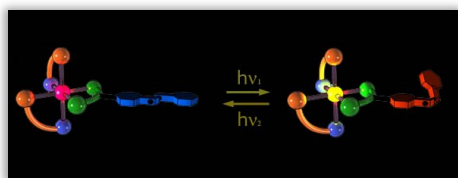


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Education.

- 2000 PhD (Catalysis)**, Universitat Autònoma de Barcelona, Spain.
Title: New ligands for rhodium catalyzed asymmetric hydroformylation.
Supervisor: Prof. Dr. J.C. Bayón (*cum laude*).
- 1997 Master (Catalysis)**, Universitat Autònoma de Barcelona, Spain.
Main subject: Synthesis and catalytic applications of dithiolates: rhodium catalyzed hydroformylation. Supervisor Prof. Dr. J.C. Bayón.
- 1994 Bachelor of Science (Chemistry – Inorganic Chemistry)**,
Universitat Autònoma de Barcelona, Spain.

Professional experience.

- 11.2010 / current Ikerbasque Research Professor**
Universidad del País Vasco (UPV-EHU), San Sebastián
- 04.2010 / 09.2010 Lecturer**
Universitat de Barcelona (UB)
- 03.2004 / 11.2009 Group manager & "Ramón y Cajal" fellow**
Institut Català d'Investigació Química (ICIQ),
Tarragona, Spain.
- 01.2001 / 12.2003 Post-doctoral researcher**
Universiteit van Amsterdam (UvA), Amsterdam, The
Netherlands.
- 04.2000 / 12.2000 Docent**
Escola Superior de Tecnologia de Castelo Branco,
Portugal.
- 10.1999 / 11.2000 Researcher and Docent**
Universidade de Coimbra (UdC), Coimbra, Portugal.
- 09.1994 / 09.1999 Lecturer Y2, Predoctoral fellow, Lecturer Y3**
Universitat Autònoma de Barcelona (UAB),
Bellaterra, Spain.

Current research line.

The long-term goal of the research line that I pursue since I started my independent career is the development of **light-tunable organometallic compounds**, for a wide range of applications, being catalysis the main focus. After some initial explorative years, we have a set of synthetic tools to readily incorporate azobenzene derivatives in a wide range of compounds, and we are expanding them to the synthesis of DTE-based photoswitches. Along these years we have synthesized more than 60 new azobenzene-appended organometallic complexes, and studied them for several applications: iridium(III) triscyclometalated for **phosphors** in OLEDs, ruthenium(II) and iridium(III) half-sandwich complexes to be used as **photoswitchable catalysts**, or ruthenium(II) compounds as **metalodrugs for cancer therapy** are the first examples we worked on.

Our current challenge is the development of a new generation of compounds displaying **photo-induced chirality**.

Expanding the range of compounds, and applications together with gaining a better **understanding and control of their interaction with light** is our daily task that should bring us through a path of amazing discoveries.



Research background.

After obtaining the Bachelor in Chemistry by the Universitat Autònoma de Barcelona (UAB) in 1994 I enrolled as PhD student at the group of Prof. J.C. Bayón. Within that period I spent 18 months at the University of Coimbra as contracted researcher, obtaining the PhD in Chemistry by the UAB in 2000. Afterwards, I moved to the University of Amsterdam where I spent 3 years as a postdoctoral researcher at the group of Prof. van Leeuwen (2001–2003). In 2004 I returned to Spain, joining the Institute of Chemical Research of Catalonia (ICIQ) as Ramón y Cajal fellow and Group Manager of Prof. van Leeuwen's group. During that period (2004–2009) I co-supervised all the research projects of the group (both academic and industrial). Our main focus was on Supramolecular Catalysis. After a short period as Lecturer at the University of Barcelona, in 2010, I accepted the position I am currently holding as Ikerbasque Research Professor at the University of the Basque Country (UPV-EHU).

Since I started my independent career, and always looking for new challenges in research, I drove my interest toward the development of photo-switchable organometallic complexes. The use of that stimuli-responsive entities in catalysis, to create photo-switchable catalysts is one of the most promising possibilities, but those unique compounds can also encounter many other fascinating applications. In my group we explore several of them, such as their use as phosphors for photo-switchable OLEDs, as sensors, as photo-sensitizers for solar cells, or as (photo-activatable) metalodrugs.

