CURRICULUM VITAE ABREVIADO (CVA)

Ana Carmen Albéniz

Part A. PERSONAL INFORMATION

First name	Ana Carmen		
Family name	Albéniz		
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Open Researcher and Contributor ID (ORCID) (*)		0000-0002-4134-1333	

(*) Mandatory

A.1. Current position

Position	Full Professor		
Initial date	22/01/2007		
Institution	Universidad de Valladolid		
Department/Center	Instituto CINQUIMA/Dpto. Química Física y Química Inorgánica	Facultad de Ciencias	
Country	Spain	Teleph. number	983184621
Key words	Organometallic chemistry, catalysis, polymers, reaction mechanisms		

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

Period	Position/Institution/Country/Interruption cause
1991-2007	Associate Professor/Universidad de Valladolid/Spain
1989-1991	Fulbright Fellow/Yale University/USA

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licenciatura	Universidad de Zaragoza	1985
PhD	Universidad de Valladolid	1989

(Include all the necessary rows)

Part B. CV SUMMARY

Ana C. Albéniz graduated in chemistry at the Univ. of Zaragoza (1985). As a FPI fellow (MEC), she moved to the Univ. of Valladolid where she got her PhD degree in 1989 (Premio Extraordinario de Doctorado) under the supervision of Prof. P. Espinet. Then, she moved to Yale University where she worked as a Fulbright fellow in the group of Prof. R. Crabtree (1989-91). Her postdoctoral work at Yale dealt with the study of dihydrogen complexes and agostic C-H bonds to iridium. She returned to Valladolid in 1991 with a reincorporation fellowship (MEC). At the end of that year she got a position as Prof. Titular (associate professor) at the University of Valladolid (UVa). In 2007, she was promoted to Catedrática de Universidad (Full Professor). She is currently doing her research at the Institute CINQUIMA at the UVa. She is leading the Catalysis and Polymers group and coordinates the Unidad de Investigación Consolidada UIC176, a research unit recognized by the JCyL.

Her research work has dealt with the experimental study of the fundamental reactions involved in Pd-catalyzed reactions applied to organic synthesis. She started her PhD work with the study of the insertion of alkenes into Pd-aryl bonds (JACS 1990; Organomet. 1991) and moved as a young professor to the study of the processes that followed alkene insertion, such as Pd migration (Organomet. 1996), β-H, β-X elimination reactions (Organomet. 1996) and skeletal rearrangements via intramolecular alkene insertion and β-C elimination (JACS 1996). These works provided a solid experimental evidence to support mechanistic proposals in Pd-catalyzed processes. The fate of the Pd-hydrido species formed after β-H elimination was also studied and led to the observation of unprecedented hydrido exchange between Pd centers (Organomet, 1997 & 2018) and the reaction of Pd-H species with radical traps,

important to correctly interpret the mechanistic tests with these compounds when hydrido complexes are involved (JACS 2002). The experience gained with perhaloaryl groups, often used as models in the former studies, led to the development of the challenging Heck reaction of fluoroaryl halides (JACS 2001). Her work on fundamental reactions led to the discovery of the insertion of carbenes into Pd-aryl bonds (ACIE 2002, CEJ 2005, Organomet. 2012). The insertion polymerization of alkenes was also a field of interest and the study of the polymerization of acrylates with Pd complexes led to interesting findings on the radical cleavage of Pd-C bonds (Organomet. 2002 & 2003). The vinylic addition (VA) polymerization of norbornene and its derivatives with Pd and Ni complexes led to new strategies for the challenging functionalization of these polymers (Macromol. 2010) and new polynorbornene backbones (Chem. Sci. 2022). In the last years her interest has moved to the development of sustainable synthetic processes following two approaches: a) The use of arenes as reagents in C-C coupling reactions and the development of cooperating ligands to assist the C-H cleavage (JACS 2018, OCF 2021, ASC 2021, ACS Catal. 2022, Chem. Sci. 2023); b) The support of catalysts and reagents on robust VA-polynorbornenes to enable their recovery and reuse (ASC 2012, CCC2 016, CEJ 2019).
She has authored about 80 research papers published in international journals, about 80% in Q1 including high impact multidisciplinary chemistry publications. She is also the author of review articles and book chapters such as those in the "Encyclopedia of Inorganic Chemistry" ("Pd: Inorg. & Coord. Chemistry", 1st and 2nd ed) and Comprehensive Organometallic Chemistry III ("Pd-C π-Bonded Complexes", 2006). She is also inventor of 4 patents (2 PCT, 2 ES). She has been the PI of several national and regional grants during the last ten years.
14 doctoral Thesis have been defended under her supervision and 2 more PhD students are currently working in her lab. Most of her former students are working in R&D in the pharmaceutical industry or in public institutions.
She has been invited as a speaker in national and international conferences and in research centers. She has been a member of the organizing and scientific committees of conferences (GEQO meetings, Convenor in 6th EUCHEMS Chemistry Congress, XXIV EUCOMC).
She is currently Chair of the Editorial Board of Eur. J. Inorg. Chem. (Wiley-VCH) and member of the International Advisory Board of Organometallics (ACS). She is the President of the Grupo Especializado de Química Organometálica of the RSEQ (GEQO; 2018-on) and she has served as member of the executive board of the RSEQ (2006-12). She has been recognized as Chemistry Europe Fellow (2020) and has been awarded the Premio a la Excelencia Investigadora de la RSEQ (2023).
She has long experience in scientific evaluation and management. She has served as Chemistry Coordinator of the Spanish National Agency of Evaluation and Prospective (ANEP, 2012-15); she was formerly part of the team of the Chemistry area of the ANEP (Adjunta, 2008-11).

