

Part A. Personal Information

DATE	27/05/2019
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Surname(s)	Fernández Fernández	
Forename	Inmaculada	
Social Security, Passport, ID number	28688370X	
Sex	Female	
Age	57	
Researcher codes	WoS Researcher ID (*)	F-2642-2016
	SCOPUS Author ID(*)	55900116200
	Open Researcher and Contributor ID (ORCID)	0000-0002-3468-387X

(*) At least one of these is mandatory

A.1. Current position

Post/ Professional Category	Professor	
UNESCO Code	2306(230606,230614,230616); 2390(239001)	
Key Words	Asymmetric synthesis; Organometallic catalysis; Organocatalysis; Biological Activity	
Name of the University/Institution	University of Seville	
	Department/Centre	Química Orgánica y Farmacéutica
	Full Address	Profesor García González, 2. 41012-Sevilla-
	Email Address	inmaff@us.es
	Phone Number	954556735
Start date	2009	

A.2. Education (title, institution, date)

Year	University	Degree	Title
1984	Seville	Graduate	In Chemistry
1988	Seville	PhD	In Chemistry

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

- a) Total number of citations: **2.957**. Number of citations during the last five years: **776**
b) Total number of publications in the first quartile (Q1): 43
c) h-index: 27 (Scopus)
d) Average Citation per Article: 31.61.
e) Thesis supervised: **12**

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

Inmaculada Fernández graduated in chemistry from the University of Seville (1984), where she obtained her Ph.D. degree (1988) working with Prof. Felipe Alcudia and Prof. Francisco Zorilla on conformational analysis of sulfur compounds. She was subsequently awarded a NATO fellowship and carried out postdoctoral work with Prof. Guy Solladié at the Ecole Européenne des Hautes Etudes des Industries Chimiques de Strasbourg (EHICS), France,(1988-1990) working on the total asymmetric synthesis chiral macromolecules of biological interest. She was a visiting Professor (1993–1995) at the Universidad Autónoma de Madrid, Spain, working with Prof. José Luis García-Ruano on the chemistry of chiral sulfinylamines.

In 1990, she took her position as Tenured Professor at the Faculty of Pharmacy at the University of Seville, and was promoted to Full Professor at the same University in 2009. She

is currently responsible for the Stereochemistry and Asymmetric Synthesis (FQM-102) research group and Director of the Organic and Pharmaceutical Chemistry Department. Her research group has developed one of the most efficient approaches for the asymmetric synthesis of chiral sulfur derivatives.

She has extensive experience in the chemistry of carbohydrates, asymmetric synthesis both stoichiometric and catalytic (organic and organometallic), and in the total synthesis of products of biological interest. His work in these fields has resulted in more than 90 scientific publications in the most prestigious journals in the field of organic synthesis (Chemical Review, Journal of American Chemical Society, Chemical Communication, Journal of Organic Chemistry, Organic Letters, Journal of Medicinal Chemistry, etc. ...) and 6 patents, one of which has recently been licensed to the English pharmaceutical company Evgen Pharma.

She is coauthor of 13 book chapters and has supervised 12 doctoral theses. During her scientific career, she has participated in several scientific projects and has given conferences in specialized congresses, as well as several postgraduate courses.

Her main scientific interests are framed in the field of asymmetric synthesis, using chiral compounds of sulfur and phosphorus, developing new methodologies for their enantioselective synthesis. In the last decade she has focused her research on the development of new efficient chiral catalysts in asymmetric organic and organometallic catalysis, and in the asymmetric synthesis of compounds of therapeutic interest.

