

DR. DANIEL STEPHAN MÜLLER.

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Curriculum Vitae

CONTACT

Daniel Muller, Chargé de recherche CNRS
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<https://scholar.google.com/citations?user=T110fwAAAAJ&hl=de>



PERSONAL INFORMATION

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| Date of birth | • December 15 th , 1981 in Müllheim (Baden); Germany |
| Nationality | • German |
| Marital status | • Married to Agnès Klopfenstein (French nationality), two children. |
| Languages | • German (native), English (fluent), French (fluent) |

EXPERIENCE AND EDUCATION

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|-------------------|---|
| 11/2020 | CNRS Researcher , ISCR, Université de Rennes 1 |
| 11/2016 – 02/2019 | Ingénieur de Recherche , Ecole National Supérieur de Rennes
Advisor: Professor Marc Mauduit <ul style="list-style-type: none">• Title: "Development of new Z-Selective Ruthenium-Based Olefin Metathesis Catalyst"• Keywords: Methodology, ruthenium catalysis, metathesis, flow-chemistry, sustainable chemistry. |
| 11/2014 – 08/2016 | Senior Researcher , Technion - Israel Institute of Technology, Haifa, Israel
Advisor: Professor Ilan Marek <ul style="list-style-type: none">• Title: "Asymmetric carbometalation of cyclopropenes"• Keywords: Enantioselective synthesis, carbometalation reactions, strained molecules, copper catalysis, organozinc-, aluminum- and boron reagents, cyclopropane synthesis, domino reactions. |
| 05/2013 – 08/2014 | Postdoctoral Fellow , University of California, Irvine, USA
Advisor: Professor Larry E. Overman <ul style="list-style-type: none">• Title: "Total synthesis of trans-Clerodane Diterpene PL3 via anionic fragment coupling"• Keywords: Total synthesis, fragment coupling, lithium and copper reagents, quaternary carbon centers, natural products. |
| 09/2008 – 12/2012 | Ph.D. thesis at the University of Geneva, Switzerland
Advisor: Professor Alexandre Alexakakis <ul style="list-style-type: none">• Title: "Copper Catalyzed Conjugate Addition of Alkenylaluminums to Unactivated Substrates" |

- **Keywords:** enantioselective synthesis, copper- and rhodium- and nickel-catalysis, conjugate addition reactions, phosphorous ligands, carbene ligands, aluminum reagents, quaternary carbon centers, heterocycles.
- **Jury de thèse:** Prof. Laurent Micouin, Prof. Clément Mazet and Prof. Stefan Matile. (Very good).

04/2008 – 05/2008

French language course at IFALPES, Institut Français d'Annecy

10/2002 – 03/2008

Diploma (MSc): at the Albert-Ludwigs-University Freiburg, Germany

Advisor: Professor Bernhard Breit

- **Title:** "Synthesis of *self-associating ligands and their application in the palladium-catalyzed formation of 1H-1,2,3-triazoles*".
- **Keywords:** palladium catalysis, click-reaction, heterocycles, supramolecular chemistry, self-associating ligands.

TEACHING AND SUPERVISION

2021

Teaching Assistant, ISCRde Rennes, France

- Heterocyclic Chemistry course for master students

2014 – 2016

Supervisor, Technion, Israel

- Supervision of Dr. Longyang Dian.

2010 – 2011

Teaching Assistant, University of Geneva, Switzerland

- Supervision of two Master theses (Abdelah Felouat and Danielle Poggiali) during three and six months.

2009 – 2011

Teaching Assistant, University of Geneva, Switzerland

- Teaching of chemistry- and biochemistry students in organic chemistry. Supervision of undergraduate student laboratories.

2005 – 2008

Teaching Assistant, University of Freiburg, Germany

- Seminar in basic inorganic and organic chemistry for biology, medicine and chemistry students

SKILLS

Expertise

- Flow-technology (Vapourtec; E-series)
- Modern synthetic organic chemistry (large and small scale) and optimization.
- Homogeneous catalysis, high-throughput screening, ligand synthesis..
- Organometallic chemistry, especially organoaluminums.
- Handling of sensitive and/or hazardous materials (Schlenk- and low-temperature techniques, Glovebox).
- Good knowledge of purification techniques and analytical tools for organic compounds (NMR-, IR- and mass spectroscopy, HPLC, GC-MS, SFC, automated column chromatography).