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications. *Selected in the last years:*

M. Álvarez, F. Villalba, M. Casciotti, F. Molina, G. Sciortino, A. Lledós, A: C. Albéniz, T. R. Belderrain, P. J. Pérez
"A copper-masked monosubstituted carbene as a general transmetalating agent toward stable carbene complexes"
Chem **2024**, *10*, 1–17. DOI: 10.1016/j.chempr.2024.03.009

S. Fernández-Moyano, V. Salamanca, A. C. Albéniz
"Palladium mono-*N*-protected amino acid complexes: experimental validation of the ligand cooperation model in C–H activation"
Chem Sci. **2023**, *14,* 6688-6694. DOI: 10.1039/d3sc02076b.

C. Pinilla, V. Salamanca, A. Lledós, A. C. Albéniz
"Palladium-Catalyzed *Ortho* C–H Arylation of Unprotected Anilines: Chemo- and Regioselectivity Enabled by the Cooperating Ligand [2,2'-bipyridin]-6(1*H*)-one"

ACS Catal. **2022**,*12*, 14527-14532. DOI: 10.1021/acscatal.2c05206

I. Pérez-Ortega, A. C. Albéniz
"A Different Polynorbornene Backbone by Combination of Two Polymer Growth Pathways: Vinylic Addition and Ring Opening via β-C Elimination"
Chem. Sci. **2022**, *13*, 1823-1828. DOI: 10.1039/D1SC07028B

I. Pérez-Ortega, A. C. Albéniz
"Highly Efficient Vinylic Addition Polymerization of 5-Vinyl-2-Norbornene using Benzylic Palladium Complexes as Precatalysts"
Polymer Chem. **2021**, *12*, 5963-5969. DOI: 10.1039/D1PY01165K. Hot article.

F. Villalba, A. C. Albéniz
"Non-Chelate-Assisted Palladium-Catalyzed Aerobic Oxidative Heck Reaction of Fluorobenzenes and Other Arenes: When Does the C H Activation Need Help?"
Adv. Synth. Catal. **2021**, *363*, 4795-4804. DOI: 10.1002/adsc.202100677

V. Salamanca, A. C. Albéniz
"Faster Palladium-Catalyzed Arylation of Simple Arenes in the presence of a methylketone: Beneficial effect of an a priori interfering solvent in C-H activation"
Org, Chem. Front. **2021**, *8*, 1941-1951. DOI*:* 10.1039/D1QO00236H

J. A. Molina de la Torre, I. Pérez-Ortega, A. Beltrán, M. R. Rodríguez, M. M. Díaz-Requejo, P. J. Pérez, A. C. Albéniz
"Trispyrazolylborate Ligands Supported on Vinylic Addition Polynorbornenes and their Copper Derivatives as Recyclable Catalysts"
Chem. Eur. J. **2019**, *25,* 556-563. DOI: 10.1002/chem.201803852

V. Salamanca, A. Toledo, A. C. Albéniz
"[2, 2'-Bipyridin]-6(1H)-one, a Truly Cooperating Ligand in the Palladium-Mediated C-H Activation Step: Experimental Evidence in the Direct C-3 Arylation of Pyridine"
J. Am. Chem. Soc. **2018**, *140,* 17851-17856. DOI: 10.1021/jacs.8b10680.

A. Toledo, I. Funes-Ardoiz, F. Maseras, A. C. Albéniz
"Palladium-Catalyzed Aerobic Homocoupling of Alkynes: Full Mechanistic Characterization of a More Complex Oxidase-Type Behavior"
ACS Catal. **2018**, *8,* 7495-7506. DOI: 10.1021/acscatal.8b01540

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

A. C. Albéniz. "Palladium catalyzed C–H arylation of simple arenes via metal- ligand cooperation and synergistic metal catalysis"
Keynote Lecture
International Symposium on Homogeneous Catalysis XXIII (ISHC 2024), Trieste (Italy), July 21-26, **2024**.

A. C. Albéniz. "Palladium Catalyzed C-H Functionalization of Arenes with Cooperating Pyridone Ligands"
Invited Lecture
2023 Barluenga Conference. Oviedo, November 9-10, **2023**.