The most relevant achievements in the different areas I explored along my career are:

Homogeneous catalysis: Together with Prof. van Leeuwen, we developed a unique ligand, SPANphos, which has been considered the first truly trans-spanning diphosphine ligand. Some of its organometallic complexes presented unique properties, as for instance extraordinary activity in methanol carbonylation processes (ACIE 2003, ACIE 2005, Dalton 2006, OM 2005).

More recently, I have also unravelled the mechanism operating in metal-catalyzed processes for the hydrogen generation by hydrolysis of amineborane adducts (ACS Cat. 2017) and imine hydrosilylation (Catal. Sci & Tech 2018), using half-sandwich ruthenium and iridium complexes.

Supramolecular catalysis: Together with Prof. van Leeuwen we developed bifunctional ligands which permitted us to create large libraries of supramolecularly-built ligands, very effective in both non-enantioselective and asymmetric catalytic processes (ACIE 2007, JACS 2011). We also established, for the first time, the possibility to use ionic interactions as driving force for the construction of supramolecular catalysts (Chem. Eur. J. 2007, patent WO 2008031889 for BASF).

Photoswitchable catalysis: Very recently, I developed the first example of a photo-tunable catalyst for the generation of hydrogen by hydrolysis of amino-borane adducts. (Eur.JIC 2010, Dalton 2017).

Concerning the other areas of applications of photo-switchable organometallics, their potential use as metalodrugs or as photo-tunable phosphors, is currently being under study in collaboration with several specialized groups.

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Funded Research Projects (2011-2018).

- 2017 / 2019** **UPV-EHU (GIU16/25)**. PI M.A. Garralda. Total funding 35000€
- 2016 / 2018** **MINECO (CTQ2015-65268-C2-1P)**. Coordinated project. PI: Z. Freixa (coordinator), M.A. Garralda, M.A. Huertos. Total funding 98000€.
- 2014 / 2016** **UPV-EHU Research group (GIU13/06)**. PI MA Garralda. Total funding 35000€.
- 2014 / 2015** **ICIQ/ IKERBASQUE** collaboration agreement. PIs Z. Freixa, PWNM van Leeuwen. Total funding 18000 €.
- 2014 / 2015** **Basque-Government, Network Program "Comunidad de Trabajo de los Pirineos (CTP13-R03)**. Consortium: Prof. K. Philippot (Toulouse), Prof. N. McClenahan (Bordeaux), Dr. X. Sala (UAB), Dr. Z. Freixa (UPV-EHU). Local funding 6900€
- 2013** **Basque Government Saiotek Program, (S-PE13UN020)**. PI Z. Freixa. Total funding 5092 €.
- 2012 /2013** **Basque Government Saiotek Program, (S-PE12UN044)**. PI Z. Freixa. Total funding 18600€ .
- 2011 /2012** **Basque Government Saiotek Program, (SPE11UN029)**.PI Z. Freixa. Total funding 14114 €.
- 2011 / 2013** **MINECO (CTQ2011-23333)**. PI Z. Freixa. Total funding 30000 €

Research supervision (2010-2018).

PHD THESIS:

Ongoing: A.I. Aranburu, F.B. Urquiola, A. Centeno.

- 2017** J. Pérez Miqueo "*Complejos ciclometalados de Ir(III) derivados de azobenceno. Estudio de aplicaciones* "
- 2016** A. Telleria "*Photo-switchable organometallic compounds. Screening of applications*"
- 2010** D.M. Rivillo "*Metal-templated self-assembled diphosphines* "
- 2010** M.D. Segarra "*Switchable and tunable ligands for homogeneous catalysis* "

MASTER THESIS:

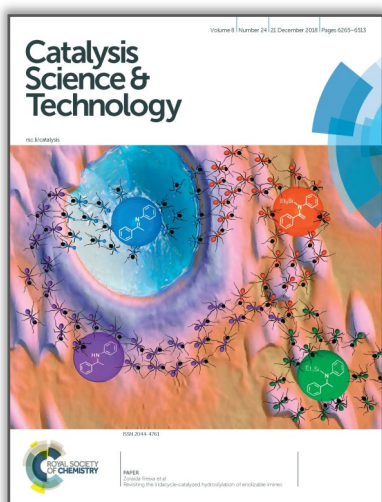
- 2017** F. Borja Urquiola "*Catalizadores de iridio para generación de hidrógeno*"
- 2014** M. Muñoz "*Deshidrogenación de aductos amino-borano con catalizadores de rutenio*"
- 2012** A. Telleria "*Complejos organometálicos de rutenio(II) e iridio (III) que incorporan la unidad azobenceno como fotosensibilizador*"
- 2012** A. ibarnavarro "*Preparación de materiales híbridos grafeno-complejos de iridio*"

FINAL DEGREE PROJECTS:

- 2018** (M. Sanz, P. Corral); **2017** (B. Patino, G. Galarraga); **2016** (M. Vázquez; B. urquiola; O. Hernández).



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Publications.

RESEARCH PAPERS:

“Revisiting the iridacycle-catalyzed hydrosilylation of enolizable imines”
Catal. Sci. Tech., **2018**, 23, 6316–6329

Pérez-Miqueo J., San Nacienceno V., Urquiola F.B., Freixa Z.

“Light-driven water oxidation using hybrid photosensitizer-decorated Co₃O₄ nanoparticles”

Materials Today Energy, **2018**, 9, 506–515.

de Tovar J, Romero N, Denisov SA, Bofill R, Gimbert-Surinach C, Ciuculescu-Pradines D., Drouet S., Llobet A., Lecante P., Colliere V., Freixa Z., McClenaghan N., Amiens C., Garcia-Anton J., Philippot K., Sala X.

“Experimental Evidence Supporting Related Mechanisms for Ru(II)-Catalyzed dehydrocoupling and Hydrolysis of Amine-Boranes”

ACS Catalysis, **2017**, 7(12), 8394–8405.

Telleria A., Vicent C., San Nacienceno V., Garralda M.A., Freixa Z.

“Azobenzene-based ruthenium(II) catalysts for light-controlled hydrogen generation”

Dalton Trans. **2017**, 46, 3569–3578.

Telleria A., van Leeuwen, P.W.N.M., Freixa Z.

“Photoswitchable azobenzene-appended iridium(III) complexes”

Dalton Trans. **2016**, 13726–13741.

Pérez-Miqueo J., Altube A., García-Lecina E., Tron A., McClenaghan N.D., Freixa Z.

“Synthesis and characterization of diethylphosphonate and carboxylate-appended iridium complexes for application on dye-sensitized solar cells”

Chemistry Select. **2016**, 1, 2842–2848.

Telleria A., Kohlrausch E.C., Duarte RdC., Rodembusch F.S., Dupont J., Freixa Z., Santos M.J.L.

“Azobenzene-Appended Bis-Cyclometalated Iridium(III) Bipyridyl Complexes”

Organometallics, **2015**, 34, 5513–5529.

Telleria A., Pérez-Miqueo J., Altube A., García-Lecina E., deCozar A., Freixa Z.

“Highly active, chemo- and enantioselective Pt-SPO catalytic systems for the synthesis of aromatic carboxamides”

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Gulyás H., Rivilla I., Curreli S., Freixa Z., van Leeuwen P.W.N.M.

“Palladium catalyzed oxidative carbonylation of alcohols: effects of diphosphine ligands”

Catal. Sci. Tech., **2015**, 5, 2856–2864.

Amadio E., Freixa Z., van Leeuwen P.W.N.M., Toniolo L.

“Insights into the use of [Ru(p-Cym)(bipy)Cl]Cl as precatalyst for solvolytic dehydrogenation of ammonia-borane”

Inorg. Chim. Acta, **2015**, 431, 184–189.

Freixa Z., Garralda M.A.

“A readily accessible ruthenium catalyst for the solvolytic dehydrogenation of amine-borane adducts”

Dalton Trans., **2014**, 43, 11404–11409.

