Part A. Personal Information

DATE	14/07/2015

Surname(s)	Freire Iribarne
Forename	Félix
Sex	Male
Age	38
Researcher ID	D-3103-2013
Open Researcher and Contributor ID (ORCID)	0000-0002-2672-5830

A.1. Professional Situation Now

Post/ Professional Category	Ramón y Cajal Researcher	
UNESCO Code	230600 - Organic Chemistry	
Key Words	Nanostructures; Structural and spectroscopy; Stereochemistry; Autoassembly; Molecular recognition: Design and Synthesis	
Name of Institution	University of Santiago de Compostela	
	Department/Center	Centre for Research in Biological Chemistry and Molecular Materials
	Full Address	Jenaro de la Fuente s/n
	Email Address	felix.freire@usc.es
	Phone Number	881815742
Start date	14/10/2010	

A.2. Academic Preparation *(title, institution, date)*

2000	*University of Santiago de Compostela*	*First Degree*	*Chemistry*
2002	*University of Santiago de Compostela*	*Masters (if appropriate)*	*Organic Chemistry*
2005	*University of Santiago de Compostela*	*PhD*	*Determining the Absolute Configuration of Diols and Triols by 1H-NMR*

A.3. Indicators of Quality in Scientific Production *(See the instructions)*

Number of Documents: 25
Total number of Citations: 457. Citations during the last 5 years: 311 (average number = 12.44)
h-index = 14 (Scopus)
Publications in the first quartile (Q1) = 24
Publications in the first decile (D1) = 16
phd Thesis Supervised: 1 (Defense October 2015)
3 articles highlighted as VIP (1 x Chem. Eur. J. 2005, 2 x Angew. Chem Int. Ed. 2007 and 2011) and one as SPOTLIGHT (1 x J. Am. Chem. Soc. 2012).
5 articles have been selected as COVER in different high impact journals (Polym. Chem. 2015, Angew. Chem Int. Ed. 2014, J. Am. Chem. Soc. 2012, 2 Chem. Sci 2013 and 2014, 1 Chem. Eur. J.2005).

Part B. Free Summary of CV *(Max. of 3.500 characters, including spaces)*

D. Félix Manuel Freire Iribarne received his Bachelor´s Degree in Chemistry from the University of Santiago de Compostela (USC, 8.35/10).
***Final Degree Year Project** - Univ. of Leicester (Taxol route, Supervisor: Prof. Richard Jenkins). Fellowship: Erasmus*
***Doctoral Thesis**: "Determining the Absolute Configuration of Diols and Triols by NMR" (2000-2005, cum laude).*
***Supervisors:** Prof. Emilio Quiñoá y Prof. Ricardo Riguera (USC)*
***Fellowships:** Tercer ciclo and Predoctoral from the Xunta de Galicia and Formación de profesorado Universitario (FPU)*
***Publications**: **2 x JOC, 3 x Org. Lett., 2 x Chem. Eur. J., 2 x Chem. Commun**.*

Predoctoral Stay: *NMR of Biomolecules: 4 months CIB-CISC (Madrid). Supervisor: Jesús Jiménez Barbero. Publications: 1* ***Chem. Eur. J. (VIP)***

Postdoctoral Stays*:*
- Lora Tamayo (CISC, ***2005****). Supervisor: Juan Luis Asensio y Jesús Jiménez Barbero. 8 months. NMR of Biomolecules. 2 articles:* ***1 x Chem. Commun.*** *and* ***1 x J. Am. Chem. Soc.***
-USC, ***2006****. Supervisor: Ricardo Riguera. 9 months, Structural Analysis by NMR. 2 articles:* ***1 x Chem. Commun****. and* ***1 x Org. Lett.*** *Fellowship* ***:*** *Postdoctoral Xunta de Galicia*
-Univ. of Wisconsin (***2006-2008****). Supervisor: Samuel H. Gellman. 2 years. Peptide Chemistry. 4 articles:* ***2 x Angew. Chem. Int. Ed (2 VIP), 2 x J. Am. Chem. Soc.*** *Fellowship: MEC-FULBRIGHT.*