A. C. Albéniz. "C-H and C-C bond activation by group 10 metal complexes"
Invited Lecture
XXXIX Reunión Bienal de la Real Sociedad Española de Química. Zaragoza, June 25-29, **2023**.

A. C. Albéniz. "Palladium catalyzed coupling reactions of arenes via metal ligand cooperation"
Keynote Lecture
SISOC XIII-Spanish-Italian Symposium on Organic Chemistry. Tarragona, September 4-6, **2022**.

A. C. Albéniz. "Insights into palladium catalyzed cross coupling reactions of simple arenes"
Invited Speaker
Chemistry Europe Fellows Day. Virtual event. Real Sociedad Española de Química. Sept. 30th, **2020**

A. C. Albéniz. "Transmetalation of hydrocarbyl groups between group 11 and other transition metals: How similar are Cu, Ag and Au?"
Invited Speaker
III International Workshop on Chemistry of Group 11 Elements. Caparica (Portugal). January 30-31, **2020**.

A. C. Albéniz. ”Faster Palladium-Catalyzed Coupling Reactions of Arenes: Cooperating Ligands and co-Solvents”
Invited Speaker
UK-SPAIN Organometallic Chemistry Symposium (USOCS19). Alcalá, September, 17-19, **2019**.

V. Salamanca, A. Toledo, A. C. Albéniz. ”Assisted C-H cleavage in the Pd-catalyzed direct arylation reaction of arenes with the cooperating ligand [2,2′- bipyridin]-6(1H)one”
Oral Communication
23rd European Conference on Organometallic Chemistry (EUCOMC XXIII). Helsinki, June 16-20, **2019**.

C.3. Research projects

Grant reference no.: PID2022-142100NB-I00
Title: Desarrollo de catalizadores basados en la cooperación metal-ligando para la funcionalización C-H y para el uso de líquidos orgánicos en el almacenamiento y liberación de H_2. PI: Ana Carmen Albéniz /Juan Ángel Casares
Funding body: MICINN/AEI. Time span: 01/09/2023- 31/8/2026. Budget: 175.000 €

Grant reference no.: C17.I01.P01.S21
Title: Tecnologías, materiales y procesos para producción a pequeña escala de portadores de hidrógeno renovable (metano y amoniaco) para un aprovechamiento distribuido (H2MetAmo).
PI (UVa): Juan Ángel Casares /Ana C. Albéniz.
Funding body: EU/MICIN/JCyL. Plan de Recuperación, Transformación y Resiliencia, Planes Complementarios con las CCAA. Researcher (catalyst design). Time span: 2022-2025. Participants: UBU (coord.) USAL, UVa, ULE, Cidaut, Cartif. Budget: 2.698.246 €.

Grant reference no.: VA224P20
Title: Desarrollo de materiales y metodología para una catálisis sostenible y de sistemas con propiedades físicas mejoradas. PI: Ana Carmen Albéniz
Funding body: JCyL-FEDER. Time span: 06/11/2020- 6/11/2023. Budget: 264000 €

Grant reference no.: PID2019-111406GB-I00
Title: Busqueda de reacciones de acoplamiento cruzado catalizadas por metales mas eficientes y sostenibles. PI: Ana Carmen Albéniz / Juan Ángel Casares
Funding body: MICINN/AEI. Time span: 01/06/2020 - 31/05/2023. Budget: 169.400€

Grant reference no.: COST ACTION CA-15106.
Title: C-H Activation in Organic Synthesis (CHAOS). PI: Michael Schnürch (140 members from 30 countries)
Funding body: European Union. Time span: 01/03/2016- 30/4/2020

Grant reference no.: CTQ2016-80913-P
Title: Búsqueda de Soluciones para Reacciones de Acoplamiento Difíciles Catalizadas por Paladio o por Sistemas Bimetálicos. PI: Ana Carmen Albéniz Jiménez/Juan Ángel Casares González
Funding body: D. G. I. MINECO. Time span: 30/12/2016- 29/12/2019. Budget: 199.650 €

C.4. Contracts, technological or transfer merits

A. C. Albéniz, J. A. Molina de la Torre.
”Vinylic Addition Polinorbornenes with Trispyrazolylborate groups”
PATENT NO.: **WO2018/150061 A1**. *APPL. NO.:* P201730176.
PRIORITY COUNTRY: Spain. *PRIORITY DATE:* 14/2/**2017**. Universidad de Valladolid

A. C. Albéniz, S. Martínez-Arranz, P. Espinet.
”Polinorbornenos vinílicos estannilados, procedimiento para su obtención y para su aplicación como reactivos inmovilizados”
PATENT NO.: **WO2012160228 (A1)/ ES20110030827**. *APPL. NO.:* P201130827.
PRIORITY COUNTRY: Spain *PRIORITY DATE:* 23/5/**2011**. Universidad de Valladolid