CURRÍCULUM VÍTAE NORMALIZADO

Vanesa Fernandez Moreira

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GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

FECYT FUNDACIÓN ESPAÑOLA PARA LA CIENCIA Y LA TECNOLOGÍA

Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

PROFESSIONAL EXPERIENCE

16/09/2019 JIN-Researcher at the ISQCH.
2015-15/09/2019 Postdoctoral Researcher: ISQCH. (PI: Prof. M. C. Gimeno)
2011-2015 Postdoctoral Researcher: Uni. Zaragoza. (PI: Prof. M. C. Gimeno)
2009-2010 Postdoctoral Fellow: Trinity College Dublin, Ireland. (PI: Prof. S. Draper)
2008-2009 Postdoctoral Fellow: École Polytecnique Fédérale de Lausanne (EPFL), Switzerland. (PI: Prof. J. C. Bünzli)

EDUCATION

2008: PhD.: Synthesis of ligands-organic conjugates for biological imaging applications. Cardiff University, UK. Prof. M.P. Coogan and Prof. A. Amororso.
2005: Tesis de licenciatura and D.E.A.: Univ. de Vigo. Dr. E. Freijanes Rivas.
2003: Licenciatura en Ciencias Químicas, Universidad de Vigo

ANECA: Profesora contratada doctora

WEBSITE: http://vfernandez-moreira.webs.com/

SELECTED PUBLICATIONS (total 36 in JCR)

1) Bioactive and luminescent indole and isatin based gold(I) derivatives. **V. Fernández-Moreira**, * C. Val-Campillo, I. Ospino, R. P. Herrera, I. Marzo, A. Laguna and M. C. Gimeno* **Dalton Trans., 2019, 48 , 3098-3108**. (**Corresponding author**)
2) Heterobimetallic Complexes for Theranostic Applications. **V. Fernández- Moreira*** and M. C. Gimeno* **Chem. Eur. J., 2018 , 24, 3345-3353.** (**Corresponding author**)
3) Luminescent Re(I) and Re(I)/Au(I) complexes as cooperative partners in cell imaging and cancer therapy. **V. Fernández-Moreira,*** I. Marzo and M. C. Gimeno* **Chem. Sci., 2014, 5, 4434-4446.** (**Corresponding author**)

BOOK CHAPTER: Gold and Platinum Alkynyl Complexes for Biomedical Applications. E. Cerrada, **V. Fernández-Moreira**, M. C. Gimeno, **Adv. Organomet. Chem**. **Eds. Elsevier. 2019.**

INDUSTRY IMPACT:

Ximbio advertises **2 complexes developed within the frame of my PhD Thesis as luminescent cell imaging agents** (Chem. Commun., 2011, 47 3096; Angew. Chem. Int. Ed., 2009, 48, 4965; New J. Chem., 2008, 32, 1097)

SELECTED TEACHING AND SUPERVISION EXPERIENCE (Total: TFG: 5; TFM: 2; TAD: 1; Erasmus: 5; Master Phil.: 3)
2018-2019 Superv: A. Luengo, M. Redrado (PhDs)
2017-2018 Superv: A. Luengo (PhD), M. Redrado (TFM)
2016-2017 Superv: M. Redrado, A. Torguet (TFGs)

SELECTED CONGRESSES (Total: 34)
2019- II Workshop en Nanooncología. Complejos de Oro en medicina **(Invited Oral Cont.)**
2018- XXXVI GEQO-Congress: Organizing and Scientific Committee (Zaragoza)

SELECTED CONTRACTS and FELLOWSHIPS
29/11/2019: Postdoctoral Fellowship: " **Ramón y Cajal**" RYC2018- 025872-I
2009 – 2010: Postdoctoral Fellowship: " **Marie Curie ToK Fellowship**"
2008 – 2009: Postdoctoral Contract: **Swiss Office for Science and Education Foundation**
2005 – 2008: Doctoral Fellowship: **Engineering and Physical Sciences Research Council (EPSRC)**

PROJECT as PI: RTI2018-097836-J-I00, Amount: 181.500 euros, 3 years

OTHER SELECTED PROJECTS: (TOTAL of 12)
National projects: (**CTQ2016**-75816-C2-1-P), network of excellence (CTQ2015, 70371-**REDT**), Industry Collaboration: **INNPACTO** (**IPT**-2012-0067-060000), Dissemination: (**FECYT**:FCT-15-10128), and **European Projects** such as Marie Curie (**FP6**-14472), (**COST** Action D38), among others.

DIRECTLY INVOLVED IN ACTIVITIES OF: Dissemination (Video production, etc.), Journal per Review Refereeing (Inorg. Chem., Dalton Trans., etc.), Grant Evaluation (MiChem), PhD. Evaluation, Managment (Legal Representative of Postdoctoral Fellows at the ISQCH and UZ)

CARRER BREAK: Maternity leave: 28/04/2014-15/09/2014

General quality indicators of scientific research

This section describes briefly the main quality indicators of scientific production (periods of research activity, experience in supervising doctoral theses, total citations, articles in journals of the first quartile, H index...). It also includes other important aspects or peculiarities.

H index 17

- I have published **36 scientific articles in Journal Citation Reports®** (Publications: (2) predoctoral, (8) doctoral, (1) 1st postdoctoral, (1) 2nd postdoctoral, (24) UZ-ISQCH period).
- **Top Multidisciplinary Journals:** Angew. Chem. Int. Ed., Chem. Sci., Small, Chem. Commun., Chem. Eur. J., Adv. Funct. Mater., Pure & Appl. Chem., etc.
- **1 book Chapter**: Advances in Organometallic Chemistry, in press.
- **1 Newsletter article**: EPA, 2018.
- **> 1400 citations.**
- **7 articles** as **CORRESPONDING AUTHOR** (Chem. Sci., Chem. Eur. J., Chem. Commun., Inorg chem., Dalton Trans.,Organometallics and Inorg. Chim. Acta).
- **First author in 19 of the scientific articles** (including those where the alphabetical order policy was applied) and **second author in 6 articles**
- **Acreditación Aneca**: Profesora contratada Doctora y Ayudante Doctora, Profesora Universidad Privada.
- **PI of Proyectos JIN** (Proyectos de I+D+i «Retos de investigación» 2018). Title: Bifunctional Photosensitizers for Cell Imaging and Photodynamic Therapy RTI2018-097836-J-I00 funded with 181.500 Euros.
- **Ximbio** (a website created to enable the sharing of research tools within the global life science community) advertises **2 complexes developed within the frame of my PhD thesis** (Chem. Commun., 2011, 47 3096–3098, Angew. Chem. Int. Ed. 2009, 48, 4965 –4968, New J. Chem., 2008, 32, 1097–1102).

SYNOPSIS

My wiliness to enrich chemistry knowledge, trying to broaden my chemical scope and learn new techniques, led me to work in different and well recognized institutions around Europe, ie. **University of Vigo** (Spain), **Cardiff University** (UK), **EPFL** (Switzerland), **Trinity College Dublin** (Ireland) **, University of Zaragoza** (Spain) and **ISQCH** (Spain).

During my **PhD at Cardiff University** under the supervision of **Prof. M. P. Coogan** and **Prof. J. A. Amoroso**, I developed skills and knowledge in the area of luminescent d6 metal complexes with applications in bioimaging. Then, at my **first postdoctoral period at the EPFL**, I joined the research group headed by **Prof. J.-C. Bünzli**, where I worked in a different area of chemistry, lanthanide chemistry, and I got expertise in bioconjungation techniques and biological assays. In the following **postdoctoral period** I joined the research group headed by **Prof. S. Draper** at **Trinity College Dublin**. There, I increased my understanding regarding ligand design and supramolecular chemistry. Later, at the ISQCH, my autonomy and leadership ability have been stablished through the implementation of a new research line: METALLODRUGS AS THERANOSTIC AGENTS. In addition, I became a **basic pillar of the structure of the ISQCH.** I am **legal representative of postdoctoral fellows and** involved in duties of **health and safety**. Moreover, I was a member of the organizing and scientific committee of XXXVI GEQO

2018. In 2019 I´ve been awarded with a Ramon Cajal Postdoctoral fellowship and a Proyect for Young Researcher (JIN) founded with 181.500 euros

Vanesa Fernandez Moreira

Surname(s): **Fernandez Moreira**
Name: **Vanesa**
ORCID: **0000-0002-1218-7218**
ScopusID: **17341944000**
ResearcherID: **M-2772-2014**
Personal web page: **http://vfernandez-moreira.webs.com/**

Current professional situation

Employing entity: CSIC **Type of entity:** State agency
Department: Instituto de Sintesis Química y Catálisis Homogénea
Professional category: Researcher
Start date: 16/09/2019
Type of contract: Temporary employment contract **Dedication regime:** Full time

Previous positions and activities

	Employing entity	Professional category	Start date
1	CSIC	Postdoctoral researcher	01/05/2015
2	Universidad de Zaragoza	Postdoctoral Researcher	08/01/2013
3	Universidad de Zaragoza	Postdoctoral Researcher	07/02/2011
4	Trinity College Dublin	Postdoctoral Fellow	01/09/2009
5	École Polytechnique Fédérale de Lausanne-EPFL	Postdoctoral Fellow	01/09/2008
6	Cardiff university	Laboratory Demonstrator	01/10/2005
7	Universidade de Vigo	Associate researcher	01/03/2004

1 **Employing entity:** CSIC **Type of entity:** Public Research Body
Professional category: Postdoctoral researcher
Start-End date: 01/05/2015 - 15/09/2019
Type of contract: Temporary employment contract
Dedication regime: Full time
Performed tasks: Co-lead the research line "metallodrugs as theranostic agents". · Supervision of PhD students working under the frame of this research line. · Supervision TFG and TFM students. · Training junior members of the research group to efficiently perform photophysical studies and biological assays. · Assist to perform highly specialised experiments such as cell imaging experiments or non-conventional photophysical studies. · Writing project proposals, articles for publication and actively looking for funding and collaborations. · Attendance to conferences and congress. · In charge of the seminars organization within the research group
Field of management activity: Public Research Body
Applicability in teaching and/or research: Gold and platinum alkynyl complexes for biomedical applications. Advances in Organometallic Chemistry. Vol 71, Eds. Elsevier, Serial Editors: Pedro

Pérez. (·) Dalton Trans., 2019, 48, 3089-3108. (*Corresponding author) (·) Inorg. Chem., 2019, 58, 3290-3301. (·) Pure Appl. Chem. 2019, 91, 247-269. (·) Understanding the behavior of group 11 emitters for the design of complexes with potential applications in medicine and material science. June 2018 EPA newsletter, 72-76. (·) Organometallics, 2018, 37, 3993-4001(*Corresponding author). (·) Chem. Sci., 2018, 9, 8000-8010. (·) Organometallics, 2018, 37, 1795?1800. (·) Eur. J. Inorg. Chem., 2018, 2762–2767. (·) Chem. Eur. J. 2018, 24, 3345-3353 (*Corresponding author) (·) Adv. Funct. Mater., 2018, 28, 1704040. (·) Inorg Chem., 2017, 56, 15159-15170. (·) Small, 2017, 13, 1700965. (·) Inorg. Chim. Acta, 2017, 460, 127–133. (*Corresponding author) (·) RSC Adv., 2016, 6, 14171-14178. (·) J Chem. Eur. J., 2016, 22, 18027 – 18035. (·) J. Mat. Chem. C, 2016, 4, 8545-8551. (·) Organometallics, 2016, 35, 1141?1150. (·) Dalton Trans., 2016, 45, 15026-15033. (·) Dalton Trans., 2015, 44, 18506-18517

2 **Employing entity:** Universidad de Zaragoza **Type of entity:** University
Department: Inoganic chemistry
Professional category: Postdoctoral Researcher
Start-End date: 08/01/2013 - 25/04/2015
Type of contract: Temporary employment contract
Performed tasks: Supervising TFG students and co-supervising TAD, Erasmus and some PhD students. Developing a new research line dealing with series of luminescent heterometallic species with applications in cell imaging and cancer therapy. Promoting the exchange of information and knowledge within the group, as well as extending the collaborations of Prof. Gimeno with her already stablished network connections CAREER BREAK: Maternity leave 28/04/2014-15/09/2014
Applicability in teaching and/or research: OUTCOMES: (·) Chem. Sci., 2014, 5, 4434-4446 (corresponding author). (·) Chem Commun, 2014, 50, 384-399 (corresponding author). (·) Dalton Trans, 2014, 43, 6212-6220 .

