

CURRICULUM VITAE - Joaquín García Álvarez – Septiembre 2012

Datos personales

Nombre: Joaquín García Álvarez
Nacionalidad: Española
Fecha de nacimiento: 12 de Marzo de 1978
NIE: 71.637.874-G

Situación profesional actual

Institución: Universidad de Oviedo
Facultad: Facultad de Química
Departamento: Departamento de Química Orgánica e Inorgánica
Dirección postal: Despacho 205.1; Departamento de Química Orgánica e Inorgánica; Facultad de Química. Universidad de Oviedo; E-33071 Oviedo, España
E-mail: garciajoaquin@uniovi.es
Tel: 985 10 29 85 (Despacho); 985 10 50 04 (Laboratorio)
Fax: 985 10 34 46
Categoría profesional: Investigador Post-Doctoral Ramón y Cajal (desde enero 2012)

Líneas de investigación

Compuestos Organometálicos, Ligandos Iminofosforano, Catálisis Homogénea, Líquidos Iónicos, Agua.

Formación Académica

2001 Licenciado en Ciencias Químicas por la Universidad de Oviedo
2005 Doctor en Ciencias Químicas por la Universidad de Oviedo
Idiomas: Inglés (excelente, oral y escrito)

Actividades anteriores de carácter científico profesional

2000 Becario de colaboración en el grupo del Catedrático José Gimeno en el Departamento de Química Orgánica e Inorgánica de la Universidad de Oviedo. Duración: 9 meses.
2001-2004 Becario predoctoral (financiado por el proyecto PR-01-GE-6 del gobierno del Principado de Asturias). Duración: 3 años.
2005-2007 Contratado post-doctoral en el grupo del Prof. Robert. E. Mulvey, University of Strathclyde, Glasgow, Reino Unido (financiado por la fundación EPSRC del Reino Unido; Nº de concesión de beca: GR/T27228/01); 30 meses.
Noviembre 2007 Investigador posdoctoral del programa regional "Clarín" para la reincorporación de investigadores posdoctorales (2007-2009) a centros de I+D del Principado de Asturias subvencionado por el Gobierno del Principado de Asturias.
Mayo 2009 Investigador posdoctoral del programa nacional Juan de la Cierva.
Enero 2012 Investigador posdoctoral del programa nacional Ramón y Cajal.