Computer Literacy

- MS Office, SciFinder Scholar, Reaxys, MestReNova, ChemDraw and basic webdesign.

AWARDS

2013

Early Postdoctoral Fellowship, Swiss National Science Foundation (SNSF)

2012

SCNAT/SCS Chemistry Travel Award

2011

Prize for best oral presentation, CUSO Summer school Villars, Switzerland

2008

Steinhofer Award, faculty award for the best diploma exam; Freiburg DE

PUBLICATIONS

25. **Synthesis of Conjugated Triynes via Alkyne Metathesis**
Idriss Curbet, Sophie Colombel-Rouen, Romane Manguin, Anthony Clermont, Alexandre Quelhas, Daniel S. Müller, Thierry Roisnel, Olivier Baslé, Yann Trolez and Marc Mauduit
Chem. Sci., **2020**, *11*, 4934–4938.
24. **In situ generation of Ru-based metathesis catalyst, a systematic study**
Daniel S. Müller, Yann Raoul, Jérôme Le Nôtre, Olivier Baslé, and Marc Mauduit
ACS Catal. **2019**, *9*, 3511–3518
23. **Stereoretentive Olefin Metathesis Made Easy: In Situ Generation of Highly Selective Ruthenium Catalysts from Commercial Starting Materials**
Daniel S. Müller, Idriss Curbet, Yann Raoul, Jérôme Le Nôtre, Olivier Baslé and Marc Mauduit.
Org. Lett. **2018**, *20*, 6822–6826.
22. **A tutorial review of stereoretentive olefin metathesis based on ruthenium dithiolate catalysts**
Daniel S. Müller, Olivier Baslé and Marc Mauduit
Beilstein J. Org. Chem. **2018**, *14*, 2999–3010.
21. **Synthesis and Application of Stereoretentive Ruthenium Catalysts on the Basis of the M7 and the Ru–Benzylidene–Oxazinone Design**
Adrien Dumas, Daniel S. Müller, Idriss Curbet, Loïc Toupet, Matthieu Rouen, Olivier Baslé and Marc Mauduit.
Organometallics, **2018**, *37*, 829–834
20. **Asymmetric Copper-Catalyzed Carbomagnesiation of Cyclopropenes**
Longyang Dian, Daniel S. Müller and Ilan Marek, *Angew. Chem. Int. Ed.* **2017**, *56*, 6783–6787.
19. **Tandem Hydroalumination/Cu-Catalyzed Asymmetric Vinyl Metalation as a New Access to Enantioenriched Vinylcyclopropane Derivatives**
Daniel S. Müller, Veronika Werner, Sema Akyol, Hans-Günther Schmalz, and Ilan Marek, *Org. Lett.* **2017**, *19*, 3970–3973.
18. **Copper mediated carbometalation reactions**
Daniel S. Müller and Ilan Marek, *Chem. Soc. Rev.*, **2016**, *45*, 4552–4566.
17. **Asymmetric Copper-Catalyzed Carbozincation of Cyclopropenes en Route to the Formation of Diastereo- and Enantiomerically Enriched Polysubstituted Cyclopropanes**
Daniel S. Müller and Ilan Marek *J. Am. Chem. Soc.* **2015**, *137*, 5414–5417
16. **Short Enantioselective Total Syntheses of *trans*-Clerodane Diterpenoids: Convergent Fragment Coupling Using a *trans*-Decalin Tertiary Radical Generated from a Tertiary Alcohol Precursor.**
Y. Slutskey, C. R. Jamison, G. L. Lackner, D. S. Müller, A. P. Dieskau, N. L. Untiedt, L. E. Overman,
J. Org. Chem. **2016**, *81*, 7029–7035.
15. **Constructing Quaternary Stereogenic Centers Using Tertiary Organocuprates and Tertiary Radicals. Total Synthesis of *trans*-Clerodane Natural Products**
Daniel S. Müller, Nicholas L. Untiedt, André P. Dieskau, Gregory L. Lackner, and Larry E. Overman,
J. Am. Chem. Soc. **2015**, *137*, 660–663.
14. **Formation of Quaternary Stereogenic Centers by Copper catalyzed Asymmetric Conjugate Addition Reactions of Alkenyl aluminums to Trisubstituted Enones.**
D. Müller and A. Alexakis, *Chem. Eur. J.* **2013**, *19*, 15226 – 15239.
13. **A Practical Synthesis of SimplePhos ligands; Further Development of Alkyl-substituted Phosphinamines.**
D. Müller, L. Guénée and A. Alexakis, *Eur. J. Org. Chem.* **2013**, 6335–6343.

