

CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	Manuel		
Family name	Iglesias Alonso		
e-mail		URL Web:	
Open Researcher and Contributor ID (ORCID)	0000-0003-3144-5320		
Scopus ID:	35473367500		

A.1. Current position

Position	Científico Titular del CSIC		
Initial date	03/08/2020		
Institution	Consejo Superior de Investigaciones Científicas (CSIC)		
Department/Center	Catálisis y Procesos Catalíticos	Instituto de Síntesis Química y Catálisis Homogénea (ISQCH)	
Country	Spain	Teleph. number	
Key words	Organometallics, Catalysis, Mechanisms, Earth-abundant metals		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
2018-2020	Ramón y Cajal/Universidad de Zaragoza/Spain
2015-2018	Investigador Contratado/Universidad de Zaragoza/Spain
2012-2015	Juan de la Cierva/Universidad de Zaragoza/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD	Cardiff University/United Kingdom	2008
Licensed	Universidad de Vigo/Spain	2003

Part B. CV SUMMARY (max. 5000 characters, including spaces)

Dr. Manuel Iglesias earned his PhD in 2008 from Cardiff University (UK) under Prof. Kingsley J. Cavell, working on N-heterocyclic carbene (NHC) ligands and their catalytic applications. He then expanded his expertise through postdoctoral research with Prof. Martin Albrecht at the University of Fribourg (Switzerland), focusing on mesoionic NHCs and hybrid polyoxometalate/Pd-NHC catalysts for cross-coupling and dehalogenation. A second postdoctoral stay at University College Dublin (Ireland) followed, centered on remote NHC chemistry. In 2010 he joined Prof. Luis A. Oro's group at the University of Zaragoza. During this period, he held "Juan de la Cierva" and "Ramón y Cajal" fellowships and received the 2015 Research Award from the Real Academia de Ciencias de Zaragoza. Since August 2020, he has been a tenured researcher ("Científico Titular del CSIC") at ISQCH.

Throughout his career, Dr. Iglesias has also built a solid scientific track record, with 62 publications in Journal Citation Reports (37 as corresponding author), 4 book chapters, with an h-index of 29 and 1190 citations since 2020. He has been recognized with three six-year research periods ("sexenios"), reflecting the continuity and quality of his research contributions, and he has been awarded the I3 certification.

Over the past decade, Dr. Iglesias' research has centered on developing new homogeneous catalysts and elucidating reaction mechanisms, with a strong emphasis on designing polydentate ligand systems. A major part of his work involves catalysts based on Ir, Rh, Co, and Mn, and more recently, catalytic systems for hydrogenation–dehydrogenation processes in Liquid Organic Hydrogen Carriers (LOHC). These results have been published in leading journals such as *Angew. Chem. Int. Ed.*, *Green Chem.*, *Chem. Sci.*, or *Inorg. Chem.*

In parallel, he collaborated with the company Ariño Duglass through a “Retos-Colaboración” project, developing photocatalysts capable of reducing atmospheric NO_x levels. This work also led to a technical assistance contract with Lurederra for the industrial development of photocatalytic glass surfaces.

Dr. Iglesias contributes extensively to evaluation and reviewing activities. He serves as a grant evaluator for the Agencia Estatal de Investigación, DAAD, NWO, and the Ibercaja and La Caixa Foundations, and acts as a frequent reviewer for journals such as *J. Am. Chem. Soc.*, *ACS Catal.*, *Inorg. Chem. Front.*, *J. Catal.*, *Org. Chem. Front.*, *Adv. Synth. Catal.*, *Organometallics*, *Chem. Asian J.*, *ChemCatChem*, and *Appl. Catal. A: Gen. or ACS Appl. Nano Mater.*

He has participated actively in teaching and supervision, guiding 4 PhD theses, 6 Master's theses, and 13 undergraduate or TAD projects, and mentoring numerous young researchers now working in academia and industry. Notable examples include Guillermo Lázaro, currently a project leader at Corporate Innovation BSH, and Amaia Iturmendi Urrutia, now a Research Chemist at Palobiofarma. Dr. Iglesias' commitment to the career development of young researchers has led him to deliver orientation seminars for Master's and PhD students (“Oportunidades de I+D+i en el sector público y en la industria química”).