Lista de publicaciones

- 1.-"NEUTRAL AND CATIONIC (η^6 -ARENE)-RUTHENIUM(II) COMPLEXES CONTAINING THE IMINOPHOSPHORANE-PHOSPHINE LIGAND $\text{Ph}_2\text{PCH}_2\text{P}(=\text{N}-P-\text{C}_5\text{F}_4\text{N})\text{Ph}_2$: INFLUENCE OF THE ARENE RING IN CATALYTIC TRANSFER HYDROGENATION OF CYCLOHEXANONE ". V. Cadierno, P. Crochet, J. García-Álvarez, S.-E. García-Garrido, J. Gimeno. *J. Organomet. Chem.*, **2002**, 663, 32-39.
- 2.-"RUTHENIUM(II) AND RUTHENIUM(IV) COMPLEXES CONTAINING κ^1 -P-, κ^2 -P,O-, κ^3 -P,N,O- IMINOPHOSPHORANE-PHOSPHINE LIGANDS $\text{Ph}_2\text{PCH}_2\text{P}\{\text{=NP}(=\text{O})(\text{OR})_2\}\text{Ph}_2$ (R = Et, Ph): SYNTHESIS, REACTIVITY, THEORETICAL STUDIES AND CATALYTIC ACTIVITY IN TRANSFER HYDROGENATION OF CYCLOHEXANONE". V. Cadierno, P. Crochet, J. Díez, J. García-Álvarez, S.-E. García-Garrido, J. Gimeno, S. García-Granda, M.-A. Rodríguez, *Inorg. Chem.*, **2003**, 42, 3293-3307.
- 3.-"SYNTHESIS, REACTIVITY AND CATALYTIC ACTIVITY IN TRANSFER HYDROGENATION OF KETONES OF RUTHENIUM(II) AND RUTHENIUM(IV) COMPLEXES CONTAINING THE NOVEL N-THIOPHOSPHORILATED IMINOPHOSPHORANE-PHOSPHINE LIGANDS $\text{Ph}_2\text{PCH}_2\text{P}\{\text{=NP}(=\text{S})(\text{OR})_2\}\text{Ph}_2$ (R = Et, Ph)". V. Cadierno, P. Crochet, J. Díez, J. García-Álvarez, S.-E. García-Garrido, J. Gimeno, S. García-Granda, M.-A. Rodríguez, *Dalton Trans.*, **2003**, 3240- 3249.
- 4.-"A NEW CLASS OF TETHERED-ARENE RUTHENIUM(II) COMPLEXES WITH PENDANT P AND C DONOR ATOMS: SYNTHESIS OF $\eta^6:\eta^1:\eta^1$ PHOSPHONIO-AZABUTADIENYL RUTHENABICYCLES VIA ALLENYLIDENE INTERMEDIATES" V. Cadierno, J. Díez, J. García-Álvarez, J. Gimeno, *Chem. Commun*, **2004**, 1820-1821.
