

Tatiana BESSET

CNRS Researcher (chargée de recherche CR2)
Université de Rouen, UMR 6014-CNRS COBRA,
1 rue Tesnière, 76821 Mont Saint Aignan, Cedex, France.

Tel.: + 33 (0) 02 35 52 24 03

E-mail: tatiana.besset@insa-rouen.fr

Nationality: French

Age : 31

**EDUCATION**

- April 2011-Sept. 2012** **Postdoctoral fellow**, University of Amsterdam (UvA), (Amsterdam, Netherlands).
Nov. 2009-Mar. 2011 **Postdoctoral fellow**, Westfälische Wilhelms-Universität Münster, (Münster, Germany).
2006-2009 **Ph. D. in Synthetic Organic Chemistry**, University Joseph Fourier, Grenoble (France).
2005-2006 **Research Master (M. Sc.)** with honours in Organic, Bioorganic and Environmental Chemistry, University Blaise Pascal, Clermont-Ferrand (France).
2003-2006 **Chemical Engineering Degree** at the National Graduate School of Chemistry and Chemical Engineering (ENSCCF) in Clermont-Ferrand (France).

PROFESSIONAL EXPERIENCE

- Since Oct. 2012** *Development of new transition metal catalysis based strategies for the synthesis of fluorinated building blocks and the functionalization of fluorinated scaffolds.*
CNRS Researcher (CR2) in the group of Prof. X. Pannecoucke, University of Rouen (France).
- April 2011-Sept. 2012** *Application of supramolecular catalysts for industrial relevant hydroformylation processes of terminal olefins.*
Industrial postdoctoral fellow in the group of Prof. Dr. Joost N. H. Reek, University of Amsterdam (UvA), van 't Hoff Institute for Molecular Sciences (HIMS), Amsterdam (Netherlands) in collaboration with the company Eastman.
- Nov. 2009-Mar. 2011** *Transition metal catalyzed C-H bond activation.*
Postdoctoral fellow in the group of Prof. Dr. Frank Glorius, Westfälische Wilhelms-Universität Münster, Germany.
- 2006-2009** *Synthesis of a functionalized podocarpene and preparation of heteroquinones as phosphatases and reductases inhibitors.*
Ph. D. studies in Dr. Andrew E. Greene's research group (DCM: Département de Chimie Moléculaire, Grenoble, France) under the supervision of Dr. Christophe Morin (University Joseph Fourier).
- Mar.-Sep. 2006** *Studies on processing of pharmaceutical compounds.*
Engineering training in development under the supervision of Dr. Ronan Guevel at Archemis (a subsidiary of Sanofi-Aventis) (Lyon, France).
- 2006** *Diastereoselective synthesis of 2-mono-substituted and 2,6-disubstituted piperidines.* Project under the supervision of Dr. Pierre Chalard and Prof. Yves Troin at ENSCCF (Clermont-Ferrand, France).

TEACHING and OTHER INFORMATIONS

- 2014-2015** **Practical courses** (40h), in Inorganic Chemistry (B.Sc. Students), INSA Rouen.
Lecture (6h) in Organic Chemistry (“Molécules bifonctionnelles”, B.Sc. Students, License 2), Rouen University.
- 2013-2014** **Practical courses** (20h), in Inorganic Chemistry (B.Sc. Students), INSA Rouen;
lecture (6h) and **tutorials** (16h), in Organic Chemistry (“Molécules bifonctionnelles”, B.Sc. Students, License 2), Rouen University.
- 2012-2013** **Teaching courses (hygiene, safety and security, 20h)**, University Princess Nora Bint Abdul Rahman (Saudi Arabia).
- 2009-2010** **Practical courses** in Organic Chemistry (B.Sc. Students), Westfälische Wilhelms-Universität Münster, Germany.
- 2006-2009** **Teaching assistantship (Monitorat, 64 h/year)** in General and Organic Chemistry (B.Sc. Students), University Joseph Fourier (Grenoble, France).

Languages:

French:	Mother language
English:	Fluent (Test of English for International Communication (TOEIC, 800/990, Feb., 2006))
Italian:	Intermediate level

SUPERVISION OF STUDENTS

- 2014-2015** **Co-supervisor** of 3 PhD students and 1 **Co-supervisor** of a Master student.
- 2013-2014** **Co-supervisor** of 2 PhD students.
Practical courses (20h), in Inorganic Chemistry (B.Sc. Students), INSA Rouen.
- 2012-2013** **Supervisor** of a Master student and **co-supervisor** of a PhD student.
Teaching courses (hygiene, safety and security, 20h), University Princess Nora Bint Abdul Rahman (Saudi Arabia).
- 2010-2011** **Laboratory mentor** of a Master student, a Ph. D. student (April-October 2011) and project in collaboration with a technician.