3 **Employing entity:** Universidad de Zaragoza **Type of entity:** University
Department: Inoganic chemistry
Professional category: Postdoctoral Researcher
Start-End date: 07/02/2011 - 26/12/2012
Type of contract: Temporary employment contract
Performed tasks: The reseacher is in charge of the organisation of the daily tasks in the laboratory. Developing and implement a new research line dealing with series of luminescent heterometallic species with applications in cell imaging and cancer therapy. Promoting the exchange of information and knowledge within the group, as well as extending the collaborations of Prof. Gimeno with her already stablished network connections.
Applicability in teaching and/or research: OUTCOMES: (·) Organometallics, 2012, 31 (16), 5950–5957

4 **Employing entity:** Trinity College Dublin **Type of entity:** University
Department: chemistry
City employing entity: Dublin, Ireland
Professional category: Postdoctoral Fellow
Start-End date: 01/09/2009 - 31/08/2010 **Duration:** 1 year
Type of contract: Temporary employment contract
Dedication regime: Full time
Primary (UNESCO code): 230318 - Metals; 230423 - Synthesis of macromolecules; 230602 - Aromatic hydrocarbons; 230603 - Benzene derivatives
Secondary (UNESCO code): 221022 - Photochemistry
Tertiary (UNESCO code): 331200 - Materials technology
Performed tasks: The reseacher continued working in the lanthanide chemistry area and dealing with a new challenge, synthetic organic chemistry. The aim of the project was the development of SMART molecules for innovative materials, for which the synthesis of highly aromatic N-doped graphenes platform was essential. In this period the applicant not only earned remarkable skills and

knowledge in supramolecular chemistry but also increased her capability of having an objective point of view for the development of future research ideas, which will be priceless to undertaker her independent carrier.
Identify key words: Luminescence spectromety (flourescence, quimio(bio) luminiscence, etc); Supramolecular organic chemistry
Applicability in teaching and/or research: OUTCOMES: (·) Dalton Trans. 2012, 41, 7746-7754.

5 **Employing entity:** École Polytechnique Fédérale de Lausanne-EPFL
Department: Chemistry
City employing entity: Lausanne, Switzerland
Professional category: Postdoctoral Fellow
Start-End date: 01/09/2008 - 31/08/2009 **Duration:** 1 year
Type of contract: Temporary employment contract
Dedication regime: Full time
Primary (UNESCO code): 230301 - Actinide chemistry; 230408 - Macromolecules; 239001 - Design. Synthesis and study new drugs
Secondary (UNESCO code): 221022 - Photochemistry; 240300 - Biochemistry; 240700 - Cell biology
Tertiary (UNESCO code): 240701 - Cell culture; 240705 - Tissue culture; 241203 - Antigen-antibody reaction; 241209 - Tissue antibodies
Performed tasks: The researcher developed a straight forward methodology to bioconjugate luminescent lanthanide helicates to a wide range of biomolecules and demonstrated they application as bioprobes for breast cancer biomakers using Lab-on-a-Chip-technologies. She complemented the luminescent knowledge acquired during the PhD by being able to study properties such as lifetimes and quantum yields. In addition to these, the applicant gained experience in performing different biological assays (ELISA assays, SDS-page electrophoresis, immunofluorescence assays, immunohystochemical assays, etc) as well as in protein purification, cell culture and lab-on-a-chip techniques. As a result, the researcher is competent to run a biological laboratory directed to cell imaging, and therefore gives her a broad scope for the merging of biology and chemistry. Moreover, she had the opportunity to actively participate, first, in the COST-D38 meeting held in Warsaw (Poland) and in 7ICfE in Cologne (Germany) where she contributed with an invited presentation.
Identify key words: Luminescence spectromety (flourescence, quimio(bio) luminiscence, etc); Lanthanum metals and acthanum metals; Therapeutics; Cell culture; Sensors for biologic applications
Applicability in teaching and/or research: OUTCOMES: (·) Analyst, 2010, 135, 42-52.

6 **Employing entity:** Cardiff university **Type of entity:** University
City employing entity: Cardiff, United Kingdom
Professional category: Laboratory Demonstrator
Start-End date: 01/10/2005 - 01/10/2007
Performed tasks: Demostrator in laboratory classes for undergraduate students of inorganic main group and coordination chemistry at all levels.

7 **Employing entity:** Universidade de Vigo **Type of entity:** University
Professional category: Associate researcher
Start-End date: 01/03/2004 - 31/12/2004
Dedication regime: Part time
Primary (UNESCO code): 230300 - Inorganic chemistry
Secondary (UNESCO code): 230108 - Infrared spectrosco; 230109 - Magnetic resonance spectroscopy
Tertiary (UNESCO code): 230120 - X-ray spectroscopy
Performed tasks: Her work concerned the preparation and characterization of Tin (IV) organoderivatives using O, S-donor ligands, and the study of their potential as antibacterial. In this period, the researcher earned remarkable skills in NMR techniques and IR spectroscopy.

Furthermore, the publication of two articles from this period demonstrates her dedication as well as ability to efficiently address a given problem at early stages of her carrier.

Applicability in teaching and/or research: OUTCOMES: (·) Eur. J. Inorg. Chem., 2005, (21), 4425-4429. (·) J. Organomet. Chem. 2006, 691(1-2), 45-52.

Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

1 **University degree:** Level 2 Certificate in English (ESOL)
Name of qualification: Certificate in Advance English (C.A.E.)
City degree awarding entity: Cardiff, East Wales, United Kingdom
Degree awarding entity: University of Cambridge-ESOL examination **Type of entity:** University
Date of qualification: 06/08/2007

2 **University degree:** Level 1 Certificate in English (ESOL)
Name of qualification: First certificate in English (F.C.E.)
City degree awarding entity: Cardiff, East Wales, United Kingdom
Degree awarding entity: University of Cambridge-ESOL examination **Type of entity:** University
Date of qualification: 07/08/2006

3 **University degree:** master
Name of qualification: Diploma de Estudios Avanzados, D.E.A. (Síntesis de organo derivados de Sn(IV). Directores: Prof. Eduardo Freijanes Rivas y Prof. Mª Delfina Couce Fortúnez)
City degree awarding entity: Vigo, Galicia, Spain
Degree awarding entity: Universidade de Vigo **Type of entity:** University
Date of qualification: 10/06/2005

4 **University degree:** grado
Name of qualification: Tesis de licenciatura (Interacción de Organoderivados de estaño (IV) con ligando O, S- Dadores) (Directores: Prof. Eduardo Freijanes Rivas y Prof. Mª Delfina Couce Fortúnez)
City degree awarding entity: Vigo, Galicia, Spain
Degree awarding entity: Universidade de Vigo **Type of entity:** University
Date of qualification: 17/12/2004
Average mark: Excellent

5 **University degree:** Higher degree
Name of qualification: Técnico superior en prevención de riesgos laborales. Especialidades: Higiene y seguridad en el trabajo
City degree awarding entity: Porriño, Galicia, Spain
Degree awarding entity: Xunta de Galicia (AIMEN)
Date of qualification: 23/09/2004

6 **University degree:** master
Name of qualification: Experto Europeo en gestión de la calidad
City degree awarding entity: Porriño (AIMEN), Galicia, Spain
Degree awarding entity: ASOCIACION ESPAÑOLA PARA LA CALIDAD
Date of qualification: 26/06/2004

7 **University degree:** Master
Name of qualification: Gestor Medioambiental
City degree awarding entity: Porriño (AIMEN), Galicia, Spain
Degree awarding entity: ASOCIACION ESPAÑOLA PARA LA CALIDAD
Date of qualification: 06/03/2004

8 **University degree:** Higher degree
Name of qualification: Licenciada en ciencias químicas-sección química fundamental-especialidad química INORGÁNICA
City degree awarding entity: Vigo, Galicia, Spain
Degree awarding entity: Universidade de Vigo **Type of entity:** University
Date of qualification: 28/08/2003

9 **University degree:** Higher degree
Name of qualification: Licenciada en ciencias químicas-sección química fundamental-especialidad química ORGÁNICA
City degree awarding entity: Vigo, Galicia, Spain
Degree awarding entity: Universidade de Vigo **Type of entity:** University
Date of qualification: 28/08/2003

Doctorates

Doctorate programme: Doctor of Philosophy
Degree awarding entity: Cardiff University **Type of entity:** University
City degree awarding entity: Cardiff, East Wales, United Kingdom
Date of degree: 28/10/2008
European doctorate: Yes
Thesis title: Synthesis of Ligand-Organic Congugates for Biological Imaging Aplications
Thesis director: Michael P. Coogan
Thesis co-director: Angelo J. Amoroso
Recognition of quality: Yes
Special doctorate award: Yes
Standardised degree: Yes

Specialised, lifelong, technical, professional and refresher training (other than formal academic and healthcare studies)

1 **Type of training:** Course
Training title: Especies metálicas y biomoléculas.Curso de experimentación en bioinorgánica
Awarding entity: Universidad de Granada **Type of entity:** University
End date: 19/10/2016 **Duration in hours:** 50 hours

2 **Training title:** Formación para Gestores de Contenidos WEB de Departamentos en Untorno Drupal Institucional
Awarding entity: Universidad de Zaragoza **Type of entity:** University
Training manager: Óscar Luis Sebastián Sevilla
End date: 30/10/2015 **Duration in hours:** 20 hours

3 **Type of training:** Course
Training title: Gestión del proceso de evaluación de riesgos y de la comunicación en materia preventiva
City awarding entity: Zaragoza,
Awarding entity: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
End date: 16/11/2012

4 **Training title:** Curso básico de manejo de espectrómetros de RMN. Nivel básico
Awarding entity: Universidad de Zaragoza **Type of entity:** University
End date: 16/11/2011

5 **Type of training:** Course
Training title: Introduction à la sécurité et manipulation des extincteurs
City awarding entity: Lausanne, Switzerland
Awarding entity: École Polytechnique Fédérale de Lausanne (EPFL)
End date: 02/09/2008

6 **Type of training:** Course
Training title: Cryogenic gases safety course
City awarding entity: Cardiff, United Kingdom
Awarding entity: Cardiff University
End date: 22/03/2005

7 **Type of training:** Course
Training title: Laboratory compressed gases safety course
City awarding entity: Cardiff, United Kingdom
Awarding entity: Cardiff University
End date: 22/03/2005

8 **Type of training:** Course
Training title: Risk assessment in concordance with COSHH regulation
City awarding entity: Cardiff, United Kingdom
Awarding entity: Cardiff University
End date: 03/02/2005

9 **Type of training:** Course
Training title: Working safely
City awarding entity: Cardiff, United Kingdom
Awarding entity: Cardiff University
End date: 02/02/2005

10 **Training title:** Analisis de vinos: parámetros clásicos
Awarding entity: Universidade de Vigo **Type of entity:** University
End date: 07/07/2003 **Duration in hours:** 40 hours

11 **Type of training:** Course
Training title: Síntesis, Propiedades e Procesado de Polímeros
City awarding entity: Vigo, Galicia, Spain
Awarding entity: Universidade de Vigo **Type of entity:** University
End date: 12/07/1999 **Duration in hours:** 70 hours