Dr. Iglesias is also actively involved in scientific outreach. He has contributed articles to the “Moléculas a Reacción” blog, appeared on the Aragón TV program *En ruta con la ciencia*, collaborated on the science quiz game *Hi-Score Science*, and delivered talks at schools and Open Day events. In addition, he has supported the organization of scientific seminar series such as the “Ciclo de Conferencias del ISQCH” and the “Encuentros Sinérgicos del ISQCH.”

Part C. RELEVANT MERITS

C.1. Publications (* corresponding author)

- 1) S. García-Abellán*, A. Pérez-García, D. Barrena-Espés, M. A. Casado, J. Munarriz, V. Passarelli, **M. Iglesias***. Hemilability Modulation via Phosphane-Triazole Ligand Design: Impact on Catalytic Formic Acid Dehydrogenation. *Inorg. Chem.* **2025**, 64, 50, 24539–24552. DOI: [10.1021/acs.inorgchem.5c03962](https://doi.org/10.1021/acs.inorgchem.5c03962) (*ChemRxiv* [10.26434/chemrxiv-2025-hd3x7](https://doi.org/10.26434/chemrxiv-2025-hd3x7))
- 2) A. Luque-Gómez, D. Barrena-Espés, P. García-Orduña, A. Pérez-García, M. A. Casado, J. Munarriz*, **M. Iglesias***. A Homobimetallic Frustrated Lewis Pair Cobalt Catalyst for the Methanolysis of Hydrosilanes. *Angew. Chem. Int. Ed.* **2025**, 64, e202513522. HOT PAPER. [10.1002/anie.202513522](https://doi.org/10.1002/anie.202513522)
- 3) S. García-Abellán, A. Urriolabeitia, V. Polo*, **M. Iglesias***. In situ generated cobalt(i) catalyst for the efficient synthesis of novel pyridines: revisiting the mechanism of [2+2+2] cycloadditions. *Org. Chem. Front.* **2025**, 12, 2630–2642. [10.1039/D5QO00222B](https://doi.org/10.1039/D5QO00222B)
- 4) A. Luque-Gómez*, **M. Iglesias***. Earth-Abundant Metal Complexes as Catalysts for the Dehydrogenative Coupling of Hydrosilanes and Alcohols. *Eur. J. Org. Chem.* **2025**, 28, e202500215. *Invited contribution*. [10.1002/ejoc.202500215](https://doi.org/10.1002/ejoc.202500215)
- 5) **M. Iglesias***, F.J. Fernández-Alvarez*, L. A. Oro*, (2023). State of the Art in Rhodium- and Iridium-Catalyzed Hydrosilylation Reactions. In: Marciniak, B., Maciejewski, H. (eds) *Perspectives of Hydrosilylation Reactions. Topics in Organometallic Chemistry*, vol 72. Springer, Cham. [10.1007/3418_2023_100](https://doi.org/10.1007/3418_2023_100)
- 6) A. Luque-Gómez; P. García-Orduña; F. J. Lahoz; **M. Iglesias***. Synthesis and catalytic activity of well-defined Co(I) complexes based on NHC–phosphane pincer ligands. *Dalton Trans.* **2023**, 52, 12779–12788. [10.1039/D3DT00463E](https://doi.org/10.1039/D3DT00463E)
- 7) S. García-Abellán, D. Barrena-Espés, J. Munarriz, V. Passarelli, **M. Iglesias***. Cobalt-catalysed nucleophilic fluorination in organic carbonates. *Dalton Trans.* **2023**, 52, 4585–4594. [10.1039/D3DT00731F](https://doi.org/10.1039/D3DT00731F)
- 8) A. Gomez-España, J. L. Lopez-Morales, B. Español-Sánchez; P. García-Orduña, F. J. Lahoz, **M. Iglesias**, F. J. Fernández-Alvarez. Iridium-(κ^2 -NSi) catalyzed dehydrogenation of formic acid: effect of auxiliary ligands on the catalytic performance, *Dalton Trans.* **2023**, 52, 6722–6729. [10.1039/D3DT00744H](https://doi.org/10.1039/D3DT00744H)
- 9) R. Azpiroz, E. Carretero*, A. Cueva, A. González, **M. Iglesias***, J. J. Pérez-Torrente*. In-flow photocatalytic oxidation of NO on glasses coated with nanocolumnar porous TiO₂ thin films prepared by reactive sputtering, *Appl. Surf. Sci.* **2022**, 606, 154968. [10.1016/j.apsusc.2022.154968](https://doi.org/10.1016/j.apsusc.2022.154968)