- 5.-"BIS(IMINOPHOSPHORANO)METHANE DERIVATIVES AS PRECURSORS OF UNUSUAL RUTHENIUM-CARBENE COMPLEXES: A SYNTHETIC AND DFT STUDY" V. Cadierno, J. Díez, J. García-Álvarez, J. Gimeno, M.-J. Calhorda, L.-F. Veiros, *Organometallics*, **2004**, 23, 2421- 2433.
- 6.-"BASE-ASSISTED CYCLOMETALATION AND PHOSPHORUS-CARBON BOND CLEAVAGE IN (ARENE)RUTHENIUM(II) COMPLEXES CONTAINING FUNCTIONALIZED IMINOPHOSPHORANE-PHOSPHINE LIGANDS $\text{Ph}_2\text{PCH}_2\text{P}\{\text{=NP}(=\text{X})(\text{OR})_2\}\text{Ph}_2$ (X = O, S; R = Et, Ph)" V. Cadierno, J. Díez, J. García-Álvarez, J. Gimeno, *Organometallics*, **2004**, 23, 3425-3436.
- 7.-"NOVEL (η^6 -ARENE)-RUTHENIUM(II) COMPLEXES CONTAINING BIS(IMINOPHOSPHORANO) METHANIDE AND METHANDIIDE LIGANDS" V. Cadierno, J. Díez, J. García-Álvarez, J. Gimeno, *J. Organomet. Chem.*, **2005**, 690, 2087- 2096.
- 8.-"IMINOPHOSPHORANE-BASED NUCLEOPHILIC RUTHENIUM(II) CARBENE COMPLEX: UNUSUAL C-C COUPLING AND C-H ACTIVATION PROMOTED BY THE ADDITION OF ALKYNES TO THE Ru=C BOND" V. Cadierno, J. Díez, J. García-Álvarez, J. Gimeno, *Organometallics*, **2005**, 24, 2801-2810.
- 9.-"REACTION OF ISOCYANIDES WITH IMINOPHOSPHORANE-BASED CARBENE LIGANDS: SYNTHESIS OF UNPRECEDENTED KETENIMINE-RUTHENIUM COMPLEXES" V. Cadierno, J. García-Álvarez, J. Gimeno, J. Rubio-García, *J. Organomet. Chem.*, **2005**, 690, 5856-5862.
- 10.-"NEW REACTIVITY AND STRUCTURAL INSIGHTS OF ALKALI-METAL-MEDIATED ALUMINATION IN DIRECTED ORTHO-ALUMINATION OF A TERTIARY AROMATIC AMIDE" J. García-Álvarez, D. V. Graham., A. R. Kennedy, R. E. Mulvey, S. Weatherstone, *Chem. Commun.*, **2006**, 3208-3210.