RESEARCH INTERESTS

Fluorine chemistry
C-H activation
Catalysis and methodology

SCIENTIFIC RECORDS

24 publications, 2 patents, 10 poster presentations, 1 oral presentation

PUBLICATIONS

- [1] H.-Y. Xiong, T. Besset, D. Cahard, X. Pannecoucke, *J. Org. Chem.* **2015**, DOI: 10.1021/acs.joc.5b00505 “*Palladium(II)-Catalyzed Directed Trifluoromethylthiolation of Unactivated C(sp³)-H Bonds*”
- [2] T. Besset, T. Poisson, X. Pannecoucke, *Eur. J. Org. Chem.* **2015**, DOI: 10.1002/ejoc.201403507: “*Direct Vicinal Difunctionalization of Alkynes: An Efficient Approach Towards the Synthesis of Highly Functionalized Fluorinated Alkenes.*”
- [2] T. Besset, T. Poisson, X. Pannecoucke, *Chem. Eur. J.* **2014**, 20, 16830. “*Recent Progress in Direct Introduction of Fluorinated Groups on Alkenes and Alkynes by means of C H Bond Functionalization.*”
- [3] T. Besset, T. Poisson, X. Pannecoucke, *Eur. J. Org. Chem.* **2014**, 7220. “*Access to Difluoromethylated Alkynes through the Castro-Stephens Reaction.*”
- [4] C. S. Fuchs, M. Hollauf, M. Meissner, R. C. Simon, T. Besset, J. N. H. Reek, W. Riethorst, F. Zepeck, W. Kroutil, *Adv. Synth. Cat.* **2014**, 356, 2257. “*Dynamic Kinetic Resolution of 2-Phenylpropanal Derivatives to Yield β -Chiral Primary Amines via Bioamination.*”
- [5] T. Besset, D. Cahard, X. Pannecoucke, *J. Org. Chem.* **2014**, 79, 413. “*A Regio- and Diastereoselective Direct Cu-Mediated Trifluoromethylation of Functionalized Alkenes*”
- [6] M.-C. Belhomme, D. Dru, H.-Y. Xiong, D. Cahard, T. Besset, T. Poisson, X. Pannecoucke, *Synthesis* **2014**, 1859. “*Copper Mediated Direct 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)
- [7] V. Bizet, T. Besset, J.A. Ma, D. Cahard, *Curr. Top. Med. Chem.* **2014**, 14, 901. “*Recent Progress in Asymmetric Fluorination and Trifluoromethylation Reactions.*”
- [8] T. Ferrary, E. David, G. Milanole, T. Besset, P. Jubault, X. Pannecoucke, *Org. Lett.* **2013**, 15, 5598. “*A straightforward and highly diastereoselective access to functionalized monofluorinated cyclopropanes via a Michael Initiated Ring Closure reaction.*”
- [9] T. Besset, R. Gramage-Doria, J. N. H. Reek, *Angew. Chem. Int. Ed.* **2013**, 52, 8795. “*Remotely Controlled Iridium-Catalyzed Asymmetric Hydrogenation of Terminal 1,1-Diaryl Alkenes.*”
- [10] T. Besset, R. Gramage-Doria, J. N. H. Reek, *Curr. Org. Chem.* **2013**, 17, 1489. “*Transition-Metal Encapsulation within Supramolecular Diphosphine Capsules.*” Special issue on “Nanoreactors and molecular prisons”
- [11] D. Anselmo, R. Gramage-Doria, T. Besset, M. V. Escárcega-Bobadilla, G. Salassa, E. C. Escudero-Adán, M. Martínez Belmonte, E. Martin, J. N. H. Reek, A. W. Kleij, *Dalton Trans.*

2013, 42, 7595. "Supramolecular Bulky Phosphines Comprising of 1,3,5-Triaza-7-phosphaadamantane and Zn(salphen)s: Structural Features and Application in Hydrosilylation Catalysis."