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
French		B1	A2	A2	A2
Portuguese		C1	B1	B1	B1
Spanish		C1	C1	C1	C1
Gallegan		C1	C1	C1	C1
English		C1	C1	C1	C1

Teaching experience

Experience supervising doctoral thesis and/or final year projects

1 **Project title:** Compuestos heterometálicos para imagen y terapia
Type of project: Trabajo Fin de Master
Co-director of thesis: M. C. Gimeno
Entity: Universidad de Zaragoza **Type of entity:** University
Student: Marta Redrado Domingo
Obtained qualification: sobresaliente
Date of reading: 10/07/2018

2 **Project title:** Actividad de decaborano con acridina: activación mecánica e hidrogenación
Type of project: Trabajo Fin de Grado
Co-director of thesis: R. Macías
Entity: Universidad de Zaragoza **Type of entity:** University
Student: Adrián Torguet Forradellas
Obtained qualification: sobresaliente
Date of reading: 11/07/2017

3 **Project title:** Compuestos metálicos luminiscentes para imagen y terapia
Type of project: Trabajo Fin de Grado
Co-director of thesis: M. C. Gimeno
Entity: Universidad de Zaragoza **Type of entity:** University
Student: Marta Redrado Domingo
Obtained qualification: sobresaliente
Date of reading: 11/07/2017

4 **Project title:** Complejos metálicos luminiscentes con aplicaciones en imagen y terapia
Type of project: Trabajo Fin de Grado
Entity: Universidad de Zaragoza **Type of entity:** University
Student: Héctor Sastre Martín
Obtained qualification: Sobresaliente
Date of reading: 13/07/2016
Date of award: 06/07/2016

5 **Project title:** Compuestos metálicos para bioimagen y terapia
Type of project: Trabajo Fin de Grado
Entity: Universidad de Zaragoza **Type of entity:** University
Student: Raúl Carrero Sender
Obtained qualification: Sobresaliente
Date of reading: 13/07/2016
Date of award: 06/07/2016

6 **Project title:** Compuestos luminiscentes de Re(I) con aplicaciones en bioimagen
Type of project: Trabajo Fin de Grado
Entity: Universidad de Zaragoza **Type of entity:** University
Student: Laura Rodríguez Pascual
Obtained qualification: Sobresaliente
Date of reading: 09/07/2015
Date of award: 06/07/2015

7 **Project title:** Complejos heterometalicos en bioimagen.
Type of project: Trabajo Fin de Master
Co-director of thesis: M. C. Gimeno
Entity: Universidad de Zaragoza **Type of entity:** University
Student: Andrés Luengo Barraguan
Obtained qualification: sobresaliente
Date of reading: 2015

8 **Project title:** Síntesis de complejos de oro(I) luminiscentes con derivados del indol
Type of project: Trabajo Academicamente Dirigido
Co-director of thesis: A. Laguna
Entity: Universidad de Zaragoza **Type of entity:** University
Student: Cynthia Val Campillo
Obtained qualification: Sobresaliente
Date of reading: 05/09/2014

Other activities/achievements not included above

1 **Description of the activity:** Co-supervision of Erasmus student (Alejandra Martínez, 6 months project)
Organising entity: Universidad de Zaragoza **Type of entity:** University
End date: 27/07/2016

2 **Description of the activity:** Co-Supervision of Erasmus Students (Arianna Casula, 6 months project)
Organising entity: Universidad de Zaragoza **Type of entity:** University
End date: 31/07/2013

3 **Description of the activity:** Co-Supervision of Erasmus Students (Valentina Niari, 6 months project)
Organising entity: Universidad de Zaragoza **Type of entity:** University
End date: 31/07/2013

4 **Description of the activity:** Co-supervision of Erasmus students (Francesco Caddeo, 6 months project)
Organising entity: Universidad de Zaragoza **Type of entity:** University
End date: 31/07/2012

5 **Description of the activity:** Co-supervision of Erasmus students (Francesco M. Monzittu, 6 months project)
Organising entity: Universidad de Zaragoza **Type of entity:** University
End date: 31/07/2012

6 **Description of the activity:** Co-Supervision of M. Phil. students (Jennifer E. Dunne, Jacob B. Hess and Craig Williams)
City of activity: Cardiff, United Kingdom
Organising entity: Cardiff University
End date: 31/12/2007

Most relevant contributions of your teaching CV

1 **Description:** Coordination and Development of 2 tests for assesing the reading of the Welcome Health and Safety Dossier of ISQCH
Organising entity: ISQCH
End date: 2013

2 **Description:** Coordination and Development of the Health and Safety Welcome Dossier for the ISQCH
Organising entity: ISQCH
End date: 2013

Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

1 **Name of the project:** Bifunctional Photosensitizers for Cell Imaging and Photodynamic Therapy (RTI2018-097836-J-I00)
Type of project: Research and development, including transfer
Entity where project took place: ISQCH, CSIC-Universidad de Zaragoza **Type of entity:** University Research Institute
City of entity: Zaragoza,
Name principal investigator (PI, Co-PI....): V. Fernández-Moreira
Nº of researchers: 1
Funding entity or bodies:
Ministerio de Ciencia e Innovación. Universidades **Type of entity:** public
City funding entity: Madrid, Community of Madrid, Spain

Type of participation: Principal investigator
Start-End date: 16/09/2019 - 15/09/2022 **Duration:** 3 years
Total amount: 181.500 €
Dedication regime: Full time
Applicant's contribution: PI of the project

2 **Name of the project:** Oro y Plata. Ref. E07_17R. Grupo de Excelencia
Entity where project took place: Instituto de Síntesis Química y Catálisis Homogénea, Universidad de Zaragoza **Type of entity:** State agency
City of entity: Zaragoza, Aragon, Spain
Nº of researchers: 16
Funding entity or bodies:
Diputación General de Aragón **Type of entity:** diputacion
City funding entity: Zaragoza, Aragon, Spain

Start-End date: 01/01/2017 - 31/12/2019
Total amount: 41.770 €

3 **Name of the project:** Aplicaciones de Compuestos de Oro en Fotofísica, Medicina y Catálisis CTQ2016-75816-C2-1-P
Entity where project took place: ISQCH, CSIC-Universidad de Zaragoza **Type of entity:** University Research Institute
City of entity: Zaragoza, Aragon, Spain
Name principal investigator (PI, Co-PI....): M. C. Gimeno
Nº of researchers: 11
Funding entity or bodies:
Ministerio de Economía y Competitividad **Type of entity:** Public Research Body

Start-End date: 30/12/2016 - 29/12/2019
Total amount: 180.290 €

4 **Name of the project:** Metales en terapia y diagnostico CTQ2015-70371-REDT
Name principal investigator (PI, Co-PI....): Patrick Gamez Enamorado; Maria Concepción Gimeno Floria; Adoracion Gomez Quiroga; Jose manuel Dominguez Vera; Javier García Tojal; Juan Manuel Salas Peregrin; Rosa Pedrido Castiñeiras; Silvia Atrian Ventura; María Mercè Capdevila Vidal
Nº of researchers: 10
Start-End date: 01/12/2015 - 31/12/2017
Total amount: 30.000 €
Applicant's contribution: Settling the collaboration and network among my host group (PI Concepción Gimeno Floría) and Patrick Gamez Enamorado (PI of the proyect CTQ2015-70371-REDT)

5 **Name of the project:** Química de oro y plata. Grupo Consolidado.
Entity where project took place: Instituto de Síntesis Química y Catálisis Homogénea, Universidad de Zaragoza **Type of entity:** State agency
City of entity: zaragoza, Aragon, Spain
Nº of researchers: 11
Funding entity or bodies:
Diputación General de Aragón **Type of entity:** diputacion
City funding entity: Zaragoza, Aragon, Spain

Start-End date: 01/01/2016 - 31/12/2016
Total amount: 4.816 €

6 **Name of the project:** Nuevas Estrategias para la Síntesis Orientada de Complejos del Grupo 11 con Aplicación Óptica, Biológica y Catalítica.
Entity where project took place: Universidad de Zaragoza **Type of entity:** University
Name principal investigator (PI, Co-PI....): M. C. Gimeno

Funding entity or bodies:
Ministerio de Economia y Competitividad. (CTQ2013-48635-C2-1-P).

Start-End date: 01/01/2014 - 31/12/2016
Total amount: 192.000 €

7 **Name of the project:** Bandeja Activa para la Conservación del Alimento.
Degree of contribution: Researcher
Entity where project took place: Universidad de Zaragoza **Type of entity:** University
City of entity: Zaragoza, Aragon, Spain
Name principal investigator (PI, Co-PI....): M. C. Gimeno; Videcart S.A.
Nº of researchers: 4
Type of participation: Team member
Name of the programme: INNPACTO
Code according to the funding entity: (IPT-2012-0067-060000)
Start-End date: 01/01/2013 - 31/12/2014 **Duration:** 2 years
Total amount: 160.870,56 € **Sub-project amount:** 160.870,56 €

8 **Name of the project:** Química de oro y plata. Grupo Consolidado.
Entity where project took place: Universidad de Zaragoza **Type of entity:** University
City of entity: Zaragoza, Aragon, Spain
Name principal investigator (PI, Co-PI....): A. Laguna
Nº of researchers: 10
Start-End date: 01/01/2013 - 31/12/2013
Total amount: 5.617,5 €

9 **Name of the project:** Diseño de compuestos del grupo 11 para aplicaciones ópticas, biológicas y catalíticas
Type of project: Research and development, including transfer
Degree of contribution: Researcher
Entity where project took place: Universidad de Zaragoza, Instituto de Ciencia de Materiales de Aragón
City of entity: Zaragoza, Aragon, Spain
Name principal investigator (PI, Co-PI....): M. C. Gimeno
Nº of researchers: 13
Funding entity or bodies:
Ministerio de Ciencia e Innovación **Type of entity:** Body, others

Code according to the funding entity: D.G.I. (CTQ2010-20500-C02-01)
Start-End date: 01/01/2010 - 31/12/2012
Total amount: 262.570 €

10 **Name of the project:** SMART molecules for innovative materials
Type of project: Research and development, including transfer **Geographical area:** European Union
Degree of contribution: Researcher
Entity where project took place: Trinity College Dublin **Type of entity:** University
City of entity: Dublin, Ireland
Name principal investigator (PI, Co-PI....): Sylvia M Draper
Funding entity or bodies:
European comission: Marie curie transfer of knowledge

Name of the programme: Marie-Curie ToK
Code according to the funding entity: FP6 -14472
Start-End date: 01/09/2009 - 31/08/2010

11 **Name of the project:** Metal-based systems for molecular Imaging applications
Type of project: Research and development, including transfer **Geographical area:** European Union
Degree of contribution: Researcher
Entity where project took place: EPFL-ecole politechnique de Lausanne
City of entity: Lausanne, Switzerland
Name principal investigator (PI, Co-PI....): A-S Chauvin; J-C Bünzli
Funding entity or bodies:
European Science Fundation

Name of the programme: Swiss Office for Science and Education (within the frame of COST Action D38)
Code according to the funding entity: C07.0116
Start-End date: 01/09/2008 - 31/08/2009

12 **Name of the project:** Synthesis of polydentate ligands for biological and MRI applications
Type of project: Research and development, including transfer
Degree of contribution: Researcher
Entity where project took place: Cardiff university
City of entity: Cardiff, United Kingdom
Name principal investigator (PI, Co-PI....): M. P. Coogan
Funding entity or bodies:
UK goverment (Engineering and Physical Sciences Research Council)

Name of the programme: EPSRC LSI
Code according to the funding entity: (EP/D080401/1)
Start date: 2005
Relevant results: Chem. Commun., 2007, 3066- 3068

Results

Technological results derived from specialized and transfer activities, not included in previous sections

Description: Ximbio (a website created to enable the sharing of research tools within the global life science community) advertises 2 complexes developed within the frame of my PhD thesis (Chem. Commun., 2011, 47, 3096–3098, Angew. Chem. Int. Ed. 2009, 48, 4965 –4968, New J. Chem., 2008, 32, 1097–1102)
Name of the principal Investigator (PI): M. P. Coogan
Relevant results:
https://ximbio.com/reagent/152786/nucleolar-luminophore-ag-1-small-molecule-tool-compound
https://ximbio.com/reagent/152785/mitochondrial-luminophore-small-molecule-tool-compound

Scientific and technological activities

Scientific production

H index: 16
Date of application: 25/04/2019

Publications, scientific and technical documents

1 J. Conesa-Egea; A. Moreno Vázquez; F. Fernández-Moreira; Y. Ballesteros; M. Castellanos; F. Zamora; P. Amo-Ochoa*. Micro and Nano Smart Composite Films Based on Copper-Iodine Coordination Polymer as Thermochromic Biocompatible Sensors. Polymers. 11, pp. 1047 - 1061. MDPI, 15/06/2019.