12. **Direct Trapping of Sterically Encumbered Aluminum Enolates.**
C. Bleschke, M. Tissot, D. Müller and A. Alexakis, *Org. Lett.* **2013**, *15*, 2152-2155.
11. **Creation of Highly Congested Quaternary Centers via Cu-catalyzed Conjugate Addition of Alkenyl Alanates to β -Substituted Cyclic Enones.**
D. Müller and A. Alexakis, *Org. Lett.* **2013**, *15*, 1594-1597.
10. **Copper-Catalyzed Asymmetric Conjugate Addition of Alkenyl- and Alkylalanes to α,β -Unsaturated Lactams.**
P. Cottet, D. Müller and A. Alexakis, *Org. Lett.* **2013**, *15*, 828-831.
9. **Rhodium and Copper-catalyzed asymmetric conjugate addition of alkenyl nucleophiles. (Review)**
D. Müller and A. Alexakis, *Chem. Commun.* **2012**, *48*, 12037-12049.
8. **Copper-Catalyzed Enantioselective Synthesis of Axially Chiral Allenes.**
H. Li, D. Müller, L. Guénée and A. Alexakis *Org. Lett.* **2012**, *14*, 5880-5883.
7. **Formation of quaternary stereogenic centers by NHC-Cu catalyzed asymmetric conjugate addition reactions with Grignard reagents on polyconjugated cyclic enones.**
M. Tissot, D. Poggiali; H. Hénon, D. Müller, L. Guénée, M. Mauduit and A. Alexakis, *Chem. Eur. J.* **2012**, *18*, 8731-8747.
6. **Copper-Catalyzed Asymmetric 1,4-Addition of Alkenyl Alanates to N-Substituted-2-3-dehydro-4-piperidones.**
D. Müller and A. Alexakis *Org. Lett.* **2012**, *14*, 1842-1845.
5. **New Experimental Conditions for Tandem hydroalumination/Cu-Catalyzed Asymmetric Conjugate Additions to β -Substituted Cyclic Enones.**
D. Müller, M. Tissot and A. Alexakis *Org. Lett.* **2011**, *13*, 3040-3043.
4. **Highly Enantioselective and Regioselective Copper-Catalyzed 1,4 Addition of Grignard Reagents to Cyclic Enynones.**
M. Tissot, A. Pérez Hernández, D. Müller, M. Mauduit and A. Alexakis *Org. Lett.* **2011**, *13*, 1524-1527.
3. **Rhodium-Catalyzed Asymmetric 1,4-Addition of Aryl Alanates to Trisubstituted Enones: Binap as an Effective Ligand in the Formation of Quaternary Stereocenters.**
C. Hawner, D. Müller, L. Gremaud, A. Felouat, S. Woodward and A. Alexakis, *Angew. Chem. Int. Ed.* **2010**, *49*, 7769-7772.
2. **Creation of Quaternary Stereogenic Centers via Copper-Catalyzed Asymmetric Conjugate Addition of Alkenyl Alanates to α,β -Unsaturated Cyclic Ketones.**
D. Müller, C. Hawner, M. Tissot, L. Palais and A. Alexakis *Synlett (Cluster)* **2010**, 1694-1698.
1. **Enantioselective and Regiodivergent Copper-Catalyzed Conjugate Addition of Trialkylaluminum Reagents to Extended Nitro-Michael Acceptors.**
M. Tissot, D. Müller, S. Belot and A. Alexakis *Org. Lett.* **2010**, *12*, 2770-2773.

COMMUNICATIONS ORALES

13. **In Situ Generation and assembly line chemistry for the synthesis of ruthenium catalysts from commercial starting materials**
Journée des doctorants 2018, Université de Rennes, France, June 28th, 2018.
12. **OMC day 2018**
OMC day 2018, Université de Rennes, France, June 8th, 2018.
11. **Asymmetric carbometalation of cyclopropenes**
58th Groupe d'Etudes en Chimie Organique (GECO 2017), Dinard, France, August 27th - September 1st, 2017.
10. **The quest for the stereoselective construction of all-carbon quaternary stereocenters**
Invited lecture, University of Padova, Italy, July 7th, 2017.
9. **Bildung von quartären Kohlenstoffzentren: Untersuchung ungewöhnlicher Kohlenstoff-**

Kohlenstoff-Kreuzkupplungen

Invited lecture, University of Tübingen, Germany, June 8th, 2016.