Principal Investigator activity*: Research line: "Helical Polymers"*
Dynamic Helical polymers have attracted much attention during the last decade due to the possibility of modulate their helical sense once they have been synthetized. In our group, we focus our research in the design and synthesis of helical polymers that can respond to external stimuli and act as sensors. Moreover, the nanostructuration of these polymers can produce nanostructures that are able to modulate their chirality with potential applications in sensing, enantiomeric separations, asymmetric synthesis etc.
The quality of our research is shown in the quality of our publications (ACIE, JACS, Chem. Sci).
Research Contracts*: Juan de la Cierva, Parga Pondal y Ramón y Cajal*
Principal Investigator Research Projects*: 3 (1 National, 1 Regional and 1 RyC)*
Collaborator in Research Projects*: 11 (National and Regional)*
Published articles: 2 x Angew. Chem. Int. Ed, 1 x J. Am. Chem. Soc, 3 x Chem. Sci, 1 x Polym. Chem., 1 x Chem. Rev, 1 x Adv. Polym. Sci, 1 x Anales de Química
Submitted articles: 2
h index = 14 *(SCOPUS)*
Award: SUSCHEM *2012-Postdoc category to the best scientific publication in the chemicals area.*
3 articles highlighted *as* ***VIP*** *(1 x Chem. Eur. J. 2005, 2 x Angew. Chem Int. Ed. 2007 and 2011) and one as* ***SPOTLIGHT*** *(1 x J. Am. Chem. Soc. 2012).*
5 articles *have been* ***selected*** *as* ***COVER*** *in different high impact journals (Angew. Chem Int. Ed.* ***2014****, 2 Chem. Sci* ***2014*** *and* ***2013,*** *J. Am. Chem. Soc.* ***2012****, 1 Chem. Eur. J.****2005****).*
Experience supervising doctoral thesis and/or final year projects
Doctoral Thesis*: 1 finished (October 2015), 5 still working*
Bachelor degree final year project*: 11*
Master degree final year project*: 7*
Master degree final year project ("TESINAS")*): 4*
Supervision of Students in practice: 6
More than ***50 contributions*** *to different Conferences (national and international) as Poster, Oral Communication or invited speaker.*

Part C. Accomplishments *(Order by typology)*

1. Awards: SUSCHEM 2012 (postdoctoral category); **Poster prize** "Chirality at the nanoscale 2011, Liverpool"
2. ***Accredited as Associate Professor (Contratado Doctor 2012, Titular 2014)***
3. ***Positive Evaluation*** *of the ANEP* ***I3*** *program (2014)*
4. ***ANEP assessor****:*
5. Referee of ACS and RSC
6. Teaching (2010-2015): *784 teaching hours (lab + theory) at the Univ. of Santiago de Compostela. Evaluation of teaching activity: 4.69 over 5 in the last three years (average in the university 3.75).*
7 Supervisor Activity (2011-2015): Bachelor degree final year Project *(11) ;* ***Master degree final year Project*** *(7) ;* ***Master degree final year project ("TESINAS")*** *(4);* ***Doctoral Thesis****: 1 finished (October 2015).*
8. 3 VIP articles: *(1 x Chem. Eur. J. 2005, 2 x Angew. Chem Int. Ed. 2007 and 2011) and one as* ***SPOTLIGHT*** *(1 x J. Am. Chem. Soc. 2012).*
9. **5** articles have been selected as **COVER** in different high impact journals (Polym. Chem. 2015, Angew. Chem Int. Ed. 2014, J. Am. Chem. Soc. 2012, 2 Chem. Sci 2013 and 2014, 1 Chem. Eur. J.2005).

C.1. Publications

2 x JOC (2005, 2007); 3 x Org. Lett. (2005, 2006, 2010); 3 x Chem. Eur. J. (2 x 2005, 2009); 4 x Chem. Commun. (2005, 2 x 2007, 2009), 4 x JACS (2007, 2008, 2009, 2012); 4 x Angew. Chem. (2007, 2x 2011, 2014), 3 x Chem. Sci. (2013, 2014, 2015), 1 x Adv. Polym. Sci. (2014), 1 x Polym Chem. (2015), 1 x Chem. Rev. (2016)

1. Seila Leiras; **Felix Freire***; Emilio Quiñoá; Ricardo Riguera. Reversible Assembly of Enantiomeric Helical

Polymers: From Fibers to Gels. ***CHEMICAL SCIENCE*. 6, 246 - 253. (United Kingdom): Royal Society of Chemistry, 2015.**
Corresponding author: Yes **Impact index in year of publication: 9.211**
Relevant results: Corresponding author. In this paper a novel material based on a PPA stereocomplex is described. The author design a helical PPA able to recognize its enantiomeric structure to form fiber-like due to theinterlocking of both helical chains.