- 11.-"SYNTHESIS AND REACTIVITY STUDIES OF PALLADIUM(II) COMPLEXES CONTAINING THE N-PHOSPHORILATED IMINOPHOSPHORANE-PHOSPHINE LIGANDS $\text{Ph}_2\text{PCH}_2\text{P}(\text{=O})(\text{OR})_2\text{Ph}_2$ (R = Et, Ph): APPLICATION TO THE CATALYTIC SYNTHESIS OF 2,3-DIMETHYLFURAN" V. Cadierno, J. García-Álvarez, J. Gimeno, N. Nebra, J. Rubio-García, *Dalton Trans.*, **2006**, 5593-5604.
- 12.-"ALKALI-METAL-MEDIATED MANGANATION: A METHOD FOR DIRECTLY ATTACHING MANGANESE(II) CENTERS TO AROMATIC FRAMEWORKS" J. García-Álvarez, A. R. Kennedy, J. Klett, R. E. Mulvey, *Angew. Chem. Int. Ed.*, **2007**, *46*, 1105-1108.
- 13.-"LEWIS BASE STABILIZED LITHIUM TMP-ALUMINATES: AN UNEXPECTED FRAGMENTATION AND CAPTURE REACTION INVOLVING CYCLIC ETHER 1,4-DIOXANE" J. García-Álvarez, E. Hevia, A. R. Kennedy, J. Klett, R. E. Mulvey, *Chem. Commun.*, **2007**, 2402-2404.
- 14.-"ISOLATION AND STRUCTURAL ELUCIDATION OF A KEY ALUMINOAROMATIC INTERMEDIATE AND EVIDENCE FOR DISMUTATION PHENOMENA IN TMP-ALUMINATION CHEMISTRY." B. Conway, E. Hevia, J. García-Álvarez, D. V. Graham, A. R. Kennedy, R. E. Mulvey, *Chem. Commun.*, **2007**, 5241-5243.
- 15.-"SILVER(I) COMPLEXES OF N-THIOPHOSPHORYLATED BIS(IMINOPHOSPHORANE) LIGANDS: FROM MONOMERS TO POLYMERS" V. Cadierno, J. Díez, J. García-Álvarez, J. Gimeno, *Dalton Trans.*, **2007**, 2760-2769.
- 16.-"TRANSAMINATION CHEMISTRY OF SODIUM TMP-ZINCATE: SYNTHESIS AND CRYSTAL STRUCTURE OF A CHIRAL AMIDOZINCATE." D. R. Armstrong, W. Clegg, S. H. Dale, J. García-Álvarez, R. W. Harrington, E. Hevia, G. W. Honeyman, A. R. Kennedy, R. E. Mulvey, C. T. O'Hara, *Chem. Commun.*, **2008**, 187-189.
- 17.-"SYNTHESIS AND CHARACTERISATION OF NEW BIMETALLIC ALKALI METAL-MAGNESIUM MIXED DIISOPROPYLAMIDE-ACETYLIDES: STRUCTURAL VARIATIONS IN BIMETALLIC LITHIUM- AND SODIUM-HETEROLEPTIC MAGNESIATES", J. García-Álvarez, D. V. Graham, E. Hevia, A. R. Kennedy, R. E. Mulvey, *Dalton Trans.*, **2008**, 1481-1487
- 18.-" η^6 -ARENE)-RUTHENIUM(II) COMPLEXES CONTAINING METHANIDE AND METHANIDE ANIONS OF $\text{Ph}_2\text{P}(\text{=S})\text{CH}_2\text{P}(\text{=NR})\text{Ph}_2$: UNPRECEDENTED INSERTION OF ISOCYANIDE INTO A RUTHENIUM-CARBENE BOND" V. Cadierno, J. Díez, J. García-Álvarez, J. Gimeno, *Organometallics*, **2008**, *27*, 1809-1822.
- 19.-"SYNTHESIS, STRUCTURAL AUTHENTICATION, AND STRUCTURALLY DEFINED METALLATION REACTIONS OF LITHIUM AND SODIUM DA-ZINCATES (DA = DIISOPROPYLAMIDE) WITH PHENYLACETYLENE" W. Clegg, J. García-Álvarez, P. García-Álvarez, D. V. Graham, R. W. Harrington, E. Hevia, A. R. Kennedy, R. E. Mulvey, L. Russo, *Organometallics*, **2008**, *27*, 2654-2663.
- 20.-"NOVEL RUTHENIUM(II) COMPLEXES CONTAINING THE N-PHOSPHORYLATED IMINOPHOSPHORANE-PHOSPHINE LIGAND $\text{Ph}_2\text{PCH}_2\text{P}(\text{=O})(\text{OEt})_2$: A NEW COORDINATION MODE OF ITS METHANIDE ANION" V. Cadierno, J. Díez, J. García-Álvarez, J. Gimeno, J. Rubio-García, *Dalton Trans.*, **2008**, 5737-5748
- 21.-"SYNTHETIC AND STRUCTURAL INSIGHTS INTO THE ZINCATION OF TOLUENE: DIRECT SYNERGIC RING METALATION VS INDIRECT NONSYNERGIC LATERAL METALATIONS" D. Armstrong, J. García-Álvarez, D. V. Graham, G. W. Honeyman, E. Hevia, A. R. Kennedy, R. E. Mulvey, *Chem. Eur. J.* **2009**, *15*, 3800-3807.