8. **Catalytic asymmetric carbozincation of cyclopropenes**
80th Annual meeting of the Israel Chemical Society, Tel-Aviv, Israel February 10th, 2016.
7. **Synthesis of Quaternary Carbon Stereocentres**
Invited lecture, University of Fribourg, Switzerland, August 3rd, 2015.
6. **Synthesis of Quaternary Carbon Stereocentres**
Invited lecture, University of Stuttgart, April 28th, 2015.
5. **Copper-Catalyzed Asymmetric 1,4-Addition of Alkenyl Alanes to N-Substituted-2-3-dehydro-4-piperidones.**
Swiss Chemical Society: Fall meeting 2012. ETH Zürich, Switzerland; September 13, 2012
4. **A particular challenge: Copper-Catalyzed Asymmetric 1,4-Addition of Alkenyl Alanes to N-Substituted-2-3-dehydro-4-piperidones.**
Geneva Chemistry & Biochemistry days. University of Geneva, Switzerland; June 6-7, 2012.
3. **New Experimental Conditions for Tandem hydroalumination/Cu-Catalyzed Asymmetric Conjugate Additions to β -Substituted Cyclic Enones.**
CUSO Summer School 2011. Villars, Switzerland, August 28 - September 1, 2011.
2. **New Experimental Conditions for Tandem hydroalumination / Cu-Catalyzed Asymmetric Conjugate Additions to β -Substituted Cyclic Enones.**
COST Action D40: Innovative Catalysis V. Valletta, Malta, June 14-16, 2011.
1. **Creation of Quaternary Stereogenic Centers via Copper-Catalyzed Asymmetric Conjugate Addition of Alkenyl Alanes to α,β -Unsaturated Cyclic Ketones.**
TITech-UniGe Symposium 2010. University of Geneva, Switzerland, November 25-26, 2010.

COMMUNICATIONS PAR AFFICHES

8. **Asymmetric carbometalation of cyclopropenes** Müller. D.; Marek I.;
EFMC-ASMC'15 Rehovot, Israel, November 15-18th, 2015.
7. **Asymmetric carbometalation of cyclopropenes** Müller. D.; Marek I.;
OMCOS 18, Sitges-Barcelona, Spain, June 28th-July 2nd, 2015.
6. **Copper-Catalyzed Asymmetric 1,4-Addition of Alkenyl Alanes to N-Substituted-2-3-dehydro-4-piperidones.** Müller. D.; Alexakis A.;
"Balticum Organicum Syntheticum" Tallinn, Estonia, July 1-4, 2012.
5. **"Formation of Vinyl Substituted Quaternary Carbon Stereocenters Through Cu-Catalyzed Enantioselective Conjugate Addition of Vinylaluminiums to β -Substituted Cyclic Enones.** Müller. D.; Alexakis A.;
Swiss Chemical Society: Fall meeting, EPFL Lausanne,, Switzerland, September 9th, 2011.
4. **"Formation of Vinyl Substituted Quaternary Carbon Stereocenters Through Cu-Catalyzed Enantioselective Conjugate Addition of Vinylaluminiums to β -Substituted Cyclic Enones.** Müller. D.; Alexakis A.;
ESOC 2011 Crete, Greece, July 10-15th, 2011.
3. **Creation of quaternary stereogenic centers via coppercatalyzed asymmetric conjugate addition of alkenyl alanes to α,β -unsaturated cyclic ketones.** Müller. D.; Alexakis A.;
Swiss Chemical Society: Fall meeting, ETH Zürich, Switzerland, September 16th, 2010.
2. **Creation of quaternary stereogenic centers via coppercatalyzed asymmetric conjugate addition of alkenyl alanes to α,β -unsaturated cyclic ketones.** Müller. D.; Alexakis A.;
European Cooperation in Science and Technology (COST) Innovation IV meeting, Ankara, Turkey, May 25-27, 2010
1. *OMCOS 12*, Glasgow, UK, July 26-30, 2009