Part C. Relevant accomplishments

C.1. Publications

1. R. Recio, E. Elhalem, J.M. Benito, **I. Fernandez**, N. Khiar. NMR study on the stabilization and chiral discrimination of sulforaphane enantiomers and analogues by cyclodextrins. *Carbohydrate Polymers*. **2018**, 186, 118-125. **IF: 4.811**.
2. J.F. Moya, C. Rosales, **I. Fernandez**, N. Khiar. Pyrene-tagged carbohydrate-based mixed P/S ligand: spacer effect on the Rh(I)-catalyzed hydrogenation of methyl α -acetamidocinnamate. *Org. & Biomol. Chem.* **2017**, 15(27), 5772-5780. **IF: 3,564**
3. Borrego, L. G.; Recio, R.; Alcarranza, M.; Khiar, N.; **Fernández, I.** An efficient and practical method for the enantioselective synthesis of tertiary trifluoromethyl carbinols. *Adv. Synth. & Catal.* **2018**, 360, 1273-1279 **IF : 5,646**.
4. R. Recio. E. Vengut, B. Mouillac, H. Orcel, M. López-Lázaro, J.M. Calderón-Momtano, E. Álvarez, N. Khiar, **I. Fernández**. Design, synthesis and biological studies of a library of NK1-Receptor Ligands Based on a 5-arylthiosubstituted 2-amino-4,6-diaryl-3-cyano-4H-pyran core: Switch from antagonist to agonist effect by chemical modification. *European Journal Of Medicinal Chemistry*. **2017**, 138, 644-660. **IF: 4.519**.
5. J.F. Moya, C. Rosales, **I. Fernández**, N. Khiar. Pyrene-tagged carbohydrate-based mixed P/S ligand: spacer effect on the Rh(I)-catalyzed hydrogenation of methyl α -acetamidocinnamate. *Org. Biomol. Chem.* **2017**, 15(27), 5772-5780. **IF: 3,564**
6. J.J. Cid-Martín, M. Assali, E. Fernandez, V.Valdivia, E. Sanchez-fernandez, J.M. Garcia-Fernandez, R. Wellinger, **I. Fernandez**, N. Khiar. Tuning of glyconanomaterial shape and size for selective bacterial cell agglutination. *Journal of Materials Chemistry B*, **2016**, 4, 2028-2037. **IF: 4,543**
7. Chelouan, A.; Recio, R.; Borrego, L. G.; Álvarez, E.; Khiar N.; **Fernández, I.** Sulfinamide Phosphinates as Chiral Catalysts for the Enantioselective Organocatalytic Reduction of Imines. *Org. Lett.* **2016**, 13, 3258-3261. **IF: 6,579**.
8. M. Pernia, M. Assali, J. J. Cid, V.Valdivia, J. Franco Munoz, D. Pozo, **I. Fernandez**, N. Khiar. Synthesis of 1D-Glyconanomaterials by a Hybrid Noncovalent-Covalent

Functionalization of Single Wall Carbon Nanotubes: Study of their Selective Interactions with Lectins and with Live Cells. *Cells.Nanoscale*.**2015**, 7, 19259 - 19272. **IF: 7,8**.

9. E. Elhalem, R. Recio, S. Werner, F. Lieder, J. M. Calderon-Montano, M. López-Lázaro, **I. Fernandez**, N. Khiar. Sulforaphane homologs: Enantiodivergent synthesis of both enantiomers, activation of Nrf2 transcription factor and selective cytotoxic activity. *Eur. J.Org. Chem.* **2014**, 87, 552–563. **IF: 3.447**.

10. V. Valdivia, **I. Fernandez**, N. Khiar. “Sulfolefin”: a mixed sulfinamido-olefin ligand in enantioselective rhodium-catalyzed addition of arylboronic acids to trifluoromethyl ketones. *Org. Biomol. Chem.*, **2014**, 12 (8), 1211 - 1214. **IF: 3,568**

C.2. Research Projects and Grants

1. Desarrollo de Nuevos Sistemas Moleculares y Supramoleculares para una Catálisis Asimétrica Sostenible. Síntesis de Compuestos Antitumorales, Antivíricos y Antibacterianos. Principal Investigator: Inmaculada Fernández Fernández.

Project Type: Plan Estatal 2013-2016 Retos - Proyectos I+D+i

Referece: CTQ2016-78580-C2-2-R.

Participating Entities: Universidad de Sevilla

Start date: 30-12-2016. Completion date: 29-12-2019

Company/ Financing organization: Ministerio de Economía y Competitividad

Amount of grant: 80.000,00 euros

2. Título: Diseño y Síntesis de Nuevos Sistemas Moleculares y Supramoleculares Nanométricos como Herramientas Útiles en Síntesis Asimétrica y Biomedicina.

Principal Investigator: Inmaculada Fernández Fernández.

Project Type: Plan Estatal 2013-2016 Retos.

Referece: CTQ2013-49066-C2-2-R.

Participating Entities: Universidad de Sevilla

Start date: 01-01-2014. Completion date: 31-08-2017

Company/ Financing organization:: Ministerio de Economía y Competitividad

Amount of grant: 127.050,00 euros

3. Título: Nuevos Análogos del Sulforafano: Síntesis Enantioselectiva y Actividad Biológica. Principal Investigator: Inmaculada Fernández Fernández.

Project Type: Proyectos de Excelencia de la Junta de Andalucía.

Referece: P11-FQM-8046.

Participating Entities: Universidad de Sevilla

Start date: 26-03-2013. Completion date: 31-03-2018

Company/ Financing organization: Junta de Andalucía (Consejería de Innovación, Ciencia y Empresas).

Amount of grant: 208.242€

4. Título: Carbohidratos y Compuestos Quirales de Azufre: Aplicación para la Síntesis Estereoselectiva de Compuestos de Interés Biológico. Principal Investigator: Inmaculada Fernández Fernández.

