

• PERSONAL INFORMATION



Family name, First name: García Mancheño, Olga
Researcher ID: H-2459-2011; orcid.org/0000-0002-7578-5418
Publications: 45, Citations: 1772; Citations per article: 43.2; H Index 23
Nationality: Spanish
Date of birth: 10. 12. 1976
URL for web site: <http://www-oc.chemie.uni-regensburg.de/garcia/index.php>

• EDUCATION

- 2005 PhD, Department of Organic Chemistry, Universidad Autónoma de Madrid, Spain (*summa cum laude*)
2001 MSc, Department of Organic Chemistry, Universidad Autónoma de Madrid, Spain

• CURRENT POSITION

- 2013 – Associate Professor of Organic Chemistry
Faculty of Chemistry and Pharmacy / University of Regensburg / Germany

• PREVIOUS POSITIONS

- 2008 – 2013 Research group leader (assistant professor/ Habilitand)
Department of Organic Chemistry, University of Münster, Germany
2005 – 2008 Postdoc with Prof. Dr. C. Bolm
Department of Organic Chemistry / RWTH-Aachen University / Germany
2003 – 2003 Research fellow with Prof. Dr. K. A. Jørgensen at the
Department of Chemistry / Aarhus University / Denmark
2002 – 2002 Research fellow with Prof. Dr. M. T. Reetz at the
Max Planck Institute for Coal Research / Mühlheim an der Ruhr / Germany

• FELLOWSHIPS AND AWARDS

- 2013 – 2014 Max Buchner-Forschungsstipendium (DECHEMA grant)
2013 ESOC 2013 – ACS Catalysis Oral Communication Award
2013 Young Researcher Award (Universitätsgesellschaft Münster)
2012 JSP Program – Bürgerstock Conference 2012
2012 Thieme Chemistry Journal Award 2012
2010 – 2012 Erstklassig! – WWU-Mentoring Program for female scientists
2005 – 2007 Postdoctoral Fellowship given by the Spanish Ministry “Ministerio de Educación y Ciencia” (M.E.C.)
2006 Doctorate-Award. Extraordinary Award from the Universidad Autónoma de Madrid (U.A.M)
2004 Lilly Investigation Award, 2nd Price, Spanish II Edition
2001 – 2005 F.P.U. Predoctoral Research Fellowship by the Spanish Ministry M.E.C.
1999 – 2001 Predoctoral Research Fellowship by the University U.A.M.
1998 – 1999 Undergraduate Research Fellowship by the Spanish Ministry M.E.C.

• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

- 2009 – 2015 -- Postdocs / 7 PhD students / 12 Master/diploma students
at Münster University, Germany (until 2013) and at the
Faculty of Chemistry and Pharmacy, University of Regensburg, Germany

• TEACHING ACTIVITIES

- Since 2008 Teaching chemistry at all levels from first year chemistry class to specialized graduate organic chemistry seminars.
- 2015/2016 Participation in a study at Wissenschaftszentrum Straubing on the assessment and improvement of teaching quality within the Project "SoKonBe - external, pedagogic psychological consultation of teachers to improve the quality of teaching with a focus on effective use of socio cognitive conflicts" conducted by TU Chemnitz, Institute of Psychology (BMBF-Project: Nr. 01PB14002).
- 2012 – 2013 Preparation of (high)school students for the International Chemistry Olympiad (IChO) at the North Rhine-Westphalia regional stage at the University of Münster

• INSTITUTIONAL RESPONSIBILITIES

- 2014 – 2015 Coordinator of the DAAD personal exchange program (DAAD-PPP Spanien 2014/15) between Regensburg University (Germany) and Universidad Autónoma de Madrid (Spain)
- 2010 – 2013 Spokeswoman of the ERASMUS program between the University of Münster (Germany) and the Universidad Autónoma de Madrid (Spain)

• COMMISSIONS OF TRUST

- Since 2011 Reviewer for the per-review journals: Angew. Chem., JACS, Chemistry-EurJ., Chemistry-AsianJ., Org.Lett., JOC, EJOC, Adv.Synth.Catal., ChemCommun, OBC, Synthesis, etc.
- Since 2013 Reviewer for postdoctoral scholarships of the German Research Foundation (Deutsche Forschungsgemeinschaft, DFG)
- Since 2013 Member of the International Advisory Board of the open access journal „Asymmetric Catalysis“, DE GRUYTER OPEN.

• MEMBERSHIPS OF SCIENTIFIC SOCIETIES

German Chemical Society (GDCh), Spanish Chemical Society (RSEQ)

• MAJOR COLLABORATIONS

Assist. Prof. Dr. José Alemán, Department of Organic Chemistry, Universidad Autónoma de Madrid, Spain
Dr. Christian Mück-Lichtenfeld, Department of Organic Chemistry, University of Münster, Germany

• RESEARCH PROFILE

1. *Oxidative C-H-Bond Functionalization*. We are interested in the development of novel, mild oxidative C-H bond functionalization reactions with transition metals or metal-free systems for the synthesis of valuable (bioactive) heterocycles. We introduced TEMPO oxoammonium salts as mild, non-toxic and efficient oxidants for C-C coupling reactions of C(sp³)-H bonds. Recently, we are expanding this type of oxidative C-H bond functionalization chemistry to more interesting substrates and reagents aiming a more general and broader synthetic applicability of this methodology. Thus, the first examples on oxidative C(sp³)-H bond/ring expansion tandem reactions leading to interesting 7-ring heterocycles has been reported.