Type of production: Scientific paper **Format:** Journal

2 J. Troyano; E. Zapata; J. Perles; P. Amo-Ochoa; V. Fernández-Moreira; J. I. Martínez; F. Zamora*; S. Delgado*. Multifunctional Cu(I) Coordination Polymers with Aromatic Mono- and Ditopic Thioamides.Inorganic Chemistry. 58, pp. 3290 - 3301. ACS, 12/02/2019.

Type of production: Scientific paper **Format:** Journal

Impact source: ISI **Category:** Science Edition - CHEMISTRY, INORGANIC & NUCLEAR

Impact index in year of publication: **Journal in the top 25%:** Yes

Position of publication: 5 **No. of journals in the cat.:** 47

Relevant results: Direct reactions under ambient conditions between CuX (X = Br, I) and thiobenzamide (TBA) were carried out at different ratios, giving rise to the formation of a series of one-dimensional (1D) coordination polymers, (CPs) [CuI(TBA)]n (1), [Cu3I3(TBA)2]n (4), and [CuBr(TBA)]n (5), as well as two molecular complexes, [CuI(TBA)3] (2) and [Cu2I2(TBA)4]·2MeCN (3). Recrystallization of 1 and 5 yielded a series of isostructural 1D CP solvated species, [CuI(TBA)·S]n]n (1·S; S = tetrahydrofuran, acetone, methanol) and [CuBr(TBA)·S]n (5·S; S = tetrahydrofuran, acetone), respectively. Similar reactions between CuI and 1,4-dithiobenzamide (DTBA) allowed the isolation of a series of twodimensional (2D) CPs [CuI(DTBA)·S]n (6·S; S = N,N-dimethylformamide, acetonitrile, methanol). Interestingly, 1·S and 5·S showed variable luminescence and electrical semiconductivity depending on the different solvents located in their structures. Thus, 1 and 5 could display potential application for sensing volatile organic vapors by virtue of the significant changes in their emission upon solvent exposure, even by the naked eye. Theoretical calculations have been used to rationalize these electronic properties.

3 V. Fernández-Moreira*; C. Val-Campillo; I. Ospino; R. P. Herrera; I. Marzo; A. Laguna; M. C. Gimeno*. Bioactive and luminescent indole and isatin based gold(I) derivatives. Dalton Trans. 48, pp. 3098 - 3108. RSC, 08/02/2019.

Type of production: Scientific paper **Format:** Journal

Corresponding author: Yes

Impact source: Web of science **Category:** Science Edition - CHEMISTRY, INORGANIC & NUCLEAR

Impact index in year of publication: 4.099 **Journal in the top 25%:** Yes

Position of publication: 6 **No. of journals in the cat.:** 45

Relevant results: A series of luminescent monometallic [AuL(PPh3)] (1–3) and bimetallic [Au2(?-dppe)L2] (4, 6, 8) and [Au2(?-dppp)L2] (5, 7, 9) complexes, where L is either 4-cyano-indole, isatin, or 5,7-dimethyl-isatin, and dppe and dppp are 1,2-bis(diphenylphosphino)ethane and 1,3-bis(diphenylphosphino)propane, respectively, have been synthesised. X-ray diffraction confirmed the tendency to establish aurophillic interations for those complexes containing dppe. Luminescence studies and theoretical calculations revealed a different origin for both families, i.e. indole and isatin species. Thus, indole derivatives presented a ligandto- ligand-charge-transfer transition

(LLCT) from the indole to the PPh3 fragment, whereas for the isatin derivatives an intraligand–charge-transfer transition (ILCT) within the isatin fragment is proposed. In both cases, the gold centre was slightly implicated as a ligand-to-metal-charge transfer transition (LMCT) (from the indole/isatin to Au(I)). Cell antiproliferative assays in lung cancer cells (A549), leukemia JurkatpLVTHM and Jurkat-shBak cells (cisplatin sensitive and resistant, respectively) showed excellent cytotoxic values (10.11–0.28 ?M), showing the leukemia cells to be the most sensitive and the bimetallic species to be the most active agents. Preliminary studies associated the cytotoxicity with a combination of different factors, the metallic fragment being mainly responsible. Remarkably, these complexes are able to inhibit the cellular growth of cisplatin resistant Jurkat-shBak cells highlighting their promising future as an alternative anticancer agent.

4 V. Fernandez-Moreira; R. P. Herrera; M.C. Gimeno*. Anticancer properties of gold complexes with biologically relevant ligands. Pure and Applied Chemistry. 91 - 2, pp. 247 - 269. Walter de Gruyter, 30/11/2018.

Type of production: Scientific paper
Format: Journal
Impact source: Web of science
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 5.294
Journal in the top 25%: Yes
Position of publication: 36
No. of journals in the cat.: 171

Relevant results: The present review highlights our findings in the field of antitumor gold complexes bearing biologically relevant molecules, such as DNA-bases, amino acids or peptide derivatives. The results show that very active complexes are achieved with this sort of ligands in several cancer cells. In these compounds the gold center is bonded to these biological molecules mainly through a sulfur atom belonging to a cysteine moiety or to a thionicotinic moiety as result of the functionalization of the biological compounds, and additionally phosphines or N-heterocyclic carbenes are present as ancillary ligands. These robust compounds are stable in the biological media and can be transported to their targets without previous deactivation. The presence of these scaffolds represents a good approach to obtain complexes with improved biologically activity, better transport and biodistribution to cancer cells. Thioredoxin reductase (TrxR) has been shown as the main target for these complexes and in some cases, DNA interactions has been also observed.

5 A. Luengo; V. Ferna?ndez-Moreira*; I. Marzo; M. C. Gimeno*. Bioactive Heterobimetallic Re(I)/Au(I) Complexes Containing Bidentate N?Heterocyclic Carbenes. Organometallics. 37, pp. 3993 - 4001. ACS, 15/10/2018.

Type of production: Scientific paper
Format: Journal
Position of signature: 2
Degree of contribution: Author or co-author of article in journal with external admissions assessment committee
Total no. authors: 4
Corresponding author: Yes
Impact source: ISI
Category: Science Edition - CHEMISTRY, INORGANIC & NUCLEAR
Impact index in year of publication: 4.051
Journal in the top 25%: Yes
Position of publication: 7
No. of journals in the cat.: 45

Relevant results: The first cationic heterobimetallic complexes of the type fac-[Re(CO)3(NHC)(LAuPPh3)]+, where NHC is an imidazole pyridinebased carbene and L is 3-pyridylalkyne, 4-pyridylalkyne, or 5-ethynyl-1-methyl-1H-imidazole, have been synthesized together with their Re(I) precursors. All of them have showed similar emissive properties resulting from the presence of the NHC system within the Re(I) core. Thus, emission can be ascribed to a phosphorescent process with a mixture of a MLCT from the Re(d?) ? NHC(?*), LLCT from the imidazolyl/pyridyl to the NHC ligand, and LC (NHC derivative) transitions. In all cases, the emission maximum is blue-shifted in comparison with that observed in the typical diimine-Re(I) systems. Only the heterobimetallic species displayed antiproliferative activity against tumor lung A549 cells, which was increased after irradiation at 405 nm up to nearly 5 times for complexes 4 and 5. A necrotic process seems to be the preferred cell death mechanism. Fluorescence microscopy showed that only heterobimetallic complexes 4 and 5 were suitable for cell visualization. Their biodistribution pattern reveals accumulation within the cytoplasm close to the nucleus and some nucleus permeation. Overall it can be suggested that, whereas the emissive properties are dominated by the NHC-Re(I) fragment, the anticancer activity is mainly dependent on the Au(I) counterpart.

6 J. Conesa-Egea; N. Nogal; C. J. Gómez-García,; V. Fernández-Moreira; U. R. Rodríguez-Mendoza; J. González-Platas; J. I. Martínez; S. Delgado; F. Zamora*; P. Amo-Ochoa*. Smart composite films of nanometric thickness based on copper–iodine coordination polymers. Toward sensors. Chemical Science. 9, pp. 8000 - 8010. RSC, 23/08/2018.

Type of production: Scientific paper
Format: Journal
Position of signature: 4
Total no. authors: 10
Impact source: ISI
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 9.063
Journal in the top 25%: Yes
Position of publication: 18
No. of journals in the cat.: 171

Relevant results: One-pot reactions between CuI and methyl or methyl 2-amino-isonicotinate give rise to the formation of two coordination polymers (CPs) based on double zig–zag Cu2I2 chains. The presence of a NH2 group in the isonicotinate ligand produces different supramolecular interactions affecting the Cu–Cu distances and symmetry of the Cu2I2 chains. These structural variations significantly modulate their physical properties. Thus, both CPs are semiconductors and also show reversible thermo/mechanoluminescence. X-ray diffraction studies carried out under different temperature and pressure conditions in combination with theoretical calculations have been used to rationalize the multi-stimuli-responsive properties. Importantly, a bottom-up procedure based on fast precipitation leads to nanofibers of both CPs. The dimensions of these nanofibres enable the preparation of thermo/mechanochromic film composites with polyvinylidene difluoride. These films are tens of nanometers in thickness while being centimeters in length, representing smaller thicknesses so far reported for thin-film composites. This nanomaterial integration of CPs could represent a source of alternative nanomaterials for opto-electronic device fabrication.

7 A. Gutiérrez-Blanco; V. Fernández-Moreira; M. C. Gimeno; E. Peris; M. Poyatos*. Tetra-Au(I) Complexes Bearing a Pyrene Tetraalkynyl Connector Behave as Fluorescence Torches. Organometallics. 37, pp. 1795 - 1800. ACS, 29/05/2018.

Type of production: Scientific paper
Format: Journal
Position of signature: 2
Degree of contribution: Author or co-author of article in journal with external admissions assessment committee
Total no. authors: 5
Corresponding author: No
Impact source: ISI
Category: Science Edition - CHEMISTRY, INORGANIC & NUCLEAR
Impact index in year of publication: 4.051
Journal in the top 25%: Yes
Position of publication: 7
No. of journals in the cat.: 45
Source of citations: SCOPUS
Citations: 1

Relevant results: A pyrene tetraalkynyl ligand has been used for the preparation of three different tetraalkynyl Au(I) complexes. Two of these complexes display fluorescent emission in CH2Cl2 solution, with quantum yields exceeding 90%. Although the emission is mainly due to ligand-centered excited states, the presence of the metal center is key to reaching such excellent quantum yield values, providing an extra rigidity to the system and therefore, minimizing the nonradiative deactivation pathways. To the best of our knowledge, these quantum yields lie among the highest reported for metal-based luminophores in solution, a quality that makes them resemble molecular torches. Preliminary studies on healthy cheek cells show that one of the complexes is efficiently and rapidly taken up into the cell.