- 10) P. Hermosilla, A. Urriolabeitia, **M. Iglesias**, V. Polo, M. A. Casado*. Efficient solventless dehydrogenation of formic acid by a CNC-based rhodium catalyst, *Inorg. Chem. Front.* **2022**, 9, 4538–4547. [10.1039/D2QI01056A](https://doi.org/10.1039/D2QI01056A)
- 11) A. Luque-Gómez, S. García-Abellán, J. Munarriz, V. Polo, V. Passarelli, M. Iglesias*, Impact of Green Cosolvents on the Catalytic Dehydrogenation of Formic Acid: The Case of Iridium Catalysts Bearing NHC-phosphane Ligands, *Inorg. Chem.* **2021**, 60, 20, 15497–15508. [10.1021/acs.inorgchem.1c02132](https://doi.org/10.1021/acs.inorgchem.1c02132)
- 12) **M. Iglesias***, L. A. Oro*, Iridium catalyzed Silylation, in Iridium Catalysts for Organic Reactions (L.A. Oro, C. Claver, eds.). Topics in Organometallic Chemistry, vol. 69, **2021** (Pgs. 227–270). ISBN: 978-3-030-69082-3. [10.1007/978-3-030-69083-0_74](https://doi.org/10.1007/978-3-030-69083-0_74)
- 13) A. Iturmendi, **M. Iglesias***, J. Munárriz, V. Polo, V. Passarelli, J. J. Pérez-Torrente, L. A. Oro*, A highly efficient Ir-catalyst for the solventless dehydrogenation of formic acid: the key role of an N-heterocyclic olefin. *Green Chem.* **2018**, 20, 4875–4879. [10.1039/C8GC02794C](https://doi.org/10.1039/C8GC02794C)
- 14) **M. Iglesias***, F. J. Fernández Alvarez*, L. A. Oro*. Non-classical hydrosilane mediated reductions promoted by transition metal complexes. *Coord. Chem. Rev.* 2019, 386, 240–266. [10.1016/j.ccr.2019.02.003](https://doi.org/10.1016/j.ccr.2019.02.003)
- 15) A. Iturmendi, L. Rubio-Pérez, J. J. Pérez-Torrente, **M. Iglesias***, L. A. Oro*, Impact of Protic Ligands in the Ir-Catalyzed Dehydrogenation of Formic Acid in Water. *Organometallics*, **2018**, 37, 3611–3618. [10.1021/acs.organomet.8b00289](https://doi.org/10.1021/acs.organomet.8b00289)
- 16) **M. Iglesias***, L. A. Oro*, A leap forward in iridium–NHC catalysis: new horizons and mechanistic insights. *Chem. Soc. Rev.* **2018**, 47, 2772–2808. [10.1039/C7CS00743D](https://doi.org/10.1039/C7CS00743D)
- 17) L. Rubio-Pérez, **M. Iglesias***, J. Munárriz, V. Polo, V. Passarelli, J. J. Pérez-Torrente, L.A. Oro*. A well-defined NHC–Ir(III) catalyst for the silylation of aromatic C–H bonds: substrate survey and mechanistic insights, *Chem. Sci.* **2017**, 8, 4811–4822. [10.1039/C6SC04899D](https://doi.org/10.1039/C6SC04899D)
- 18) E. Wächtler, L. A. Oro, **M. Iglesias***, B. Gerke, R. Pöttgen, R. Gericke, J. Wagler*, Synthesis and Oxidation of a Paddlewheel-shaped Rhodium/Antimony Complex Featuring Pyridine-2-thiolate Ligands. *Chem. Eur. J.* **2017**, 23, 3447–3454. [10.1002/chem.201605485](https://doi.org/10.1002/chem.201605485)
- 19) A. Iturmendi, **M. Iglesias***, J. Munárriz, V. Polo, J. J. Pérez-Torrente, L. A. Oro*, Efficient preparation of carbamates by Rh-catalysed oxidative carbonylation: unveiling the role of the oxidant. *Chem. Commun.* **2016**, 53, 404–407. [10.1039/C6CC09133D](https://doi.org/10.1039/C6CC09133D)
- 20) A. Iturmendi, P. J. Sanz, S. A. Popoola, A. A. Al-Saadi, **M. Iglesias***, L. A. Oro*, Dimethylphosphinate bridged Binuclear Rh(I) Catalysts for the Alkoxy carbonylation of Aromatic C–H bonds. *Dalton Trans.* **2016**, 45, 16955–16965. [10.1039/C6DT03010F](https://doi.org/10.1039/C6DT03010F)