2. Sandra Arias; **Felix Freire***; Emilio Quiñoá; Ricardo Riguera. The leading role of cation–π interactions in polymer chemistry: the control of the helical sense in solution. ***POLYMER CHEMISTRY*, 6, 4725-4733, (United Kingdom): Royal Society of Chemistry, 2015. ISSN 1759-9954**
Corresponding author: Yes **Impact index in year of publication**: 5.520 Journal in the top 25%: Yes
Relevant results: Article selected cover of the journal Corresponding author. In this work, Dr. Félix Freire designed a helical polymer metal complex, where its helical sense can be selectively induce to the left- or right handed helical sense by the activation/deactivation of cation pi interactions by the presence of a cosolvent.

3. Sandra Arias; **Félix Freire***; Emilio Quiñoa; Ricardo Riguera. Nanospheres, nanotubes, toroids and gels with controlled macroscopic chirality. **ANGEWANDTE CHEMIE INTERNATIONAL EDITION. 53, pp. 13720 - 13724. (Germany): Wiley, 2014. ISSN 1433-7851**
Corresponding author: Yes **Impact index in year of publication**: 11.261 Journal in the top 25%: Yes
Relevant results: Article slected as Cover of the journal Corresponding Author. PhD student Sandra Arias got an accesit in the SUSCHEM 2015 awards (category predoc) In this work different chiral nanostructures (nanospheres, nanotubes, toroids) were obtained from different helical polymer metal complexes. The chirality and size of these nanostructures can be tuned varying the polymer/metal ratio or by the presence of a cosolvent.

4. Julián Bergueiro; **Félix Freire*;** Edison P. Wendler; José M. Seco; Emilio Quiñoá; Ricardo Riguera. The ON/OFF switching by metal ions of the "Sergeants and Soldiers" chiral amplification effect on helical poly(phenylacetylene)s. **CHEMICAL SCIENCE. 5 - 6, pp. 2170 - 2176**. **(United Kingdom): Royal Society of Chemistry**, **2014**.
Corresponding author: Yes **Impact index in year of publication**: 9.211 Journal in the top 25%: Yes
Relevant results: Cover of the Journal Corresponding author. In this work we introduce a new concept in the sergeants and soldiers effect, the chiral soldier. This chiral soldier behaves like a soldier but can be promoted to a higher rank, the Sergeant by the presence of an external stimulus (metal ion). Once the chiral soldier is activated it can command to the rest of the soldiers to adopt a specific conformation resulting in the adoption of a single helical sense in the copolymer.

5. Seila Leiras; **Félix Freire*;** José M. Seco; Emilio Quiñoá; Ricardo Riguera. Controlled modulation of the helical sense and the elongation of poly (phenylacetylene) s by polar and donor effects. **CHEMICAL SCIENCE. 4, pp.2735 - 2743. (United Kingdom): Royal Society of Chemistry, 2013.**
Corresponding author: Yes **Impact index in year of publication**: 8.31 Journal in the top 25%: Yes
Relevant results: Cover of the Journal Corresponding author. In this article the authors describe a polymer able to classify the solvents attending to the donor and polar character of the solvent. Thus, the polymer can adopt 4 different helical structures easily determined by CD and UV spectra, depending on the donor/polar, donor/non-polar, non-donor/polar, non-donor/non-polar character of the solvent

6. Félix Freire; José M. Seco; Emilio Quiñoá; Ricardo Riguera. Nanospheres with Tunable Size and Chirality from Helical Polymer–Metal Complexes. **JOURNAL OF THE AMERICAN CHEMICAL SOCIETY. 134, pp. 19374 -19383. (United States of America): American Chemical Society, 2012. ISSN 0002-7863**
Position of signature: 1 **Impact index in year of publication**: 10.68 Journal in the top 25%: Yes
Relevant results: Cover of the Journal Article highlighted as SPOTLIGHT in JACS This article describe the preparation of chiral nanospheres from a helical polymer metal complex. The size and the chiral content of the nanospheres can be tuned varying the polymer/metal ratio. In this paper, the encapsulation ability of this nanospheres is also described, showing the encapsulation of different particles and dyes.

7. **Félix Freire;** José M. Seco; Emilio Quiñoá; Ricardo Riguera. Chiral Amplification and Helical Sense Tunning by Mono- and Divalent Metals on Dynamic Helical Polymers. **ANGEWANDTE CHEMIE-INTERNATIONAL EDITION. 50, pp. 11692 - 11696. (Germany): WILEY-VCH, 2011. ISSN 1433-7851**
Position of signature: 1 Impact index in year of publication: 12.73 Journal in the top 25%: Yes
Relevant results: First work as Ramón y Cajal researcher. In this work, Dr. Felix Freire design and synthesize a "racemic" chiral helical polymer, that although chiral, behaves as a racemic or achiral one. The addition of different metal ions can selectively induce the right or left-handed helical structure of the polymer depending on the metal valence, and therefore the polymer acts as a valence metal sensor.