[12] T. Besset, D. W. Norman, J. N. H. Reek, *Adv. Synth. Catal.* **2013**, 355, 348. "Supramolecular Encapsulated Rhodium Catalysts for Branched Selective Hydroformylation of Alkenes at High Temperature."

[13] F. W. Patureau, T. Besset, F. Glorius, checked by T. Harada, T. Fukuyama, *Org. Synth.* **2013**, 90, 41. "Preparation of (E)-N,N-Diethyl-2-styrylbenzamide by Rh-catalyzed C-H activation."

[14] F. W. Patureau, T. Besset, R. Fröhlich, F. Glorius, *C. R. Chim.* **2012**, 15, 1081. "On the selectivity in some Rh(III) catalyzed C-H activation cross-couplings; De la sélectivité dans des réactions d'hétéro-couplage par C-H activation catalysées au Rh(III)."

[15] T. Besset, C. Schneider, D. Cahard, *Angew. Chem. Int. Ed.* **2012**, 51, 5048. "Tamed (Hetero)Arene Trifluoromethylation" (Highlight).

[16] N. Schroder, T. Besset, F. Glorius, *Adv. Synth. Catal.* **2012**, 354, 579. "Synthesis of Olefin-Oxazoline-Ligands (OlefOx) by Rhodium(III)-Catalyzed Oxidative Olefination."

[17] T. Besset, N. Kuhl, F. W. Patureau, F. Glorius, *Chem. Eur. J.* **2011**, 17, 7167. "Rh(III)-Catalyzed Oxidative Olefination of Vinylic C-H Bonds: Efficient and Selective Access to Di-unsaturated α -Amino Acid Derivatives and other Linear 1,3-Butadienes."

[18] T. Besset, E. Braud, C. Garbay, S. Kolb, P.-M. Léo, C. Morin, *Eurjchem*, **2011**, 2, 433. "Preparation and evaluation of a set of bis-(methoxycarbonyl-methylthio)-heteroquinones as CDC25B phosphatase inhibitors."

[19] S. Rakshit, C. Grohmann, T. Besset, F. Glorius, *J. Am. Chem. Soc.* **2011**, 133, 2350. "Rh[III]-catalyzed directed C-H olefination using an internal oxidant: mild, efficient and versatile."

[20] F. W. Patureau, T. Besset, N. Kuhl, F. Glorius, *J. Am. Chem. Soc.* **2011**, 133, 2154. "Diverse strategies towards indenol and fulvene derivatives: Rh-catalyzed C-H activation of aryl ketones followed by coupling with internal alkynes."

[21] F. W. Patureau, T. Besset, F. Glorius, *Angew. Chem. Int. Ed.* **2011**, 50, 1064. "Rhodium-Catalyzed Oxidative Olefination of C-H Bonds in Acetophenones and Benzamides."

[22] T. Besset, C. Morin, *Synthesis* **2009**, 1753. "Synthesis of 3,6-Dimethoxybenzene-1,2-diamine and of 4,7-Dimethoxy-2-methyl-1H-benzimidazole."

- [23] C. Morin, T. Besset, J.-C. Moutet, M. Fayolle, M. Brueckner, D. Limosin, K. Becker, E. Davioud-Charvet, *Org. Biomol. Chem.* **2008**, 6, 2731. "The aza-analogues of 1,4-naphthoquinones are potent substrates and inhibitors of plasmodial thioredoxin and glutathione reductases and of human erythrocyte glutathione reductase."
- [24] I. Abrunhosa-Thomas, O. Roy, M. Barra, T. Besset, P. Chalard, Y. Troin, *Synlett* **2007**, 1613. "Diastereoselective synthesis of 2-monosubstituted and 2,6-disubstituted piperidines."

PATENTS

- [1] T. R. M.-L. Besset, D. W. Norman, J. N. H. Reek, PCT Int. Appl. (**2013**), WO 2013181190 A1 20131205. "Catalysts and processes for preparing aldehydes."
- [2] D. W. Norman, J. N. H. Reek, T. R. M.-L. Besset, PCT Int. Appl. (**2013**), WO 2013181186 A1 20131205. "Hydroformylation catalysts and process for producing aldehydes."

SCIENTIFIC ACTIVITIES

- Since 2006 Member of the French Chemical Society (SCF), assistant treasurer (2013-)
- 2014-2016 Member of the « CCSE restreinte élue » for 2 years (2014-2016)
- 2014 Member of Organization Committee of JNOEJC 2015, Rouen