8 M. C. Blanco*; J. Cámara; V. Fernández-Moreira; A. Laguna; M. C. Gimeno*. Gold(I), phosphanes and alkynyls: perfect allies for searching luminescent derivatives. Eur. J. Inorg. Chem.24, pp. 2762 - 2767. wiley, 26/01/2018.

Type of production: Scientific paper
Format: Journal
Position of signature: 3
Total no. authors: 5
Corresponding author: No
Impact source: ISI
Category: Science Edition - CHEMISTRY, INORGANIC & NUCLEAR

Impact index in year of publication: 2.507
Journal in the top 25%: No
Position of publication: 14
No. of journals in the cat.: 45

Relevant results: A family of mixed phosphane/alkynyl gold(I) complexes was prepared by addition of PPh3 or PPh2py to suspensions of the polymeric species [Au(C?CR)n] [R = Ph, 2?pyridyl (py)] and [Au2{C?C(CH2)3C?C}]n. The resulting complexes are luminescent both at room and low temperature, in solution and in the solid state. The emissions are assigned to intraligand transitions associated with the C?C moieties or related to 3[?(Au–P)??*(C?Cpy)] transitions. The crystal structure of dinuclear complex [Au2{C?C(CH2)3C?C}(PPh2py)2] shows the presence of dimers stabilized by intermolecular aurophilic interactions.

9 V. Fernández-Moreira*; M. C. Gimeno*. Heterobimetallic complexes for theranostic applications. Chem. Eur. J.24, pp. 3345 - 3353. wiley, 15/01/2018.

Type of production: Scientific paper
Format: Journal
Position of signature: 1
Total no. authors: 2
Corresponding author: Yes
Impact source: ISI
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 5.16
Journal in the top 25%: Yes
Position of publication: 37
No. of journals in the cat.: 171

Source of citations: SCOPUS
Citations: 5

Relevant results: Concept Article invited by Chemistry A European Journal to introduce the concept of heterometallic complexes as theranostic agents, which is the main topic of the research line of V. Fernandez-Moreira ABSTRACT: The design of more efficient anticancer drugs requires a deeper understanding of their biodistribution and mechanism of action. Cell imaging agents could help to gain insight into biological processes and, consequently, the best strategy for attaining suitable scaffolds in which both biological and imaging properties are maximized. A new concept arises in this field that is the combination of two metal fragments as collaborative partners to provide the precise emissive properties to visualize the cell as well as the optimum cytotoxic activity to build more potent and selective chemotherapeutic agents.

10 J. Troyano; O. Castillo; J. I. Martínez; V. Fernández-Moreira; D. Maspoch*; F. Zamora*; S. Delgado*. Reversible thermochromic polymeric thin-films made of ultrathin two-dimensional crystals of coordination polymers based on copper(I)-thiophenolates. Advance Funtional Materials. pp. 1704040. wiley-VCH, 11/12/2017.

Type of production: Scientific paper
Format: Journal
Position of signature: 4
Degree of contribution: Author or co-author of article in journal with external admissions assessment committee
Total no. authors: 7
Corresponding author: No
Impact source: SCOPUS
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 13.325
Journal in the top 25%: Yes
Position of publication: 11
No. of journals in the cat.: 171

Source of citations: SCOPUS
Citations: 10

Relevant results: A one?pot reaction between Cu(BF4)2·xH2O and 4?mercaptobenzoic acid in acetone or methanol gives rise to the formation of lamellar microcrystals of two Cu(I)?thiophenolate?based coordination polymers (CPs) with the formulas [CuCT] n (1) (CT = 4?carboxy?thiophenolate) and [CuMCT]n (2) (MCT = 4?methoxycarbonyl?thiophenolate). Both 1 and 2 show a reversible luminescent thermochromic behavior upon cooling, changing their color from pale yellow to green to orange in the case of 1, and from pale orange to green in the case of 2. It is shown that the lamellar character of these crystals, which exhibit micrometer lateral dimensions and sub?micrometer/nanometer thicknesses, allows processing them with an organic polymer such as polyvinylidene difluoride (PVDF) to form thermochromic 1@PVDF and 2@PVDF thin films. These thermal stimuli?responsive thin films are freestanding, free of macroscopic defects, and robust under mechanical bending stress, opening up the possibility to use them in, for example, 2D imaging sensor films.

11 A. Luengo; V. Ferna?ndez-Moreira*; I. Marzo; M. C. Gimeno*. Trackable Metallodrugs Combining Luminescent Re(I) and Bioactive Au(I) Fragments. Inorganic Chemistry. 56, pp. 15159 - 15170. 29/09/2017.

Type of production: Scientific paper
Format: Journal
Position of signature: 2
Total no. authors: 4
Corresponding author: Yes
Impact source: SCOPUS
Category: Science Edition - CHEMISTRY, INORGANIC & NUCLEAR
Impact index in year of publication: 4.7
Journal in the top 25%: Yes
Position of publication: 5
No. of journals in the cat.: 47
Source of citations: SCOPUS
Citations: 11

Relevant results: Hetero-bimetallic and -trimetallic complexes were synthesized by the combination of different metallic fragments, a luminescent Re(I) species, and a bioactive Au(I) derivative. A ditopic P,N-donor ligand (L) was used as linker between both metals, affording six new bipyridine (bipy) Re(I)/Au(I) hetero-metallic complexes of the type fac- [Re(bipy)(CO)3(LAuCl)]+ (4?6) and [(fac-[Re(bipy)(CO)3(L)])2Au]3+ (7?9) after a thorough synthetic procedure. Their emission is associated with a triplet metal-to-ligand charge transfer (Re(d?) ? bipy(? *)) transition and red-shifted in polar solvents with lifetimes in the range of nanoseconds and quantum yield values up to 12.5%. Cytotoxicity values in A549 cells of hetero-trimetallic species are almost twice that for the heterobimetallic (ca. 37 vs 69 ?M, respectively), being the L-Au fragment the source of the antiproliferative activity. Species 7 and 8 showed similar behavior by fluorescence microscopy, with a nonuniform cytoplasmatic distribution, a clear accumulation in single spots at the edge of the inner cell membrane as well as in areas within the nucleus. Preliminary studies suggest the DNA as one of the targets and passive diffusion as the entrance pathway.

12 J. Conesa-Egea; J. Gallardo-Martínez; S. Delgado; J. I. Martínez; J. Gonzalez-Platas; V. Fernández-Moreira; R. Rodríguez-Mendoza; P. Ocón; F. Zamora*; P. Amo-Ochoa*. Multistimuli Response Micro- and Nanolayers of a Coordination Polymer Based on Cu2I2 Chains Linked by 2-Aminopyrazine. Small. pp. 1700965. wiley, 10/07/2017.

Type of production: Scientific paper
Format: Journal
Position of signature: 6
Total no. authors: 10
Corresponding author: No
Impact source: ISI
Category: Science Edition - MATERIALS SCIENCE, MULTIDISCIPLINARY
Impact index in year of publication: 9.598
Journal in the top 25%: Yes
Position of publication: 22
No. of journals in the cat.: 285

Impact source: SCOPUS
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 9.598
Journal in the top 25%: Yes
Position of publication: 17
No. of journals in the cat.: 171

Source of citations: SCOPUS
Citations: 13

Relevant results: A nonporous laminar coordination polymer of formula [Cu2I2(2?aminopyrazine)]n is prepared by direct reaction between CuI and 2?aminopyrazine, two industrially available building blocks. The fine tuning of the reaction conditions allows obtaining [Cu2I2(2?aminopyrazine)]n in micrometric and nanometric sizes with same structure and composition. Interestingly, both materials show similar reversible thermo? and pressure? luminescent response as well as reversible electrical response to volatile organic solvents such as acetic acid. X?ray diffraction studies under different conditions, temperatures and pressures, in combination with theoretical calculations allow rationalizing the physical properties of this compound and its changes under physical stimuli. Thus, the emission dramatically increases when lowering the temperature, while an enhancement of the pressure produces a decrease in the emission intensity. These observations emerge as a direct consequence of the high structural flexibility of the Cu2I2 chains which undergo a contraction in Cu?Cu distances as far as temperature decreases or pressure increases. However, the strong structural changes observed under high pressure lead to an unexpected effect that produces a less effective Cu?Cu orbital overlapping that justifies the decrease in the intensity emission. This work shows the high potential of materials based on Cu2I2 chains for new applications.

13 J. Troyano; J. Perles; P. Amo-Ochoa; J. Ignacio MArtínez; M. C. Gimeno; V.; F.; S.Luminescent Thermochromism of 2D Coordination Polymers Based on Copper(I) Halides with 4-Hydroxythiophenol. Chemistry A European Journal. 10.1002/chem.2016036, 03/11/2016.

Type of production: Scientific paper
Format: Journal
Position of signature: 6
Total no. authors: 8

Impact source: SCOPUS
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 5.317
Journal in the top 25%: Yes
Position of publication: 37
No. of journals in the cat.: 171

Source of citations: SCOPUS
Citations: 16

Relevant results: Solvothermal reactions between copper(I) halides and 4?mercaptophenol give rise to the formation of three coordination polymers with general formula [Cu3X(HT)2]n (X=Cl, 1; Br, 2; and I, 3). The structures of these coordination polymers have been determined by X?ray diffraction at both room? and low temperature (110?K), showing a general shortening in Cu?S, Cu?X and Cu?Cu bond lengths at low temperatures. 1 and 2 are isostructural, consisting of layers in which the halogen ligands act as ?3?bridges joining two Cu1 and one Cu2 atoms whereas in 3 the iodine ligands is as ?4?mode but the layers are quasi?isostructural with 1 or 2. These compounds show a reversible thermochromic luminescence, with strong orange emission for 1 and 2, but weaker for 3 at room temperature, whereas upon cooling at 77?K 1 and 2 show stronger yellow emission, and 3 displays stronger green emission. DFT calculations have been used to rationalize these observations. These results suggest a high potential for this novel and promising stimuli?responsive materials.

14 J. Troyano; O. Castrillo; P. Amo-Ochoa; V. Fernández-Moreira; C. J. Gómez-García; F. Zamora*; S. Delgado*. A crystalline and free-standing silver thiocarboxylate thin-film showing high green to yellow luminescence. Journal of Material Chemistry C. 4, pp. 8545 - 8551. RSC, 16/08/2016.

Type of production: Scientific paper
Format: Journal
Position of signature: 4
Total no. authors: 7

Impact source: journal
Impact index in year of publication: 5.066-2015

Impact source: ISI
Category: Science Edition - MATERIALS SCIENCE, MULTIDISCIPLINARY
Impact index in year of publication: 5.256
Journal in the top 25%: Yes
Position of publication: 42
No. of journals in the cat.: 285

Source of citations: SCOPUS
Citations: 4

Relevant results: The simple direct synthesis of Cu(II) and Ag(I) salts and thiobenzoic acid under ambient conditions allows the preparation of two bidimensional coordination polymers [M(TB)]n (TB = thiobenzoate; M = Cu (1) or Ag (2)). Their electrical and luminescent properties show that these are multifunctional materials. Interestingly 1 and 2 undergo a reversible solubilization process. This unusual feature and their simple preparation allow us to prepare a crystalline and free-standing thin-film of 2, using an interfacial procedure, which shows a remarkable thermochromic luminescence.

15 R. Visbal; V. Fernández-Moreira; I. Marzo; A. Laguna; M. C. Gimeno*. Cytotoxicity and biodistribution studies of luminescent Au(I) and Ag(I) N-heterocyclic carbenes. Searching for new biological targets. Dalton Transactions. 45, pp. 15026 - 15033. RSC, 08/08/2016.