8. Félix Freire; Aaron Almeida; John D. Fisk; Jay D. Steinkruger; Samuel H. Gellman. Impact of Strand Length on theStability of Parallel Beta-Sheet Secondary Structure. **ANGEWANDTE CHEMIE-INTERNATIONAL EDITION. 50, pp. 8735 - 8738. (Germany): WILEY-VCH, 2011. ISSN 1433-7851**
Position of signature: 1 Impact index in year of publication: 12.73 Journal in the top 25%: Yes

Relevant results: Article classified VIP (very important paper) First author Work done during a postdoctoral stage at the Univ. of Wisconsin in the Prof. Samuel H. Gellman group. In this work Dr. Félix Freire study the stability of parallel beta sheet when the length of the strand increase. It was found that in parallel beta sheets, the secondary structure becomes more stable when the length of the strand is increased.

C.2. Projects

1. Name of the project: Helical Polymers as beta helix mimetics to study parallel beta sheets. (2012-PN113)
Geographical area: National **Degree of contribution**: Scientific coordinator
Entity where project took place: Universidad de Santiago de Compostela
City of entity: Santiago de Compostela, Galicia, Spain
Nº of researchers: 5 Type of participation: **Principal investigator**
Name of the programme: 6 PN - Química
Code: **Ref.CTQ2012-31381** Start-End date: 01/01/2013 - 31/12/2015 Duration: 3 years **Total amount**: 81.900

2. Name of the project: Design and Synthesis of Helical Polymers: Sensors and Nanotechnology. (EMERXENTES) (2013-PG013)
Geographical area: Regional **Degree of contribution:** Scientific coordinator
Entity where project took place: Universidad de Santiago de Compostela
Nº of researchers: **7** **Type of participation**: Principal investigator
Name of the programme: Consellería de Cultura, Educación e Ordenación Universitaria-XUNTA DE GALICIA
Code: **Ref.EM2013/032** Start-End date: 08/08/2013 - 07/08/2015 Duration: 2 years **Total amount**: 97.0003. 3.

3. Name of the project: Design, Synthesis, Applications and Structural Analysis of Helical Polymers
Geographical area: National **Degree of contribution:** Scientific coordinator
Entity where project took place: Universidad de Santiago de Compostela
Nº of researchers: 1 **Type of participation:** Principal investigator
Name of the programme: 4 PN - Ramón y Cajal
Code : **Ref.RYC-2010-06433** Start-End date: 22/11/2010 - 21/11/2012 Duration: 2 years **Total amount**: 15.000

4. Name of the project: Consolidación e estructuración, GRC
Geographical area: Regional **Degree of contribution**: Researcher
Entity where project took place: Universidad de Santiago de Compostela
Name principal investigator (PI, Co-PI....): Ricardo Riguera
Nº of researchers: 15 **Type of participation**: Team member
Start-End date: 2014 - 2017 **Duration**: 3 years **Total amount**: 300.000

5. Name of the project: Consolidación e estruturación de unidades de investigación competitivas (Grupos de referencia competitiva) (2011-PG055)
Geographical area: Regional **Degree of contribution**: Researcher
Entity where project took place: Universidad de Santiago de Compostela
Name principal investigator (PI, Co-PI....): Ricardo Riguera
Nº of researchers: 15 **Type of participation**: Team member
Start-End date: 2011 - 2013 **Duration**: 3 years **Total amount**: 168.000

I participated as researcher in other 8 projects: [PG: plan Galego; PN: Plan Nacional]
1. Helical Polymers: Design, synthesis and Sensor ability (2009- PN118); **2.** Biosensors for chiral recognition of biomolecules and drugs: helical polymers and nanoparticles (2009-PG329); **3.** Chiral recognition of polifunctional compounds (2006-PG130); **4.** Absolute Configuration by NMR (2005-PN200); **5.** Novel therapeutic strategies in respiratory diseases: Design, synthesis and characterization of novel biocompatible polymers (2004- PG157); **6.** Chiral Recognition by NMR (PGIDIT03PXIC20908PN); **7.** Chiral Recognition by NMR. Development of novel protocols and application to polyfunctional compounds (2002-PN030); **8.** Novel antibiotics from marine bacterias (2002-PG152).