Muñoz-Olasagasti M., Telleria A., Pérez-Miqueo J., Garralda M.A., Freixa Z.

“Strong π-Acceptor Ligands in Rhodium Catalyzed Hydroformylation of Ethene and 1-Octene: Operando Catalysis”

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Diebolt O., Tricas H, Freixa Z., van Leeuwen P.W.N.M.

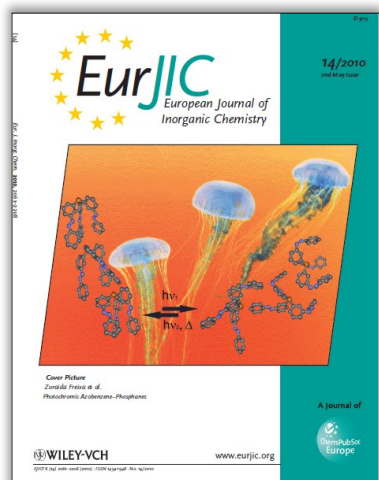
“N-Tetradentate SPANamine Derivatives and Their Mn(II) - Complexes as Catalysts for Epoxidation of Alkenes”

Eur. J. Inorg. Chem., **2013**, 7, 1213–1224

Rich R., Rodríguez M., Romero I., Fontrodona X., van Leeuwen P.W.N.M., Freixa Z., Sala X., Poater A., Solà M.



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“Bidentate ligands templated by a convex trimetallic bis (salphen) platform”

Supramolecular Chemistry, **2012**, *1*, 1–8.

Freixa Z., Ponsico S., Frischmann P.D., MacLachlan M.J., Martínez-Belmonte M., Escudero-Adan E.C., van Leeuwen P.W.N.M.

“Relationship Between Conformational Flexibility and Chelate Cooperativity”

J. Org. Chem., **2011**, *76*, 2723–2732.

Misuraca M.C., Grecu T., Freixa Z., Garavini V., Hunter C.A., van Leeuwen P.W.N.M., Segarra-Maset M.D., Turega S.M.

“SPOs as new ligands in Rh(III) catalyzed enantioselective transfer hydrogenation”

Catal. Sci. Tech., **2011**, *1*, 401–407.

Castro P.M., Gulyás H., Benet-Buchholtz J., Bo C., Freixa Z., van Leeuwen P.W.N.M.

“Zn(II) Robson macrocycles as templates for chelating diphosphines”

Dalton Trans., **2011**, *40*, 10686–10697

Ponsico S., Gulyas H., Martínez-Belmonte M., Escudero-Adan E.C., Freixa Z., van Leeuwen P.W.N.M.

“SPANamine derivatives in the catalytic asymmetric α -fluorination of β -keto esters”

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Jacquet O., Clément N.D., Freixa Z., Ruiz A., Claver C., van Leeuwen P.W.N.M.

“Enantioselective Supramolecular Catalysis Induced by Remote Chiral Diols”

J. Am. Chem. Soc., **2011**, *133*, 18562–18565.

van Leeuwen P.W.N.M., Rivillo D., Raynal M., Freixa Z.

“Large P–P distance diphosphines and their monophosphine analogs as ligands in the Pd-catalyzed telomerization of 1,3-butadiene and methanol”

Organometallics, **2011**, *30*, 792–799.

Tschan M.J.-L., López-Valbuena J.M., Freixa Z., Launay H., Hagen H., Benet-Buchholz J., van Leeuwen P.W.N.M.

“Efficient Bulky Phosphines for the Selective Telomerization of 1,3-Butadiene with Methanol”

J. Am. Chem. Soc., **2010**, 6463–6473.

Tschan M.J.-L., García-Suárez E.J., Freixa Z., Launay H., Hagen H., Benet-Buchholz J., van Leeuwen P.W.N.M.

“An approach to bimetallic catalysts by ligand design”

Dalton Trans., **2010**, 8560–8574.

López-Valbuena J.M., Escudero-Adan E.C., Benet-Buchholz J., Freixa Z., van Leeuwen P.W.N.M.

“Light Switches the Ligand! Photochromic Azobenzene–Phosphanes”

Eur. J. Inorg. Chem., **2010**, 2075–2078.