- 22.-"CONTACTED ION-PAIR LITHIUM ALKYLAMIDOALUMINATES: INTRAMOLECULAR ALUMINATION (Al-H) EXCHANGE) TRAPS FOR TMEDA AND PMDETA " B. Conway, J. García-Álvarez, E. Hevia, A. R. Kennedy, R. E. Mulvey, S. D. Robertson, *Organometallics*, **2009**, *28*, 6462-6468.
- 23.-"ACCESS TO THE FIRST (IMINOPHOSPHORANYL)(SELENOPHOSPHORANYL)METHANE LIGAND $\text{Ph}_2\text{P}(=\text{Se})\text{CH}_2\text{P}(=\text{NR})\text{Ph}_2$: COORDINATION OF THEIR METHANIDE AND METHANDIIDE ANIONS TO RUTHENIUM" V. Cadierno, J. Díez, J. García Álvarez, J. Gimeno, *Dalton Trans.*, **2010**, *39*, 941-956.
- 24.-"STRUCTURAL BASIS FOR REGIOISOMERIZATION IN THE ALKALI-METAL-MEDIATED ZINCATION (AMMZN) OF TRIFLUOROMETHYL BENZENE BY ISOLATION OF KINETIC AND THERMODYNAMIC INTERMEDIATES" D. Armstrong, V. L. Blair, W. Clegg, S. H. Dale, J. García-Álvarez, G. W. Honeyman, E. Hevia, R. E. Mulvey, L. Russo, *J. Am. Chem. Soc.*, **2010**, *132*, 9480-9487.
- 25.-"STRUCTURALLY STIMULATED DEPROTONATION/ALUMINATION OF THE TMP ANION" B. Conway, A. R. Kennedy, R. E. Mulvey, S. D. Robertson, J. García-Álvarez, *Angew. Chem. Int. Ed.*, **2010**, *49*, 3182-3184.
- 26.-"HIGHLY EFFICIENT COPPER(I) CATALYST FOR 1,3-DIPOLAR CYCLOADDITION OF AZIDES WITH TERMINAL AND 1-iodoalkynes in water: regioselective synthesis of 1,4-disubstituted and 1,4,5-trisubstituted 1,2,3-triazoles" J. García Álvarez, J. Díez, J. Gimeno, *Green Chem.*, **2010**, *12*, 2127-2130.
- 27.-"REDOX ISOMERISATION OF ALLYLIC ALCOHOLS INTO CARBONYL COMPOUNDS CATALYZED BY $[\text{Ru}(\eta^3\text{-C}_{10}\text{H}_{16})\text{Cl}(\kappa^2\text{-O, O-CH}_3\text{CO}_2)]$ IN WATER AND IONIC LIQUIDS: EFFICIENT TRANSFORMATIONS AND RECYCLABILITY IN GREEN SOLVENTS" J. García Álvarez, J. Gimeno, F. J. Suárez, *Organometallics*, **2011**, *30*, 2893-2896.
- 28.- "NOVEL RHENIUM(I) CATALYSTS FOR THE ISOMERIZATION OF PROPARGYLIC ALCOHOLS INTO α,β -UNSATURATED CARBONYL COMPOUNDS: AN UNPRECEDENTED RECYCLABLE CATALYTIC SYSTEM IN IONIC LIQUIDS" J. García-Álvarez, J. Díez, J. Gimeno, C. M. Seifried, *Chem. Commun.*, **2011**, *47*, 6470-6472.
- 29.- "MICROWAVE-ASSISTED MEYER-SCHUSTER REARRANGEMENT OF PROPARGYLIC ALCOHOLS CATALYZED BY THEOXOVANADATE COMPLEX $[\text{V}(\text{O})\text{Cl}(\text{OEt})_2]$ " A. Antiñolo, F. Carrillo-Hermosilla, V. Cadierno, J. García-Álvarez, A. Otero, *ChemCatChem*, **2012**, *4*, 123-128.
- 30.- "METAL-CATALYZED ISOMERIZATION OF ALLYLIC AND PROPARGYLIC ALCOHOLS IN AQUEOUS MEDIA." J. García-Álvarez, S. E. García-Garrido, P. Crochet, V. Cadierno, *Curr. Top. Catal.*, **2012**, in press.
- 31.- "IMINOPHOSPHORANE-COPPER(I) COMPLEXES AS HIGHLY EFFICIENT CATALYSTS FOR 1,3-DIPOLAR CYCLOADDITION OF AZIDES WITH TERMINAL AND 1-iodoalkynes in water: ONE-POT MULTI-COMPONENT REACTION FROM ALKYNES AND IN SITU GENERATED AZIDES." Joaquin García-Álvarez, Josefina Díez, Jose Gimeno, Francisco J. Suárez, Cristian Vincent, in press.
- 32.- "Pd(II)-CATALYZED CYCLOISOMERIZATION OF γ -ALKYNOIC ACIDS AND ONE-POT TANDEM CYCLOISOMERIZATION/CuAAC REACTIONS IN WATER." J. García-Álvarez, J. Díez, C. Vidal, *Green. Chem.*, **2012**, in press.