2. *H-Donor Organocatalysis*. We are engaged in the development and evaluation of the catalytic properties of new highly efficient and easily accessible new H-bond donors and their application in Anion-Binding Catalysis. In this are, novel chiral oligo-triazole anion receptors, able to efficiently catalyzed asymmetric transformations, were prepared by our group for the first time.

1. Five representative publications

1. *Dehydrogenative TEMPO-Mediated Formation of Unstable Nitrones: Easy Access to N-Carbamoyl Isoxazolines*
A. Gini, M. Segler, D. Kellner, O. García Mancheño,* *Chem. Eur. J.* **2015**, Early View, DOI: [10.1002/chem.201501314](https://doi.org/10.1002/chem.201501314) (HOT PAPER)
The paper disclosed a TEMPO-mediated formal “dehydrogenation” of N-protected benzyl-, allyl- and alkyl-substituted hydroxylamines followed by in situ trapping of the generated unstable nitrones into synthetically valuable N-carbamoyl 4-isoxazolines.
2. *Highly Enantioselective Nucleophilic Dearomatization of Pyridines by Anion-Binding Catalysis*
O. García Mancheño,* S. Asmus, M. Zurro, T. Fischer, *Angew. Chem. Int. Ed.* **2015**, *54*, 8823-8827. DOI: [10.1002/anie.201502708](https://doi.org/10.1002/anie.201502708)
The asymmetric dearomatization of N-heterocycles is an important synthetic method to gain bioactive and synthetically valuable chiral heterocycles. We describe here the first anion-binding-catalyzed, highly enantioselective nucleophilic dearomatization of pyridines with triazole-based H-bond donor catalysts. This method offers a straightforward and useful synthetic approach to chiral N-heterocycles from abundant and readily available pyridines.
3. *Oxidative C-H Bond Functionalization-Ring Expansion Reaction with TMSCHN₂: A novel Cu(I)-Catalyzed Approach to Dibenzoxe- and Dibenzazepines*
T. Stopka, L. Marzo, M. Zurro, S. Janich, E.-U. Würthwein, C. G. Daniliuc, J. Alemán,* O. García Mancheño,* *Angew. Chem. Int. Ed.* **2015**, *54*, 5049-5053. DOI: [10.1002/anie.201411726](https://doi.org/10.1002/anie.201411726)
Tricyclic dibenzoxepines and dibenzazepines are important therapeutic agents for the pharmaceutical industry and academic research. However, their syntheses are generally rather tedious, requiring several steps that involve a Wagner–Meerwein-type rearrangement under harsh conditions. Herein, we present the first copper(I)-catalyzed oxidative C-H bond functionalization and ring expansion with TMSCHN₂ to yield these important derivatives in a facile and straightforward way.
4. *Chiral Helical Oligotriazoles: New Class of Anion-Binding Catalysts for the Asymmetric Dearomatization of Electron-Deficient N-Heteroarenes*
M. Zurro, S. Asmus, S. Beckendorf, C. Mück-Lichtenfeld, O. García Mancheño,* *J. Am. Chem. Soc.* **2014**, *136*, 13999-14002. DOI: [10.1021/ja507940k](https://doi.org/10.1021/ja507940k)
In this work, structural unique chiral oligotriazoles have been developed as C–H bond-based anion-binding catalysts for the asymmetric dearomatization of N-heteroarenes.
5. *Mild Metal-free Tandem α -Alkylation/Cyclization of N-Benzyl Carbamates with Simple Olefins*
H. Richter, Roland Fröhlich, Constantin G. Daniliuc, Olga García Mancheño,* *Angew. Chem. Int. Ed.* **2012**, *51*, 8656-8660. DOI: [10.1002/anie.201202379](https://doi.org/10.1002/anie.201202379)
The chemoselective oxidative α -C(sp³)-H alkylation/cyclization reaction of N-benzyl carbamates using simple mono-, di-, and trisubstituted olefins provides functionalized N-heterocycles such as oxazinones. A TEMPO oxoammonium salt serves as the oxidant, making it possible to carry out the reaction at low temperatures.

2. Research monographs

1. Book chapter: A. Nijs, O. García Mancheño, C. Bolm*, “N,O-Bidentate Ferrocenyl Ligands” in *Chiral Ferrocenes in Asymmetric Catalysis: Synthesis and Applications*; Eds: L.-X. Dai, X.-L. Hou. Wiley-VCH, Weinheim, pp. 149-174, 2009.
2. Book chapter: O. García Mancheño, C. Bolm*, “Oxidations of Heteroatoms (N and S)” in *Iron Catalysis in Organic Chemistry: Reactions and Applications*; Ed: B. Plietker. Wiley-VCH, Weinheim, pp. 109-123, 2008.

3. Granted patents

4. Invited presentations to internationally established conferences / international advanced schools.

CATAFLU.OR 2011, Bologna, Italy, March 2011; WCCAS-2011, BIT's 2nd Annual World Congress of Catalytic Asymmetric Synthesis, Beijing, August 2011; 8th Workshop Germany-France ASMOS 8, Université de Bourgogne Dijon "La Bergerie", France, November 2012; Summer School „Engineering and Management across Cultures“, TUM/Straubing, Germany, August 2014; 5th Sino-German Frontiers of Chemistry Symposium, Berlin, Germany, September 2014; RSEQ 2015, La Coruña, Spain, July 2015.

5. International Prizes/ Awards/ Academy memberships.

2013	ESOC 2013 – ACS Catalysis Oral Communication Award
2012	Thieme Chemistry Journal Award 2012