. Int. Ed. **2016**, *55*, 14141.

Ivanova, M. V.; Bayle, A.; Besset, T.; Pannecoucke, X.; Poisson, T.

46. Synthesis and Applications of Fluorocyclopropanes. (Review – invited paper)

Synthesis **2016**, *48*, 4060.

Pons, A.; Poisson, T.; Pannecoucke, X.; Charette, A. B.; Jubault, P.

45. Introduction of Functionalized Difluoromethylated Building Blocks Mediated or Catalyzed by Copper. (Account Article – invited paper)

Synlett **2016**, *27*, 2314.

Pannecoucke, X.; Poisson, T.

44. New Entries Toward the Synthesis of OCF₃-Containing Molecules. (Highlight)

Org. Chem. Front. **2016**, *3*, 1004.

Besset, T.; Jubault, P.; Pannecoucke, X.; Poisson, T.

43. New Prospects Toward the Synthesis of Difluoromethylated Phosphates Mimics. (Concept article – invited paper)

Chem. Eur. J. **2016**, *22*, 10284.

Ivanova, M. V.; Bayle, A.; Besset, T.; Pannecoucke, X.; Poisson, T.

42. Catalytic Enantioselective Synthesis of Halo-Cyclopropanes.

Chem. Eur. J. **2016**, *22*, 6239.

Pons, A.; Ivashkin, P.; Poisson, T.; Charette, A. B.; Pannecoucke, X.; Jubault, P.

41. Palladium-Catalyzed Synthesis of α -Trifluoromethylstyrenes by Means of Directed C-H Bond Functionalization.

Eur. J. Org. Chem. **2016**, 76.

Zhao, Q.; Besset, T.; Poisson, T.; Bouillon, J.-P.; Pannecoucke, X.

2015

40. Copper-Mediated Formation of Aryl, Heteroaryl, Vinyl and Alkynyl Difluoromethylphosphonates: A General Approach to Fluorinated Phosphate Mimics.

Angew. Chem. Int. Ed. **2015**, *54*, 13406.

Ivanova, M. V.; Bayle, A.; Besset, T.; Poisson, T.; Pannecoucke, X.

39. 1,4-Addition of the CF₃ Group, Perfluoroalkyl Groups and Functionalized Difluoromethylated Moieties: an Overview. (Review)

J. Fluorine Chem. **2015**, *178*, 225.

Besset, T.; Poisson, T.; Pannecoucke, X.

38. Synthesis and Reactivity of *N*-*tert*-Butanesulfinyl Glycosylamines.

Eur. J. Org. Chem. **2015**, 4330.

Cocaud, C.; Nicolas, C.; Bayle, A.; Poisson, T.; Pannecoucke, X.; Martin O. R.

37. Recent Progress Toward the Introduction of Functionalized Difluoromethylated building blocks. (Review)

Chem. Eur. J. **2015**, *21*, 12836.

Belhomme, M.-C.; Besset, T.; Poisson, T.; Pannecoucke, X.

36. Copper-Mediated Synthesis of Aryl Difluoromethylphosphonates: A Sandmeyer Approach.

Eur. J. Org. Chem. **2015**, 3787.

Bayle, A.; Cocard, C.; Nicolas, C.; Martin O. R.; Poisson, T.; Pannecoucke, X.

35. Direct Vicinal Difunctionalization of Alkynes: An Efficient Approach Toward the Synthesis of Highly Functionalized Fluorinated Alkenes. (Review)

Eur. J. Org. Chem. **2015**, 2765.

Besset, T.; Poisson, T.; Pannecoucke, X.

34. Rhodium-Catalyzed Cyclopropanation of Fluorinated Olefins: a Straightforward Route to Highly Functionalized Fluorocyclopropanes.

Org. Lett. **2015**, *17*, 1790.

Pons, A.; Beucher, H.; Ivashkin, P.; Lemonnier, G.; Poisson, T.; Charette, A. B.; Jubault, P.; Pannecoucke, X.