Type of production: Scientific paper
Format: Journal
Position of signature: 2
Total no. authors: 5

Impact source: ISI
Category: Science Edition - CHEMISTRY, INORGANIC & NUCLEAR
Impact index in year of publication: 4.029
Journal in the top 25%: Yes

Position of publication: 6 **No. of journals in the cat.:** 45

Source of citations: SCOPUS **Citations:** 18

Relevant results: A range of fluorescent and biologically compatible gold(I)–N-heterocyclic carbenes bearing acridine as a wingtip group and either a 2-mercaptopyridine or a tetra-O-acetyl-1-thio-?-D-glucopyranoside as an ancillary ligand has been synthesised. Their luminescence, cytotoxicity and biodistribution have been investigated together with those of analogous gold(I) and silver(I) chloride- and bis-NHC complexes. All complexes displayed emissions based on IL transitions centred on the acridine moiety. The cytotoxic activity measured in lung, A549, and pancreatic, MiaPaca2, carcinoma cell lines revealed a general cytotoxicity pattern (thiolate > biscarbene > chloride derivatives) and flow cytometry assays pointed towards apoptosis as the cell death mechanism. Moreover, fluorescence cell microscopy disclosed an unusual biodistribution behavior, being mainly localised in lysosomes and to a lesser extent in the nucleus. Preliminary DNA interaction experiments suggested the metal fragment and not the acridine moiety as responsible for such biodistribution, which widen the scope for new biological targets.

16 V. Fernández-Moreira*; H. Sastre-Martín. Photophysical and bioactivity behavior of fac-Rhenium(I) derivatives containing ditopic sulfurpyridine ligands. Inorganica Chimica Acta. 460, pp. 127 - 133. Elsevier, 22/07/2016.

Type of production: Scientific paper **Format:** Journal

Position of signature: 1

Total no. authors: 2 **Corresponding author:** Yes

Impact source: ISI **Category:** Science Edition - CHEMISTRY, INORGANIC & NUCLEAR

Impact index in year of publication: 2.264 **Journal in the top 25%:** No

Position of publication: 16 **No. of journals in the cat.:** 45

Source of citations: WOS **Citations:** 5

Relevant results: Luminescent fac-rhenium(I) derivatives have proven their great potential as cell imaging agents. However, there is still a lack of information regarding the structure-bioactivity and biodistribution relationship specially in those cases where the axial ligand is a S-donor ligand. Therefore, the complexes described in here are the first [Re(bipy)(CO)3L]0/+ examples, where L are S-donor ditopic thiol/thione-pyridine derivatives, investigated as cell imaging agent.

17 V. Fernandez-Moreira; J. Cámara; E. S. Smirnova; I. O. Koshevoy; A. Laguna; S. P. Tunik; M. C. Blanco*; M. C. Gimeno*. Tuning the Energy Emission from Violet to Yellow with Bidentate Phosphine Gold(III) Complexes. Organometallics. 35, pp. 1141 - 1150. ACS, 06/04/2016.

Type of production: Scientific paper **Format:** Journal

Position of signature: 1

Total no. authors: 8

Impact source: ISI **Category:** Science Edition - CHEMISTRY, ORGANIC

Impact index in year of publication: 3.862 **Journal in the top 25%:** Yes

Position of publication: 11 **No. of journals in the cat.:** 57

Impact source: ISI **Category:** Science Edition - CHEMISTRY, INORGANIC & NUCLEAR

Impact index in year of publication: 3.894 **Journal in the top 25%:** Yes

Position of publication: 7 **No. of journals in the cat.:** 45

Source of citations: SCOPUS **Citations:** 12

Relevant results: The synthesis and characterization of luminescent gold(III) compounds, obtained by coordination of the metal center to different phosphines, is described. To avoid deactivation of luminescence by the presence of low-energy d?d ligand field states in the gold(III) center, the ligands bonded to the metallic center have been carefully chosen, among which we used bidentate phosphines with different numbers of phenylene or alkynyl-phenylene spacers and pentafluorophenyl groups. The reaction of [Au(C6F5)3(tht)] (tht = tetrahydrothiophene) with the corresponding diphosphines gave the complexes [{Au(C6F5) 3}2(1,4-PPh2(C6H4)nPPh2)] (n = 1?3) and [{Au(C6F5)3}2(PPh2C?C(C6H4)nC?CPPh2)] (n = 0?2). The study of

their optical behavior reveals emission color variations from violet to yellow for the compounds containing the phosphines with one, two, and three phenylene spacers, respectively, and much more fine-tuning, from deep blue to brilliant blue for those intercalating alkynyl and phenylene spacers. Four of the new complexes were also characterized by X-ray diffraction crystallography, showing supramolecular structures formed through hydrogen bonding.

18 V. Fernández-Moreira; J. V. Alegre-Requena; R. P. Herrera*; I. Marzo; M.C. Gimeno*. Synthesis of luminescent squaramide monoesters: cytotoxicity and cell imaging studies in HeLa cells. RCS Advances. 6, pp. 14171 - 14178. RSC, 22/01/2016.

Type of production: Scientific paper
Position of signature: 1
Total no. authors: 5

Impact source: SCOPUS
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 3.108
Journal in the top 25%: No
Position of publication: 71
No. of journals in the cat.: 171

Source of citations: SCOPUS
Citations: 8

Relevant results: Novel luminescent squaramide monoesters functionalised with different fluorophore groups have been synthesised and explored in cell imaging for the first time. Cytotoxicity studies performed in HeLa cervical cancer cells revealed high activity for some of these novel structures, highlighting the importance of the fluorescent fragment in the efficiency of these promising anticancer agents. In addition, fluorescence cell microscopy disclosed the different biodistribution behaviour depending on the fluorescent moiety, and the possibility of nuclear localisation of chiral non planar squaramide monoesters.

19 A. Capsula; V. Niari; V. Fernández-Moreira*; A. Laguna; V. Lippolis*; A. Garau; M. C. Gimeno*. Re(I) derivatives functionalised with thioether crowns containing the 1,10-phenanthroline subunit as a new class of chemosensors. Dalton Transactions. 44, pp. 18506 - 18517. RSC, 21/09/2015.

Type of production: Scientific paper
Position of signature: 3
Total no. authors: 7
Corresponding author: Yes

Impact source: ISI
Category: Science Edition - CHEMISTRY, INORGANIC & NUCLEAR
Impact index in year of publication: 4.177
Journal in the top 25%: Yes
Position of publication: 6
No. of journals in the cat.: 45

Source of citations: SCOPUS
Citations: 7

Relevant results: A series of luminescent fac-[Re(CO)3(L)(NN)]+ complexes, where L is a pyridine or an imidazole and NN is the 1,10-phenanthroline subunit of mixed donor pentadentate thioether crowns have been synthesised and their luminescence properties have been analysed. Then, heterometallic Re(I)/Au(I) complexes, with the Au(I) fragment bonded directly to the imidazole ligand, and heterometallic Re(I)/Ag(I) complexes, with the silver fragment coordinating the S-donor thioether linker of the rings have also been prepared. Analysis of their luminescence properties showed a considerable blue shift of the emission maxima for the Re(I)/Ag(I) derivatives, upon coordination of the silver centre to the S-donor atoms of the aliphatic chain of the macrocyclic units.

20 F. Caddeo; V. Fernández-Moreira; M. Arca; A. Laguna; V. Lippolis*; M.C. Gimeno*. Gold thione complexes. Inorganics. 2 - 3, pp. 424 - 432. 04/08/2014.

Type of production: Scientific paper
Format: Scientific and technical document or report
Position of signature: 2
Total no. authors: 6

Relevant results: ABSTRACT: The reaction of the ligand Et4todit (4,5,6,7-Tetrathiocino-[1,2-b:3,4-b']-diimidazolyl-1,3,8,10-tetraethyl-2,9-dithione) with gold complexes leads to the dinuclear gold(I) complexes [{Au(C6F5)}2(Et4todit)] and [Au(Et4todit)]2(OTf)2, which do not contain any gold-gold interactions, or to the

gold(III) derivative [{Au(C6F5)3}2(Et4todit)]. The crystal structures have been established by X-ray diffraction studies and show that the gold centers coordinate to the sulfur atoms of the imidazoline-2-thione groups.

21 V. Fernández-Moreira*; I. Marzo; M.C. Gimeno*. Luminescent Re(I) and Re(I)/Au(I) complexes as cooperative partners in cell imaging and cancer therapy.Chemical Science. 5, pp. 4434 - 4446. 08/07/2014.

Type of production: Scientific paper
Format: Scientific and technical document or report
Position of signature: 1
Total no. authors: 3
Corresponding author: Yes
Impact source: SCOPUS
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 9.211
Journal in the top 25%: Yes
Position of publication: 18
No. of journals in the cat.: 171
Source of citations: SCOPUS
Citations: 32

Relevant results: A series of luminescent monometallic fac-[Re(bipy)(CO)3(L)]+ and heterometallic fac-[Re(bipy)(CO)3(L-AuPPh3)]+ complexes, where L is an imidazole, alkynyl-imidazole or alkynyl-pyridine derivative, have been synthesised for the purpose of finding a synergic effect between the excellent photophysical properties of rhenium complexes and the good antiproliferative effects of gold compounds. Cytotoxicity studies performed in human A549 lung cancer cells revealed the importance of the alkynyl–phosphine–gold fragment within the probe to design efficient anticancer agents. Heterometallic Re(I)/Au(I) derivatives presented values of IC50 more than 10 times lower than their analogous Re(I) complexes. In addition, fluorescent cell microscopy pointed out the different biodistribution behaviour of the monometallic and heterometallic families. Whereas the monometallic Re(I) species showed some general cytoplasmatic staining with mitochondrial accumulation, the heterometallic Re(I)/Au(I) derivatives shifted from localising in the mitochondria to the nucleus and nucleolus upon increasing the loading concentration, suggesting a completely different driving force for their localisation pattern. These facts revealed that these bimetallic species can be excellent partners in cell imaging and cancer therapy.

22 F. M. Monzittu; V. Fernández-Moreira; V. Lippolis*; M. Arca; A. Laguna; M. C. Gimeno*. Different emissive properties in dithiolate gold(I) complexes as a function of the presence of phenylene spacers.Dalton Transactions. 43, pp. 6212 - 6220. 02/02/2014.

Type of production: Scientific paper
Format: Journal
Position of signature: 2
Total no. authors: 6
Impact source: SCOPUS
Category: Science Edition - CHEMISTRY, INORGANIC & NUCLEAR
Impact index in year of publication: 4.197
Journal in the top 25%: Yes
Position of publication: 6
No. of journals in the cat.: 45
Source of citations: SCOPUS
Citations: 11

Relevant results: A family of dinuclear neutral thiolate gold complexes of the type RPh2PAuS(C6H4)nSAuPPh2R (n = 2, 3), RPh2PAuS(C6H4)S(C6H4)SAuPPh2R, RPh2PAuSCH2(C6H4)2CH2SAuPPh2R where R represents a pyridine or a phenylene ring, has been prepared and fully characterized. X-ray crystallographic studies showed the presence of aurophilic interactions for those species bearing two phenylene spacers between the gold metal centers, leading to infinite chains. The complexes are emissive in the solid state. Theoretical calculations together with the photophysical analysis seem to indicate that the main excitations involved in the emissive processes are due to a mixture of ILCT transition involving the thiolate and the conjugated phenylene rings, and LL?CT transitions comprising the thiolate and the pyridine or phenyl from the phosphine fragment which contrast with the typical gold thiolate emission, LMCT from the thiolate fragment to the metal center.

23 M. P. Coogan*; V. Fernández-Moreira*. Progress with, and prospects for, metal complexes in cell imaging. Chem. Commun.50, pp. 384. 30/10/2013.