Segarra-Maset M.D., van Leeuwen P.W.N.M., Freixa Z.

“Bite angle effects of diphosphines in C–C and C–X bond forming reactions”

Chem. Soc. Rev., **2009**, 1099–1118.

Birkholz M.-N., Freixa Z., van Leeuwen P.W.N.M.

“Modular Spiro Bidentate Nitrogen Ligands: Synthesis, Resolution and Application in Asymmetric Catalysis”

Eur. J. Org. Chem., **2008**, 6197–6205.

Sala X., García Suárez E.J., Freixa Z., Benet-Buchholz J., van Leeuwen P.W.N.M.

“Trans-chelating diphosphines, the elusive ligands!”

Coord. Chem. Rev., **2008**, *252(15–17)*, 1755–1786.

Freixa Z., van Leeuwen P.W.N.M.



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“Chelate-size Effects on the Structures, Chemical Behavior, Properties and Catalytic Activity of the New Palladium(II)-Allyl Complexes: [Pd(η^3 -1-R¹-C₃H₄){FcCH=N-CH₂-(CH₂)_n-NMe₂]}][PF₆] {Fc = (η^5 -C₅H₅)Fe(η^5 -C₅H₄), n = 2 or 1 and R¹ = H or Ph}”

Organometallics, **2008**, 27(17), 4288–4299. Pérez S., López C., Bosque R., Solans X., Font Bardía M., Roig A., Molins E., van Leeuwen P.W.N.M., van Strijdonck G.P.F., Freixa Z.

“Wide Bite Angle Diphosphinines: Design, Synthesis and Coordination Properties”

Organometallics, **2008**, 27(5), 834–838.

Mueller C., Freixa Z., Lutz M., Spek A., Vogt D., van Leeuwen P.W.N.M.

“Schiff bases containing ferrocenyl and thienyl units and their utility in the palladium catalyzed allylic alkylation of cinnamyl acetate.”

J. Organomet. Chem., **2007**, 692, 5017–5025.

Pou D., Platero-Prats A.E., Pérez S., López C., Solans X., Font-Bardía M., van Leeuwen P.W.N.M., van Strijdonck G.P.F., Freixa Z.

“Wide bite angle diphosphines by assembly of ditopic ligands for selective rhodium catalyzed hydroformylation”

Angew. Chem. Int. Ed., **2007**, 46, 7247–7250.

Rivillo D., Gulyás H., Benet-Buchholz J., Escudero-Adán E.C., Freixa Z., van Leeuwen P.W.N.M.

“Chiral Calix[4]arene-based Diphosphites as Ligands in the Asymmetric Hydrogenation of Prochiral Olefins”

Eur. J. Inorg. Chem., **2007**, 29, 4587–4591.

Marson A., Freixa Z., van Leeuwen P.W.N.M., Kamer P.C.J.

“Palladium(II)-allyl complexes containing chiral N-donor ferrocenyl ligands”

J. Organomet. Chem., **2007**, 692, 4215–4226.

Platero-Prats A.E., Perez S., Lopez C., Solans X., Font-Bardía M., van Leeuwen P.W.N.M., van Strijdonck G.P.F., Freixa Z.

“Ionic interaction as a powerful driving force for the formation of heterobidentate assembly ligands”

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“Supramolecular trans-coordinating phosphine ligands”

Organometallics, **2006**, 25, 954–960.

Knight L.K., Freixa Z., Van Leeuwen P.W.N.M., Reek J.N.H.

“SPANphos: trans-spanning diphosphines as cis chelating ligands”

Dalton Trans., **2006**, 1, 268–278.

Jimenez-Rodriguez C., Roca F.X., Bo C., Benet-Buchholz J., Escudero-Adan E.C., Freixa Z., van Leeuwen P.W.N.M.

“Revisiting the Methyl Iodide Oxidative Addition to Rhodium Complexes: A DFT Study of the Activation Parameters”

Organometallics, **2005**, 24, 5718 – 5723.

Feliz M., Freixa Z., Van Leeuwen P.W.N.M, Bo C.