33. Synthesis and Immunological Evaluation of Fluorinated α -C-Galactosylceramides.

J. Fluorine Chem. **2015**, *173*, 84.

Colombel, S.; Van Hifjte, N.; Poisson, T.; Pannecoucke, X.; Monneaux, F.; Leclerc, E.

32. Copper-Catalyzed Innate Ethoxycarbonyldifluoromethylation of Electron-Rich Arenes.

Eur. J. Org. Chem. **2015**, 1719.

Belhomme, M.-C.; Bayle, A.; Poisson, T.; Pannecoucke, X.

31. First Synthesis of N-Acetyl-glycosamine-1-Difluoromethylphosphonate From 2-Nitroglycals as Phosphate Analog.

J. Fluorine Chem. **2015**, *171*, 56.

Delaunay, T.; Poisson, T.; Jubault, P.; Pannecoucke, X.

2014

30. Recent Progress in Direct Introduction of Fluorinated Groups on Alkenes and Alkynes by means of C-H Bond Functionalization. (Review)

Chem. Eur. J. **2014**, *20*, 16830.

Besset, T.; Poisson, T.; Pannecoucke, X.

29. 2-Nitro-Glycals Versatile Building Blocks Toward the Synthesis of 2-AminoGlycosides. (Review)

Eur. J. Org. Chem. **2014**, 7525.

Delaunay, T.; Poisson, T.; Jubault, P.; Pannecoucke, X.

28. Straightforward Access to Difluoromethylated Alkynes via a Castro-Stephens Reaction.

Eur. J. Org. Chem. **2014**, 7220.

Besset, T.; Poisson, T.; Pannecoucke, X.

27. Copper Catalyzed Direct C-2 Difluoromethylation of Furans and Benzofurans: Access to C2-CF₂H Furans and Benzofurans.

J. Org. Chem. **2014**, *79*, 7205.

Belhomme, M.-C.; Poisson, T.; Pannecoucke, X.

26. Copper Catalyzed Selective Difluoroacetylation of Enamides by Means of C-H Bond Functionalization.

Chem. Commun. **2014**, *50*, 5887.

Caillot, G.; Dufour, J.; Belhomme, M.-C.; Poisson, T.; Grimaud, L.; Pannecoucke, X.; Gillaizeau, I.

25. Direct Copper Mediated Functionalization of Unsaturated C-C Bonds using BrCF₂CO₂Et: a Straightforward Access to Highly Valuable Difluoroacetylated Alkenes.

(Special Topic Issue on "Copper Chemistry" ed. Prof. E. M. Carreira)

Synthesis **2014**, *46*, 1859.

Belhomme, M.-C.; Dru, D.; Xiong, H.-Y.; Cahard, D.; Besset, T.; Poisson, T.; Pannecoucke, X.

24. Stereoselectivity of the Honda-Reformatsky Reaction in Reactions with Ethyl Bromodifluoroacetate with α -Oxygenated Sulfinylimines.

J. Org. Chem. **2014**, *79*, 4186.

Fontenelle, C. Q.; Conroy, M.; Light, M.; Poisson, T.; Pannecoucke, X.; Linclau, B.

23. Efficient Access to Fluorinated Homoallylic Alcohols through an Indium Promoted Fluoroallylation Reaction.

Tetrahedron **2014**, *70*, 3123.

Lemonnier, G.; Van Hijfte, N.; Sebban, M.; Poisson, T.; Couve-Bonnaire, S.; Pannecoucke, X.

22. Stereoselective Access to β -C-glycosamines by Means of a Nitro-Michael Addition of Organolithium Reagents.

Eur. J. Org. Chem. **2014**, 3341.

Delaunay, T.; Poisson, T.; Jubault, P.; Pannecoucke, X.

21. Indium Promoted Diastereoselective Addition of Fluorinated Halo-Allylic Derivatives to Imines.

J. Org. Chem. **2014**, *79*, 2916.

Lemonnier, G.; Van Hijfte, N.; Poisson, T.; Couve-Bonnaire, S.; Pannecoucke, X.

20. Study of the PAH and water-extractable phenols content in used cross ties collected on the French rail network.

Chemosphere **2014**, *111*, 1.