Project Type: Plan Nacional del 2010.

Referece: CTQ2010-21755-C02-02.

Participating Entities: Universidad de Sevilla

Start date: 01-01-2011. Completion date: 31-12-2014

Company/ Financing organization:: Ministerio de Ciencia e Innovación.

Amount of grant: 72.600 euros.

C.3. Contracts

1. Title: Synthesis of Novel Sulforaphane Analogues.

Financing Company: Evgen Pharma; Entidades participantes: US.

Principal Investigator: Inmaculada Fernández Fernández.

Contract amount: 100.000 euros. Date: 10/05/2016.

2. Title: Asesoramiento para la Síntesis de Nano-vector que Carga con el Principio Activo Camptotecina. (PRJ201602870)

Financing Company: Nanosel S.L.. Entidades participantes: US.

Principal Investigator: Inmaculada Fernández Fernández.

Contract amount: 6.655 euros. Date: 1/9/2016 al 31/8/2017.

3. Title: Licencia Exclusiva de la Patente 201230356 "Compuestos Derivados del Sulforafano, Método de Obtención y su Uso Médico, Alimenticio y Cosmético.

Financing Company: Evgen Pharma; Entidades participantes: CSIC y US.

Principal Investigator: Inmaculada Fernandez Fernandez.

Contract amount: 45.000 euros. Date: 10/11/2015.

4. Title: Opción de Licencia de la Patente 201230356 "Compuestos Derivados del Sulforafano: Método de Obtención y su Uso Médico".

Financing Company: Evgen Pharma. Entidades participantes: CSIC y US.

Principal Investigator: Inmaculada Fernandez Fernandez.

Contract amount: 25.000 dolares. Date: 30/09/2013

5. Title: Extensión de la Opción de Licencia de la Patente 201230356 "Compuestos Derivados del Sulforafano: Método de Obtención y su Uso Médico".

Financing Company: Evgen Pharma. Entidades participantes: CSIC y US.

Principal Investigator: Inmaculada Fernandez Fernandez.

Contract amount: 6.500 euros. Date: 4/3/2013.

C.4. Patents and other IPR

1. Inventors: N. Khiar, **I. Fernández**, R. Recio, López-Lázaro, M., Calderón-Montaña, J.M.

Title: **Antagonistas de los receptores NK1 derivados de hidratos de carbono, método de obtención y uso médico.** Application number: US2015110863 (A1)-2015-04-23. **2015.**

Entities: CSIC – Universidad de Sevilla.

2. Inventors: N. Khiar, **I. Fernández**, R. Recío.

Título: **Compuestos derivados de sulforafano, método de obtención y su uso médico, alimenticio y cosmético.** Application number: ES. 201230356. **2013**

Entities: CSIC – Universidad de Sevilla

Companies which are exploiting it: Evgen Pharma.

C.5. Thesis supervised

1. "Nuevas aproximaciones modulares para la síntesis estereoselectiva de ligandos quirales bidentados y compuestos de interés farmacológico, a partir de N-terc-butilsulfoniliminas". Lorenzo Gabriel Borrego Sánchez de la Cuesta. Universidad de Sevilla. **2017.**

2. "Derivados Quirales de Azufre y de Fósforo: Síntesis y Aplicaciones en Catálisis Asimétrica". Ahmed Chelouan. Universidad de Sevilla. **2014.**

3. "Ligandos Mixtos Azufre-Fósforo Derivados de Carbohidratos: Síntesis y Aplicaciones". Juan Francisco Moya. Universidad de Sevilla. **2014.**

C.6. Awards received

1. Best publication prize of september **2017**, January **2018** and May **2018** of the Faculty of Pharmacy of the US.

2. Honorary Award for the best communication in the IX Meeting of Young Pharmacologists of Andalusia, **2017.**

3. University of Seville-Bruker Research Award, best project **2013.**

4. University of Seville-Bruker Research Award, best publication **2013.**

5. Cartuja-Ebro Food Award **2013.**

Instructions

Important Announcement

Following the Call for Proposals, **ONLY CVS SUBMITTED 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 Times New Roman / Arial (minimum size 11), single interlineal space, lateral margins of 2.5 cm and top and bottom margins of 1.5 cm.

Max. length 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 Tools > Researcher ID.

Author 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 assigned automatically by SCOPUS. You can find an author identifier by running a search for that author. It will appear underneath the author details.

Access: SCOPUS > Author Feedback Wizard> Researcher name.

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), c) h-index, d) thesis supervised, and e) any other indicators that you may consider relevant.

To calculate these values, use default data collected in the Web of Science 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: direction 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 researcher identifier facilitates access to the published scientific papers and information on the impact of each of them.

Remember that only CVs submitted either in this format or in CVN abridged version will be taken into consideration.