“Activity of SPANphos rhodium dimers in methanol carbonylation”

Angew. Chem. Int. Ed., **2005**, 44, 4385–4388.

Freixa Z., Kamer P.C.J., Lutz M., Spek A.L., van Leeuwen P.W.N.M.

“High pressure infrared and nuclear magnetic resonance studies of the rhodium-sulfoxantphos catalysed hydroformylation of 1-octene in ionic liquids”

New J. Chem., **2003**, 27, 1294–1296.

Silva S.M., Bronger R., Freixa Z., Dupont J., van Leeuwen P.W.N.M.

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“Methoxycarbonylation of ethene by palladium(II) complexes with 1,1'-bis(diphenylphosphino)octamethylferrocene”

Organometallics, **2003**, *22*, 2409–2421.

Bianchini C., Meli A., Oberhauser W., van Leeuwen P.W.N.M., Zuideveld M.A., Freixa Z., Kamer P.C.J., Spek A.L., Gusev O.V., Kal'sin A.M.

“Alcoholysis of Acylpalladium(II) Complexes Relevant to the Alternating Copolymerization of Ethene and Carbon Monoxide and the Alkoxy-carbonylation of Alkenes: The Importance of Cis-Coordinating Phosphines”

J. Am. Chem. Soc., **2003**, *125*, 5523–5539.

van Leeuwen P.W.N.M., Zuideveld M.A., Swennenhuis B.H.G., Freixa Z., Kamer P.C.J., Goubitz K., Fraanje J., Lutz M., Spek A.L.

“Efecto del ángulo de quelatación en catalizadores con ligandos difosfina: ¿estérico o electrónico?”

Anais do 12º Congresso Brasileiro de Catálise, **2003**, 1135–1140.

Freixa Z., van Leeuwen P.W.N.M.

“Bite angle effects in diphosphine metal catalysts: steric or electronic?”

Dalton Trans., **2003**, *19*, 1890–1901.

Freixa Z., van Leeuwen P.W.N.M.

“SPANphos: A C2-Symmetric trans-Coordinating Diphosphane Ligand”

Angew. Chem. Int. Ed., **2003**, *42*, 1282–1287.

Freixa Z., Beentjes M.S., Batema G.D., Dieleman C.B., van Strijdonck G.P.F., Reek J.N.H., Kamer P.C.J., Fraanje J., Goubitz K., van Leeuwen P.W.N.M.

“Rhodium catalyzed asymmetric hydroformylation of vinylarenes with a diphosphite ligand forming a large chelating ring”

J. Chem. Soc., Dalton Trans., **2001**, *14*, 2067–2068.

Freixa Z., Bayon J.C.

“Diastereoselective hydroformylation of Delta(4)-steroids with rhodium-phosphite catalysts”

Tetrahedron-Asymmetry, **2001**, *12*, 1083–1087.

Freixa Z., Pereira M.M., Bayon J.C., Silva A.M.S., Salvador J.A.R., Beja A.M., Paixao J.A., Ramos M.

“Binuclear and polynuclear rhodium complexes containing chiral dithiolate ligands derived from lactic acid”

Appl. Organomet. Chem., **2000**, *14*, 56–57.

Freixa Z., Martin E., Gladioli S., Bayon J.C.

“Evidence of a rhodium catalytic species containing a bridging 1,2-diphosphine in styrene hydroformylation”

J. Chem. Soc., Dalton Trans., **1999**, *18*, 3245–3251.

Freixa Z., Pereira M.M., Pais A.A.C.C., Bayon J.C.

PATENTS:

“Pnicogen pseudochelating ligands containing ionic or ionizable groups capable of intermolecular ionic interaction and aggregation for transition metal-catalyzed asymmetric addition reactions”

Rudolph J., Paciello R., Gulyás H., Freixa Z., van Leeuwen P.W.N.M. **BASF**, WO 2008031889

“Palladium phosphine complexes for the telomerization of butadiene”

van Leeuwen PWNM, Tschan M, Garcia-Suarez EJ, Freixa Z, Hagen H **DOW Global Technologies Inc.** WO 2010130846

“Novel phosphine-based catalysts useful for the telomerization of butadiene”

van Leeuwen PWNM, Tschan M, Freixa Z, Hagen H **DOW Global Technologies Inc.** ES201/070086

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BOOK CHAPTERS:

“Supramolecular catalysis: refocusing catalysis” in **“Supramolecular catalysis”**

(PWNM van Leeuwen Ed.) Wiley-VCH, **2008**, pag. 255–299.
van Leeuwen PWNM, Freixa Z.