Marcotte, S.; Poisson, T.; Koltalo, F.; Aubray, M.; Basle, J.; De Bort, M.; Giraud, M.; Nguyen Hoang, T.; Octeau, C.; Blondeel C.

2013

19. Addition of Electrophilic Radicals to 2-Benzyloxyglycols: Synthesis and Functionalization of Fluorinated α -C-Glycosides and Derivatives

Chem. Eur. J. **2013**, *19*, 12778.

Colombel, S.; Van Hifjte, N.; Poisson, T.; Leclerc, E.; Pannecoucke, X.
highlighted on the ChemistryViews website.

18. Copper Catalyzed β -Difluoroacetylation of Dihydropyrans and Glycols by Means of Direct C-H Functionalization.

Org. Lett. **2013**, *15*, 3428.

Belhomme, M.-C.; Poisson, T.; Pannecoucke, X.

17. A Practical and Straightforward Access to Fluorinated Homoallylic Alcohols in Aqueous Media.

Tetrahedron Lett. **2013**, *54*, 2821.

Lemonnier, G.; Poisson, T.; Couve-Bonnaire, S.; Pannecoucke, X.

16. Diethylzinc-Mediated Addition of 2,2-Dibromo-2-fluoroacetamides to Carbonyl Compounds: Synthesis of α -Bromo- α -fluoro- β -hydroxy Amides and/or Z-Fluorovinyl Amides.

Eur. J. Org. Chem. **2013**, 3278.

Lemonnier, G.; Poisson, T.; Couve-Bonnaire, S.; Jubault, P.; Pannecoucke, X.

15. Copper Catalyzed Direct Arylation of Cyclic Enamides using Diaryliodonium Salts.

Org. Lett. **2013**, *15*, 278.

Gigant, N.; Chausset-Boissarie, L.; Belhomme, M.-C.; Poisson, T.; Pannecoucke, X.; Gillaizeau, I.

2012

14. Indium Promoted Reformatsky Reaction: A Straightforward Access to β -amino and β -hydroxy α,α -difluoro Carbonyl Compounds.

J. Org. Chem. **2012**, *77*, 9277.

Poisson, T.; Belhomme, M. -C.; Pannecoucke, X.

Graduate and Postdoctoral Research:

13. Towards the C-3 functionalisation of 4-dimethylaminopyridine (DMAP). A Straightforward Access to New Chiral Nucleophilic Catalyst.

Tetrahedron Lett. **2012**, *53*, 3284.

Poisson, T.; Oudeyer, S.; Levacher, V.

12. Potassium tert-butoxide mediated Heck-type cyclization/isomerization–benzofurans from organocatalytic radical cross-coupling reactions.

Chem. Commun. **2011**, *47*, 10629.

Rueping, M.; Leiendecker, M.; Das, A.; Poisson, T.; Bui, L.

11. Visible Light Mediated Azomethine Ylide Formation – Photoredox catalyzed [3+2] Cycloadditions.

Chem. Commun. **2011**, *47*, 9615.

Rueping, M.; Leonori, D.; Poisson, T.

10. Organocatalyzed Enantioselective Protonation of Silyl Enol Ether : Scope, Limitations and Application to the Preparation of Enantioenriched Homoisoflavones.

J. Org. Chem. **2010**, *75*, 7704.

Poisson, T.; Gembus, V.; Dalla, V.; Oudeyer, S.; Levacher, V.

9. Catalytic Asymmetric Protonation of Calcium Enolates via 1,4 Addition of Malonates.

J. Am. Chem. Soc. **2010**, *132*, 7890.

Poisson, T.; Yamashita, Y.; Kobayashi, S.

8. Asymmetric Mannich Reaction of Malonates with Imines Catalyzed by a Chiral Calcium Complex.

J. Org. Chem. **2010**, *75*, 963.

Poisson, T.; Tsubogo, T.; Yamashita, Y.; Kobayashi, S.