Capítulos de Libros

- 1.- "RUTHENIUM: PROPERTIES, PRODUCTION AND APPLICATIONS" V. Cadierno, J. García-Álvarez, Nova Science Publishers, INC, **2011**.
- 2.- "METAL-CATALYZED REACTIONS IN WATER" V. Cadierno, J. García-Álvarez, S. E. García-Garrido, P. (Dixneuf, V. Cadierno, Eds), Wiley-VCH Verlag GmbH & Co. KgaA, **2012**.
- 3.- "NANOCATALYSIS" V. Cadierno, J. García-Álvarez, S. E. García-Garrido, P. (V. Polshettiwar, T. Asefa, Eds), Wiley-Blackwell, John Wiley&Sons, Inc., **2012**.

Conferencias impartidas:

- "METAL-CATALYZED ISOMERISATION OF PROPARGYLIC ALCOHOLS AND [3+2] AZIDE-ALKYNE CYCLOADDITION (CLICK CHEMISTRY) IN ENVIRONMENTALLY FRIENDLY SOLVENTS (WATER AND IONIC LIQUIDS)" impartida dentro del ciclo de conferencias "Inorganic Colloquia" organizado por el Department of Pure and Applied Chemistry de la Universidad de Strathclyde (26/01/2011), Glasgow, Reino Unido.

Presentaciones orales en Congresos nacionales e internacionales

- 1.- "COMPLEJOS RUTENIO(II)-ARENO CONTENIENDO ANIONES METANURO Y METANDIURO DEL LIGANDO $\text{Ph}_2\text{PCH}_2\text{P}(=\text{NR})\text{Ph}_2$: INSERCIÓN DE ISOCIANUROS EN EL ENLACE $\text{Ru}=\text{C}$ " J. García-Álvarez, V. Cadierno, J. Díez, J. Gimeno, impartida en la I Reunión Grupo Orfeo Consolider-Ingenio celebrada del 1 al 3 de julio de 2008 en Ciudad Real (España).
- 2.-"REARRANGEMENTS OF PROPARGYLIC ALCOHOLS INTO α,β -UNSATURATED CARBONYL COMPOUNDS CATALYZED BY IMINOPHOSPHORANE Re(I) COMPLEXES" J. García-Álvarez, J. Díez, J. Gimeno, C. M. Seifried impartida en la III Reunión Grupo Orfeo Consolider-Ingenio celebrada del 5 al 7 de julio de 2010 en Oviedo (España).
- 3.-"HIGHLY EFFICIENT COPPER(I) CATALYST FOR 1,3-DIPOLAR CYCLOADDITION OF AZIDES WITH TERMINAL AND 1-iodoalkynes IN WATER: REGIOSELECTIVE SYNTHESIS OF 1,4-DISUBSTITUTED AND 1,4,5-TRISUBSTITUTED 1,2,3-TRIAZOLES" J. García-Álvarez, J. Díez, J. Gimeno, impartida en el 241 National Meeting de la American Chemistry Society, celebrado en marzo de 2011 en Anaheim, California (Estados Unidos) Division of Inorganic Chemistry (Paper ID 11739) page 596.
- 4.-"CICLOISOMERIZACIÓN DE ÁCIDOS γ -ALQUINOICOS CATALIZADA POR COMPLEJOS IMINOFOSFORANO-PALADIO(II) EN MEDIO ACUOSO." Joaquín García Álvarez, Josefina Díez, José Gimeno, Christian Vidal impartida en la "XXX REUNIÓN DEL GRUPO ESPECIALIZADO EN QUÍMICAORGANOMETÁLICA", celebrada en la Universitat Jaume I De Castellón (España), del 12 al 14 de junio de 2012.
- 5.-"Pd(II)-CATALYZED CYCLOISOMERIZATION OF ALKYNIC ACIDS IN WATER. NEW ONE-POT TANDEM CYCLOISOMERIZATION/CLICK CHEMISTRY REACTIONS." impartida en la V Reunión Grupo Orfeo Consolider-Ingenio celebrada del 2 al 4 de julio de 2012 en Jaca (Aragón, España).
- 6.-"Pd(II)-CATALYZED CYCLOISOMERIZATION OF ALKYNIC ACIDS IN WATER. NEW ONE-POT TANDEM CYCLOISOMERIZATION/CLICK CHEMISTRY REACTIONS." impartida en el 244th National Meeting de la

American Chemistry Society, celebrado en agosto de 2012 en Philadelphia, Pensilvania (Estados Unidos)
Division of Environmental Chemistry, (Paper ID 13328) page 93.

7.-"Pd(II)-CATALYZED CYCLOISOMERIZATION OF ALKYNIC ACIDS IN WATER. NEW ONE-POT TANDEM CYCLOISOMERIZATION/CLICK CHEMISTRY REACTIONS." impartida en el 40 International Conference of Inorganic Chemistry, celebrado en septiembre de 2012 en Valencia (España).