C.2. Congresses

- 1) Title: Design of Iridium and Cobalt Catalysts Based on Polydentate Ligands.
Authors: M. Iglesias. Conference: XXXIX Reunión bienal de la RSEQ 2023; Dates 25/06/2023-29/06/2023 (Zaragoza, Spain). Institution: Real Sociedad Española de Química. Type of presentation: Oral.
- 2) Title: Catalyst Design and Reaction Mechanisms in Formic Acid Dehydrogenation.
Authors: M. Iglesias. Conference: XL GEQO; Dates 07/09/2022-09/09/2022 (Barcelona, Spain). Type of presentation: Oral.
- 3) Title: Designing novel catalysts for formic acid dehydrogenation.
Authors: M. Iglesias. Conference: ICCO 2022; Dates 26/08/2022-02/09/2022 (Rimini, Italy). Type of presentation: Oral communication.
- 4) Title: Understanding Formic Acid Dehydrogenation: Catalyst Design and Reaction Mechanisms.
Authors: M. Iglesias. Conference: XXXVIII RSEQ Symposium 2022; Dates: 27/06/2022-30/06/2022 (Granada, Spain); Institution: Real Sociedad Española de Química. Type of presentation: Oral.
- 5) Title: Harnessing outer-sphere interactions in homogeneous catalysis.
Authors: A. Iturmendi, L. Rubio-Pérez, J. Munárriz, J. J. Pérez-Torrente, V. Polo, L. A. Oro, M. Iglesias. Conference: 1st International Conference on Noncovalent Interactions - ICNI2019; Dates: 02/09/2019-06/09/2019; Institution: University of Lisbon (Lisbon, Portugal). Type of presentation: invited/keynote talk.
- 6) Title: Novel Homogeneous Ir-Catalysts based on NHC and NHO ligands.

Authors: A. Iturmendi, L. Rubio-Pérez, J. Munárriz, J. J. Pérez Torrente, V. Polo, L. A. Oro, M. Iglesias. Conference: XXXVII Reunión bienal de la Real Sociedad Española de Química; Dates: 26/05/2019-30/05/2019; Institution: Real Sociedad Española de Química (San Sebastián, Spain). Type of presentation: Oral communication. *Prize to the Best oral communication.*

7) Title: Novel Homogeneous Ir-Catalysts: Ligand design, Applications and Mechanisms. Authors: M. Iglesias. Conference: 7th EuCheMS Chemistry Congress; Dates: 26/08/2018-30/08/2018; Institution: Royal Society of Chemistry (Liverpool, UK). Type of presentation: Oral communication.