Type of production: Scientific paper
Position of signature: 1
Total no. authors: 2
Corresponding author: Yes

Impact source: SCOPUS
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 6.834
Journal in the top 25%: Yes
Position of publication: 28
No. of journals in the cat.: 171
Source of citations: SCOPUS
Citations: 108

Relevant results: This article summarises the state of the art of metal complexes in cell imaging, particularly fluorescence microscopy, and presents prospects for the future development of this area. This article combines discussion of, and examples from, both the d- and f-block which have traditionally been considered separately, presenting the important classes of agents in each case, with a general description of their photophysical and cellular behaviour, and comparing and contrasting their properties and applications.

24 V. Fernández-Moreira; M. L. Ortego; C. F. Williams; M. P. Coogan; M. D. Villacampa; M. C. Gimeno*. Bioconjugated Rhenium(I) Complexes with Amino Acid Derivatives: Synthesis, Photophysical Properties, and Cell Imaging Studies. Organometallics. 31 - 16, pp. 5950 - 5957. ACS publications, 30/07/2012.

Type of production: Scientific paper
Format: Journal
Position of signature: 1
Total no. authors: 6

Impact source: ISI
Category: Science Edition - CHEMISTRY, INORGANIC & NUCLEAR
Impact index in year of publication: 4.145
Journal in the top 25%: Yes
Position of publication: 7
No. of journals in the cat.: 45
Source of citations: SCOPUS
Citations: 41

Relevant results: The synthesis of a series of bioconjugated fac tricarbonyl rhenium bis-imine complexes with amino acid ester derivatives and their application in fluorescent microscopy cell imaging is reported. A range of meta- and para-bioconjugated pyridyl derivatives were synthesized, and their photophysical properties were analyzed upon coordination to fac-[Re(bipy)(CO)3(CF3SO3)]. Their long lifetimes (270–370 ns) and large Stokes shifts (>140 nm) suggested the new bioconjugated rhenium complexes could be strong candidates for cell imaging applications. All species were taken up by MCF-7 cells and seemed to have a distinct localization pattern. However, while cells incubated with para derivatives had an anomalous cellular growth pattern and suffered from photobleaching upon irradiation, promoting cellular death, those incubated with the meta derivatives behaved in a normal manner and did not photobleach, emphasizing the importance of the ligand design when it is necessary to have an optimum outcome: i.e., cell imaging or phototherapy applications.

25 A. Graczyk; F. A. Murphy; D. Nolan; V. Fernández-Moreira; N. J. Lundin; C. M. Fitchett; S. M. Draper*. Terpyridine-fused polyaromatic hydrocarbons generated via cyclodehydrogenation and used as ligands in Ru(II) complexes. Dalton Trans.41, pp. 7746 - 7754. RCS publishing, 01/05/2012.

Type of production: Scientific paper
Format: Journal
Position of signature: 4
Total no. authors: 7

Impact source: ISI
Category: Science Edition - CHEMISTRY, INORGANIC & NUCLEAR
Impact index in year of publication: 4.097
Journal in the top 25%: Yes
Position of publication: 6
No. of journals in the cat.: 45
Source of citations: SCOPUS
Citations: 14

Relevant results: A series of novel fused 4?-substituted 2,2? : 6?,2??-terpyridine ligands and their ruthenium(II) complexes were prepared. The unusual 4?-substituents comprised 2,3,4,5-pentaphenylbenzene and its tert-butyl derivative (1 and 2) and the products from oxidative cyclodehydrogenation, i.e. polyaromatic fragments consisting of ten or thirteen fused benzene rings (3 and 4). The syntheses of all the ligands are discussed in terms of the demands and limitations of the Scholl reaction. The optical properties of the ligands, along with the single-crystal X-ray structures of 1 and 2, are presented. The latter show that the pentaphenylbenzene and terpyridine appendages of 1 and 2 are perpendicular in the solid state. Despite the inclusion of the large organic chromophore

the absorption and emission properties of the Ru(II) bis-terpy complexes (of ligands 1, 2 and 3) were found to be comparable to those of [Ru(terpy)2]2+. They are non-emissive at room temperature but emit at 77 K with excited state lifetimes of 11–12 ?s.

26 F. L. Thorp-Greenwood; V. Fernández-Moreira; C. O. Millet; C. F. Williams; J. Cable; J. B. Court; A. J. Hayes; D. Lloyd; M. P. Coogan*. A 'Sleeping Trojan Horse' which transports metal ions into cells, localises in nucleoli, and has potential for bimodal fluorescence/PET imaging. Chem. Commun.47, pp. 3096 - 3098. 21/01/2011.

Type of production: Scientific paper
Position of signature: 2
Total no. authors: 9

Impact source: ISI
Category: CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 5.787
Journal in the top 25%: Yes
Position of publication: 28
No. of journals in the cat.: 171

Source of citations: SCOPUS
Citations: 31

Relevant results: A rhenium polypyridine-based molecular vessel is membrane impermeant when empty, but, upon loading with metal ions, the cationic form is taken up by MCF-7 cells, localising in nucleoli. The luminescence of the vessel and its copper binding ability suggest potential as a bimodal fluorescence/PET imaging agent.

27 V. Fernández-Moreira; F. L. Thorp-Greenwood; R. J. Arthur; B. M. Kariuki; R. L. Jenkinsa; M. P. Coogan*. Fluxionality and lability in rhenium 4'-hydroxyterpyridine complexes: Evidence for an associative mechanism and correlated fluxionality and lability. Dalton Trans.39, pp. 7493 - 7503. 13/07/2010.

Type of production: Scientific paper
Position of signature: 1
Total no. authors: 6

Impact source: isi of knowledge
Category: Science Edition - CHEMISTRY, INORGANIC & NUCLEAR
Impact index in year of publication: 3.647
Position of publication: 6
No. of journals in the cat.: 45

Source of citations: SCOPUS
Citations: 17

Relevant results: The complexes [ReX(CO)3(N,N-?2-4?-hydroxy-2-2?,6?-2??-terpyridine)] (X = Cl,Br,I) have been synthesised and their ligand exchange reactions and fluxionality of the terpyridine unit studied. The halides are far more labile in these species than in analogous bipyridines, and it is proposed that the ligand fluxionality is involved in this reactivity. Structural studies of the family are reported along with spectroscopic studies including variable temperature NMR which is used to demonstrate a negative entropy of activation for the fluxional process. Synthesis of an analogue which is incapable of fluxional behaviour confirms the link between fluxionality and lability in these complexes.

28 V. Fernández-Moreira; F. L. Thorp-Greenwood; A. J. Amoroso; J. Cable; J. B. Court; V. Gray; A. J. Hayes; R. L. Jenkins; B. M. Kariuki; D. Lloyd; C. O. Millet; C. F. Williams; M. P. Coogan*. Uptake and localisation of rhenium fac-tricarbonyl polypyridyls in fluorescent cell imaging experiments. Org. Biomol. Chem.8, pp. 3888 - 3901. 30/06/2010.

Type of production: Scientific paper
Position of signature: 1
Total no. authors: 13

Impact source: isi of knowledge
Category: Science Edition - CHEMISTRY, ORGANIC
Impact index in year of publication: 3.451
Journal in the top 25%: No
Position of publication: 16
No. of journals in the cat.: 57

Source of citations: SCOPUS
Citations: 70

Relevant results: The synthesis of a series of rhenium fac tricarbonyl bisimine complexes and their application as lumophores in fluorescence imaging of yeast and human adenocarcinoma cells is reported. A wide range of

complexes are synthesised with varying charges and lipophilicities, all of which have photophysical properties which make them suitable as cell imaging agents. After attempts to apply these as imaging agents in various strains of yeast which showed limited uptake, an investigation was undertaken of their applications as imaging agents in mammalian cells. In general the uptake was high and short-term toxicity and photobleaching appear to be low. The patterns of uptake and localisation are correlated with structural and electronic features of the complexes in an attempt to establish ground-rules for the design and application of rhenium complexes in imaging of eukaryotes.

29 V. Fernández-Moreira; B. Song; V. Sivagnanam; A.-S. Chauvin; C. D. B. Vandevyver; M. Gijs; I. Hemmilä; J.-C. G.Bünzli*. Bioconjugated Lanthanide Luminescent Helicate as Multilabels for Lab-on-a-Chip Detection of Cancer Biomarkers.Analyst. 135, pp. 42 - 52. 20/11/2009.

Type of production: Scientific paper
Position of signature: 1
Total no. authors: 8

Impact source: ISI
Category: Science Edition - CHEMISTRY, ANALYTICAL
Impact index in year of publication: 3.913
Journal in the top 25%: Yes
Position of publication: 12
No. of journals in the cat.: 81

Source of citations: SCOPUS
Citations: 64

Relevant results: ABSTRACT: The lanthanide binuclear helicate [Eu2(LC2(CO2H))3] is coupled to avidin to yield a luminescent bioconjugate EuB1 (Q = 9.3%, s(5D0) = 2.17 ms). MALDI/TOF mass spectrometry confirms the covalent binding of the Eu chelate and UV-visible spectroscopy allows one to determine a luminophore/protein ratio equal to 3.2. Bio-affinity assays involving the recognition of a mucin-like protein expressed on human breast cancer MCF-7 cells by a biotinylated monoclonal antibody 5D10 to which EuB1 is attached via avidin-biotin coupling demonstrate that (i) avidin activity is little affected by the coupling reaction and (ii) detection limits obtained by time-resolved (TR) luminescence with EuB1 and a commercial Eu-avidin conjugate are one order of magnitude lower than those of an organic conjugate (FITC-streptavidin). In the second part of the paper, conditions for growing MCF-7 cells in 100–200 mm wide microchannels engraved in PDMS are established; we demonstrate that EuB1 can be applied as effectively on this lab-on-a-chip device for the detection of tumour-associated antigens as on MCF-7 cells grown in normal culture vials. In order to exploit the versatility of the ligand used for selfassembling [Ln2(LC2(CO2H))3] helicates, which sensitizes the luminescence of both EuIII and TbIII ions, a dual on-chip assay is proposed in which estrogen receptors (ERs) and human epidermal growth factor receptors (Her2/neu) can be simultaneously detected on human breast cancer tissue sections. The Ln helicates are coupled to two secondary antibodies: ERs are visualized by red-emitting EuB4 using goat anti-mouse IgG and Her2/neu receptors by green-emitting TbB5 using goat anti-rabbit IgG. The fact that the assay is more than 6 times faster and requires 5 times less reactants than conventional immunohistochemical assays provides essential advantages over conventional immunohistochemistry for future clinical biomarker detection.

30 V. Fernández-Moreira; M.P. Coogan*; F. L. Thorp-Greenwood. Application of d6-Transition Metal Complexes In Fluorescence Cell Imaging.ChemCommun.46, pp. 186 - 202. 12/11/2009.

Type of production: Scientific paper
Position of signature: 1
Total no. authors: 3

Impact source: ISI
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 5.787
Journal in the top 25%: Yes
Position of publication: 28
No. of journals in the cat.: 171

Source of citations: SCOPUS
Citations: 525

Relevant results: Luminescent d6 transition metal complexes have often been proposed as useful fluorophores for cell imaging due to their attractive photophysical attributes, but until very recently their actual applications have been scarce, and largely limited to ruthenium complexes in DNA and oxygen sensing. In the last few years, however, there has been an increasing number of reports of the design and application in cellular studies of a diverse range of Ir, Re and Ru complexes tailor-made for imaging applications. The design principles, uptake and cellular localisation of this new class of imaging agents are presented in context in this feature article.

31 M. P. Coogan*; V. Fernández-Moreira; B. M. Kariuki; S. J. A. Pope; F. L. Thorp-Greenwood. Rhenium Tricarbonyl 4'-Oxo-2,2',6',2''-Terpyridyl Trimer-A Luminescent Molecular Vessel With A Removable Silver Stopper.Angew. Chem. Int. Ed.48, pp. 4965 - 4968. 26/05/2009.