7. Preparation of β -lactams by Mannich-type Addition of Ethyl(trimethylsilyl)acetate (ETSA) to *N*-(2-hydroxyphenyl)aldimine Sodium Salts.

Synlett **2009**, 2437.

Gembus, V.; Poisson, T.; Oudeyer, S.; Marsais, F.; Levacher, V.

6. Sodium Aryloxide / Ethyl(trimethylsilyl)acetate (ETSA) Combination-Catalyzed Addition of Alkyl Nitriles to Unactivated Imines.

J. Org. Chem. **2009**, *74*, 3516.

Poisson, T.; Gembus, V.; Oudeyer, S.; Marsais, F.; Levacher, V.

5. Straightforward Organocatalytic Enantioselective Protonation of Silyl Enolates by means of Cinchona Alkaloids and Carboxylic Acids.

Synlett **2008**, 2447.

Poisson, T.; Oudeyer, S.; Dalla, V.; Marsais, F.; Levacher, V.

4. MacMillan's Imidazolidinones : Powerful Chiral Organocatalysts.

Synlett **2008**, 147.

Poisson, T.

3. First Organocatalytic Enantioselective Protonation of Silyl Enolates Mediated by Cinchona Alkaloids and a Latent Source of Hydrogen Fluoride.

Angew. Chem. Int. Ed. **2007**, *46*, 7090.

Poisson, T.; Dalla, V.; Marsais, F.; Dupas, G.; Oudeyer, S.; Levacher, V.

2. DMAP organocatalyzed *O*-Silyl-*O*-(or *C*-)-Benzoyl Interconversions by Means of Benzoyl Fluoride.

Synlett **2007**, 381.

Poisson, T.; Dalla, V.; Papamicael, C.; Dupas, G.; Marsais, F.; Levacher, V.

1. Single Step Preparation of a 4-(dimethylamino)pyridine Analogue Bearing a Sulfoxyde as New Chiral Inducer. Preliminary Evaluation as Nucleophilic Catalyst.

Synlett **2005**, 2285.

Poisson, T.; Penhoat, M.; Papamicael, C.; Dupas, G.; Dalla, V.; Marsais, F.; Levacher, V.

BOOK CHAPTERS:

2. Asymmetric Protonation of Carbanions and Polar Double Bonds and Their Application to Total Syntheses. Chapter 31.

In *Stereoselective Synthesis of Drugs and Natural Products*, Andrushko V., Andrushko. N. Eds.; Wiley-Blackwell, John Wiley and Sons Inc. **2013**, 961-992.

Poisson, T.; Kobayashi, S.

1. Organocatalyzed Enantioselective Protonation.

In *Enantioselective Organocatalyzed Reactions I: Enantioselective Oxidation, Reduction, Functionalization and Desymmetrization*; Mahrwald, R. Ed.; Springer Science+Business Media B.V. **2011**; pp 67-106.

Poisson, T.; Oudeyer, S.; Briere, J. -F.; Levacher, V.

PATENTS:

2. Optically active dicarboxylic acid derivatives

Kobayashi, S.; Yamashita, Y.; Poisson, T.

Japan application date: March 10, 2010, application number: 2010-053300.

Jpn. Kokai Tokkyo Koho (2011), JP2011184393 A 20110922

1. Alkaline earth metal-type catalyst and reaction methods

Kobayashi, S.; Yamashita, Y.; Poisson, T.; Tsubogo, T.

Jpn. Kokai Tokkyo Koho (2010), 25pp. CODEN: JKXXAF JP 2010207786 A 20100924 AN 2010:1192668.

HONORS & AWARDS

- Thieme Chemistry Journal Award 2017.

- Excellence research award (PEDR) 2016-2020.

- "Jeune enseignant-chercheur" award from the organic chemistry division of the French Chemical Society (SCF), 2016.

- Junior distinguished member of the French Chemical Society (SCF), 2015-2020.

- Fellowship of the Japan Society for Promotion of Science (JSPS), 2008-2010.

- Graduate Fellowship from the French government (MRT) 2005-2008.

- Master Fellowship (awarded to the top 5% student) 2004-2005.