C.3. Research projects

1) Reference: PID2021-126212OB-I00 Title: Catalizadores basados en metales abundantes en la corteza terrestre para sistemas sostenibles de almacenamiento de hidrogeno. Role: PI (01/09/2022–31/08/2024); Amount: 175.450 €; Issuing Organization: MCIN/AEI/FEDER. Retos Investigación 2021 (type B project).

2) Reference: RTI2018-099136-A-I00 Title: Desarrollo de catalizadores de cobalto para el uso de ácido fórmico como material para el almacenamiento de hidrógeno. Role: PI (01/01/2019–30/09/2022); Amount: 78.400 €; Issuing Organization: MCIN/AEI/FEDER. Retos Investigación 2018 (type A project).

3) Reference: 2020801024 Title: Desarrollo de catalizadores para el almacenamiento reversible de hidrógeno. Role: PI (17/12/2020–16/12/2021); Amount: 5.000 €; Issuing Organization: CSIC.

4) Reference: UZCUD2018-CIE.01 Title: Desarrollo de nuevos catalizadores para la deshidrogenación de ácido fórmico. Role: PI (01/10/2018–30/09/2019); Amount: 2.600 €; Issuing Organization: Centro Universitario de la Defensa (Zaragoza).

5) Reference: RTC-2017-6504-5 Title: Innovación y desarrollo de vidrios antipolución con superficies selectivas de frecuencia-fotofrec. Role: research team (01/10/2018–31/12/2021); Amount: 476.495 €; Issuing Organization: MCIN/AEI/FEDER. PI: J. J. Pérez-Torrente. Retos Colaboración 2017.

6) Reference: CSD2009-00050 Title: Convenio con el centro superior de investigación científicas para el desarrollo del proyecto consolidar CSD2009-00050; Role: research team (21/01/2010–04/05/2017); Amount: 374.929 €; Issuing Organization: CSIC. PI: Luis A Oro Giral.

7) Reference: E42_23R Title: E42_23R: Catálisis Homogénea por Compuestos Organometálicos; Role: research team (01/01/2023–31/12/2025); Amount: 37.744 €; Issuing Organization: Gobierno de Aragón; PI: J. J. Pérez-Torrente.

8) Reference: E42_20R Title: E42_20R: Catálisis Homogénea por Compuestos Organometálicos; Role: research team (01/01/2020–31/12/2022); Amount: 28.192 €; Issuing Organization: Gobierno de Aragón; PI: J. J. Pérez-Torrente.

9) Reference: E42_17R Title: E42_17R: Catálisis Homogénea por Compuestos Organometálicos; Role: research team (01/01/2017–31/12/2019); Amount: 38.529 €; Issuing Organization: Gobierno de Aragón; PI: J. J. Pérez-Torrente.

10) Reference: E07 Title: E07: Catálisis Homogénea por Compuestos Organometálicos; Role: research team (01/01/2011–31/12/2016); Amount: 113.441 €; Issuing Organization: Gobierno de Aragón; PI: Luis A Oro Giral.

C.4. Contracts, technological or transfer merits.

1) Reference: 18820 Title: Novel rhodium and iridium complexes for homogeneous catalytic processes. Role: Research team (01/09/2013–01/09/2016); Amount: 367.674 €; Research agreement with King Fahd University of Petroleum & Minerals. PI: L. A. Oro

2) Title: “Contrato de asistencia técnica entre la Universidad de Zaragoza y Lurederra (fundación para el desarrollo tecnológico y social, Lurederra)”, Amount: 11.800 €; PI: J. J. Pérez-Torrente.