Chapter 10.2 **“Properties of Phosphorus Ligands”** in **“Phosphorous Ligands in Asymmetric Catalysis: Synthesis and Applications”**

(Armin Börner Ed.) Wiley-VCH, **2008**, pag. 1433–1471.
van Leeuwen P.W.N.M., Freixa Z., Zuidema E.

Chapter B9 **“Methanol Carbonylation: Ligands Evolution”** in **“Catalysis from theory to Application”**

(J.L. Figueiredo, M.M. Pereira, J. Faria Ed.) Coimbra University Press, **2008**, pag. 409–438.
Freixa Z.

Chapter B10 **“Industrial Homogeneous Catalysis: From Bulk to Fine”** in **“Catalysis from theory to Application”**

(J.L. Figueiredo, M.M. Pereira, J. Faria Ed.) Coimbra University Press, **2008**, pag. 439–475.
van Leeuwen PWNM, Freixa Z.

Chapter 7.03 **“Application of rhodium complexes in homogeneous catalysis with carbon monoxide”** in **“Comprehensive Organometallic Chemistry III, volume 7”**

(C. Claver vol. Editor; R.H.Crabtree & D.M. Mingos Chief Editors) Elsevier, **2007**, pag. 237–265.
van Leeuwen P.W.N.M., Freixa Z.

Chapter 9 **“Carbon monoxide as a chemical feedstock: carbonylation catalysis”** in **“Activation of Small Molecules: Organometallic and Bioinorganic Perspectives”**

(W. B. Tolman Ed.) Wiley-VCH, **2006**, pag. 319–356.
van Leeuwen PWNM, Freixa Z.

Scholarships/recognitions.

- 2009** **I3P** accreditation from the Spanish Ministry of Science and Innovation in recognition to an outstanding research trajectory.
- 2009** **Associate Professor** accreditation from the Catalan Agency for the Quality of the University (AQU)
- 2004 / 2009** **Ramon y Cajal** fellowship from the Spanish Ministry of Science and Innovation.
- 2003** **Lecturer** accreditation from the AQU.
- 1995 / 1999** **DGR** fellowship to conduct the PhD studies from the Catalan Government.

Commissions of trust.

External evaluator for FONCYT (Argentina), 2017.

External evaluator for ANR (France) 2017, 2018.

Member of the panel of experts for the evaluation of National Research Projects (2016, 2017)

External evaluator of ANEP 2009, 2011, 2012, 2014, 2018.

PhD thesis committees: E. Guimet (URV-2005), L. Crespi (UAB-2007), X. Sala (UdG-2007), B.K. Muñoz (reserve, URV- 2007), E.M. Guillamón (UJI, 2009), (A García, UdZ, 2009), A Barrios (UJI, 2012), D Peral, (UAB, 2013), J Aguiló (UAB, 2013), E. Amadio (UPV-EHU, 2016), P. Clavero (UB, 2016).

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Organization of scientific events.



"**Organometallic Chemistry day**", Alcalá de Henares, 22 Sept 2017.

S19 Symposium "Reacciones de formación y ruptura de enlaces inducidas por metales. Diseño de ligandos" at the XXXVI Reunión bienal de la Sociedad Española de Química, Sitges, 25-29 Jun 2017.

Workshop "From Bioinorganic Chemistry to Catalysis", Donostia International Physics Center, 6 June 2017, Donostia (Spain).

XXXIII Meeting of the Specialized Group on Organometallic Chemistry (GEQO) of the RSEQ, Madrid, 14 May 2015.

Memberships.

Member of the Spanish Royal Society of Chemistry (RSEQ)

Vice-president of the Specialized Group on Organometallic Chemistry (GEQO) of the RSEQ (2014–2018).

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