C.5, C.6, C.7… Other

*"Course on pedagogical ability" (**CAP**) from the USC (2001)*
He took more than 100 h in different courses to improve the teaching activity
***Teaching:** 784 teaching hours (lab + theory) at the Univ. of Santiago de Compostela. **Evaluation of teaching activity**: 4.69 over 5 in the last three years (average in the university 3.75).*
***ANEP assessor**: He took part in the evaluation committee of RyC 2012, he has assessed 8 research projects (regional and national).*
***Referee** of the American Chemical Society and the Royal Society of Chemistry*
***Positive Evaluation** of the ANEP **I3** program*
***Accredited as Associate Professor** (Contratado Doctor 2012, Titular 2014)*

Instructions

Important Announcement

Following the Call for Proposals, **ONLY CVS PRESENTED IN THIS FORMAT WILL BE TAKEN INTO CONSIDERATION**. **CVs presented in other formats WILL BE DISMISSED with no possibilities for modifications.**

GENERAL CONSIDERATIONS

Following the call it is mandatory to use the following format when filling the document: Font 11 on Times New Roman/ Arial, single interlineal space, lateral margins of 2.5cm and top and bottom margins of 1.5cm.

Max. extention of the whole document (Part A, B and C) cannot exceed four pages.

PART A. PERSONAL INFORMATION

Researcher ID is a unique identifier that consists of alphanumeric characters that enable researchers to manage their publication lists, track their times cited counts and h-index, identify potential collaborators and avoid author misidentification. It is hosted by Web of Science.
Access: Web of Science > My Settings > Researcher ID

Open Researcher and Contributor ID (ORCID) provides a persistent digital identifier that distinguishes the researcher from every other person and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities ensuring that your work is recognized.
Access: www.orcid.org

A.3. Indicators of Quality in Scientific Production

Please add information on a) total number of citations, average number of citations during the last five years, b) total number of publications in the first quartile (Q1) and first decile (D1), e) h index, and f) any other indicators that you may consider relevant.

To calculate these values, use default data collected in the Web of Science of Thomson Reuters and/or Scopus. When this is not possible, other indicators may be used, specifying the reference database.

PART B. FREE SUMMARY OF CV *(Max. of 3.500 characters, including spaces)*

Describe briefly your scientific career, the main scientific-technical achievements, and the mid-to-long term scientific-technical interests and objectives of your research agenda. Indicate any other aspects that you may consider important to understand your career path.

PART C. ACCOMPLISHMENTS (Order by typology)

Given the limitations in number of characters, please mention the most relevant achievements sorted by the typology that best suits your scientific profile. Please be clear and avoid ambiguities.

Use reverse chronological order within each section. Limit your merits over the past 5 years, except for those which have an extraordinary importance for your CV.

C.1. Publications

Include a full review of relevant 5 to 10 publications.

In case of an article, please include authors in order of signature, year of publication, title of the article, name of the journal, volume, start page to end page.
If it's a book or chapter of a book, include its publisher and ISBN also.
If there are many authors, please indicate the total number of signatories and the position of the researcher (total number/ position of researcher) as for example 95/18.

C.2. Participation in Research, Development and Innovation Projects
Indicate the most important projects in which you have participated (maximum 5 to 7 projects), including a) its reference, b) title, c) funding body and call for proposals, d) name of the principal investigator and his/her institution affiliation, e) date of start and end of the project, f) amount of subsidy, and g) your type of participation, e.g.: researcher, principal investigator, European project coordinator, etc..

C.3. Participation in Research, Development and Innovation Contracts
Indicate the most important contracts in which you have participated (maximum 5 to 7 contracts), including a) title, b) company or entity, c) name of principal investigator and his/her institution affiliation, d) date of start and end of the contract, and e) amount of funding.

C.4. Patents
Indicate the most important patents and other intellectual property in which you have collaborated. Give a) the order of signing authors, b) reference, c) title, d) priority countries, e) date, f) holder entity and companies that are exploiting the patents.

C.5, C.6, C.7… Other
By sequential numbering (C.5, C.6, C.7 ...) please include any other achievements that you deem necessary, such as for example: directions of works, participation in assessment or advisory tasks, membership of international committees, management of scientific activity, editorial boards, **scientific awards**, etc.

FINAL CONSIDERATIONS

Please remember that all the submitted achievements must be presented concisely, including dates or periods for each performance.

The short CV aims to facilitate, organize and streamline the evaluation process. The use of the individual identification number of the researcher facilitates access to the published scientific papers and information on the impact of each of them.

If you believe this short CV does not contain a representative part of your career, you may voluntarily include an extensive version in the proposal documentation, which will also be provided to the reviewers of your application.