Type of production: Scientific paper
Position of signature: 2
Total no. authors: 5

Impact source: ISI
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 11.829
Journal in the top 25%: Yes
Position of publication: 14
No. of journals in the cat.: 171

Source of citations: SCOPUS
Citations: 60

Relevant results: PLEASE NOTE: ALPHABETICAL order of authorship. Shining metal cups: A luminescent tube of triangular cross?section and stoppered by a silver ion (see picture: Re?yellow, N?blue, O?red) is formed in two steps from commercial materials. The silver ion can be removed to give a tube, and both species are potential hosts for small ions and molecules; a change in luminescence is triggered by the encapsulation of silver.

32 M. P. Coogan*; V. Fernández-Moreira; J. B. Hess; S. J. A. Pope; C. Williams. Rhenium fac-tricarbonyl bisimine complexes: luminescence modulation by hydrophobically driven intramolecular interactions. New J. Chem.33, pp. 1094 - 1099. 03/03/2009.

Type of production: Scientific paper
Position of signature: 2
Total no. authors: 5

Impact source: ISI
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 3.009
Journal in the top 25%: No
Position of publication: 65
No. of journals in the cat.: 171

Source of citations: SCOPUS
Citations: 42

Relevant results: PLEASE NOTE: ALPHABETICAL order of authorship. A triplet metal-to-ligand charge transfer emitting cationic ReI complex (1c) functionalised with a C12 alkyl chain possesses unique solvent-dependent photophysical properties. In acetonitrile solution the luminescence properties of 1c are typical of related fac-{Re(CO)3(diimine)L}+ species with emission at 555 nm (t = 135 ns, Fem = 1.7%) whereas in water, emission was blue-shifted to 523 nm with an increase in luminescence lifetime (688 ns) and quantum yield (9.2%). These unusual properties are attributed to a dynamic intramolecular mechanism involving fold-back of the alkyl chain onto or around the coordinated 2,20-bipyridine ligand, thus shielding the excited state from the surrounding water solvent. Comparison of 1c with ReI complexes either lacking a chain or incorporating varying chain lengths (C8 and C16) showed these properties to be unique to 1c. The intramolecular fold-back conformation was shown to be highly temperature dependent between 278 and 318 K, with elevated temperatures resulting in far less effective shielding. These unique photophysical properties can therefore be exploited in aqueous environments through interaction with lipophilic entities such as liposomes or biomolecules such as human serum albumin, which both result in a reverted red-shifted emission for 1c at 552–555 nm.

33 A. J. Amoroso*; Richard J. Arthur; M. P. Coogan*; J. B. Court; V. Fernández-Moreira; A. J. Hayes; D. Lloyd; C. Millet; S. J. A. Pope. 3-Chloromethylpyridyl Bipyridine fac Tricarbonyl Rhenium: A Thiol-Reactive Lumophore for Fluorescence Microscopy Accumulates In Mitochondria.New J. Chem.32 - 7, pp. 1097 - 1102. 23/05/2008.

Type of production: Scientific paper
Position of signature: 4
Total no. authors: 9

Impact source: SCOPUS
Category: Science Edition - CHEMISTRY, MULTIDISCIPLINARY
Impact index in year of publication: 2.942
Journal in the top 25%: No

Position of publication: 64 **No. of journals in the cat.:** 171

Source of citations: SCOPUS **Citations:** 124

Relevant results: PLEASE NOTE: ALPHABETICAL order of authorship. The 3-chloromethylpyridyl bipyridine fac tricarbonyl rhenium cation is a thiol-reactive luminescent agent with a long luminescence lifetime and large Stokes shift that is demonstrated by colocalisation studies to accumulate in mitochondria. This represents the first application of a 3MLCT luminescent agent for the specific targeting of a biological entity in imaging.

34 A. J. Amoroso*; M. P. Coogan*; J. E. Dunne; V. Fernández-Moreira; J. B. Hess; Anthony J. Hayes; David Lloyd; Coralie Millet; Simon J. A. Pope; CraigWilliams. Rhenium Fac Tricarbonyl Bisimide Complexes: Biological Useful Fluorochromophores For Cell Imaging Applications.Chem. Commun.pp. 3066 - 3068. RSC, 20/06/2007.

Type of production: Scientific paper

Position of signature: 4

Total no. authors: 10

Impact source: ISI **Category:** Science Edition - CHEMISTRY, MULTIDISCIPLINARY

Impact index in year of publication: 5.141 **Journal in the top 25%:** Yes

Position of publication: 28 **No. of journals in the cat.:** 171

Source of citations: SCOPUS **Citations:** 179

Relevant results: PLEASE NOTE: ALPHABETICAL order of authorship. A series of lipophilic and hydrophilic fac tricarbonyl rhenium bisimine complexes have been prepared, their membranepermeabilities explored in liposomes and their potential for application in fluorescence microscopy cell imaging demonstrated in the first application of MLCT-fluorescent rhenium complexes in cell imaging.

35 P. Álvarez-Boo; J. S. Casas*; M. D. Couce; V. Fernández-Moreira; E. Freijanes; E. García-Martínez; J. Sordo; E. Vázquez-López.Formation Of 3-sulfanylcoumarins By Snph3OH-promoted Cyclization Of 3-aryl-2-sulfanylpropenoic Acids.Eur. J. Inorg. Chem.21, pp. 4425 - 4429. 21/10/2005.

Type of production: Scientific paper

Position of signature: 4

Total no. authors: 8

Impact source: SCOPUS **Category:** Science Edition - CHEMISTRY, INORGANIC & NUCLEAR

Impact index in year of publication: 2.51 **Journal in the top 25%:** No

Position of publication: 14 **No. of journals in the cat.:** 45

Source of citations: SCOPUS **Citations:** 13

Relevant results: *PLEASE NOTE: ALPHABETICAL order of authorship. Reaction of SnPh3OH with 3-(2-hydroxyphenyl)sulfanylpropenoic acid [H2(o-hpspa)] yielded [SnPh3(SC)], where SC is deprotonated 3-sulfanylcoumarin (3-sulfanyl-2H-1-benzopyran- 2-one, HSC), by a cyclization process. Similarly, when 3- (2-hydroxy-5-bromophenyl)- and 3-(2-hydroxy-3,5-dibromophenyl)- 2-sulfanylpropenoic acids were treated with the same tin hydroxide, the cyclization resulted in [SnPh3(BrSC)] and [SnPh3(Br2SC)], where BrSC and Br2SC are the new ligands formed from the deprotonation of 3-sulfanyl-6-bromocoumarin and 3-sulfanyl-6,8-dibromocoumarin, respectively. The new compounds were characterized by elemental analysis, multinuclear NMR (1H, 13C and 119Sn) and vibrational spectroscopy, and mass spectrometry. Single-crystal X-ray structures of these complexes all showed that the tin atom is surrounded by three phenyl C atoms and the S and O atoms of the bidentate ligand in a distorted trigonal-bipyramidal environment.

36 P. Álvarez-Boo; J. S. Casas; M. D. Couce; R. Farto; V. Fernández-Moreira; E. Freijanes; J. Sordo*; E. Vázquez-López.Synthesis, characterization and antibacterial activity of some new triphenyltin(IV) sulfanylcarboxylates: Crystal structure of [(SnPh3)2(p-mpspa)], [(SnPh3)2(cpa)] and [(SnPh3)2(tspa)(DMSO)]. J. Organometallic Chem.691, pp. 45 - 52. 13/10/2005.

Type of production: Scientific paper

Position of signature: 5

Total no. authors: 8

Impact source: SCOPUS

Category: Science Edition - CHEMISTRY, INORGANIC & NUCLEAR

Impact index in year of publication: 2.332

Journal in the top 25%: No

Position of publication: 19

No. of journals in the cat.: 45

Source of citations: SCOPUS

Citations: 21

Relevant results: PLEASE NOTE: ALPHABETICAL order of authorship. Five new triphenyltin(IV) sulfanylcarboxylates of the general formula [(SnPh3)2L] (L = pspa, tspa, fspa, p-mpspa or cpa, where p = 3-(2-phenyl)-, t = 3-(2-thienyl)-, f = 3-(2-furyl)-, p-mp = 3-(4-methoxyphenyl)-, spa = 2-sulfanylpropenoato and cpa = 2-cyclopentilyden-2-sulfanylacetate) have been synthesized by reacting triphenyltin(IV) hydroxide with the corresponding acid in ethanol/acetone. The complexes have been characterized by elemental analysis and mass spectrometry and by vibrational and NMR (1H, 13C, 119Sn) spectroscopies. In the case of [(SnPh3)2(p-mpspa)] and [(SnPh3)2(cpa)], X-ray structural studies showed that in both compounds each Sn atom is coordinated to three phenyl C atoms and to one S or O atom of the bridge ligand L. All five complexes are active against strains of Staphylococcus aureus, but are inactive against Escherichia coli and Pseudomonas aeruginosa. From a solution of [(SnPh3)2(tspa)] in DMSO-d6 the new complex [(SnPh3)2(tspa)(DMSO)] was isolated. The single-crystal X-ray diffractometric study of this complex is also reported, showing that both Sn atoms are bridged by the tspa ligand, whereas the molecule of DMSO is coordinated to one of the tin atoms via the oxygen atom.

37 O. Crespo; V. Fernández-Moreira; M. C. Gimeno*. Understanding the behavior of group 11 emi tters for the design of complexes with potential applications in medicine and material science. Newsletters of the European Photochemistry Association (EPA). June - 94, pp. 71 - 76. 01/06/2018.

Type of production: Popular science article

Format: Journal

Position of signature: 2

Total no. authors: 3

Relevant results: PLEASE: note that the authors are listed in alphabetical order as all of us have contributed equally.

38 E. Cerrada; V. Fernández-Moreira; M. C. Gimeno*. Gold and platinum alkynyl complexes for biomedical applications. Advances in Organometallic Chemistry. 71, Elsevier, 2019. Available on-line at: <https://www.elsevier.com/books/advances-in-organometallic-chemistry/perez/978-0-12-817115-8>. ISBN 9780128171158

Type of production: Book chapter

Format: Book

Position of signature: 2

Degree of contribution: Author or co-author of article in journal with external admissions assessment committee

Total no. authors: 3

Relevant results: Metal alkynyl complexes have many opportunities to offer in the development of new metal-based chemotherapeutic agents, especially for gold and platinum derivatives, whose complexes present a great stability due to the MCCR bonds. This review covers the chemistry of gold and platinum complexes bearing alkynyl ligands that present antitumor activity. Additionally, platinum compounds are promising candidates to be used as photosensitizers in photodynamic therapy with easily tuneable photophysical properties.

Works submitted to national or international conferences

1 **Title of the work:** Luminescent Heterometallic Re(I)/Au(I) complexes in medicine

Name of the conference: 1st International Workshop on Metals in Medicine

Corresponding author: Yes

City of event: Paris, France

Date of event: 14/11/2019

Organising entity: Chimie ParisTech,

A. Luengo ;V. Fernandez-Moreira ;I. Marzo ;M. C. Gimeno.

2 **Title of the work:** Heterometallic Re(I)/Au(I) complexes
Name of the conference: BioLugo
Corresponding author: Yes
City of event: Lugo, Galicia, Spain
Date of event: 30/06/2019
End date: 03/07/2019
Organising entity: Universidad de Santiago de Compostela **Type of entity:** University
V. Fernández-Moreira; M. Redrado Domingo; M.C. Gimeno.

3 **Title of the work:** Novel Iridium(III) – Gold(I) Complexes as Theranostic Agents
Name of the conference: BioLugo
Corresponding author: No
City of event: Lugo, Galicia, Spain
Date of event: 30/06/2019
End date: 03/07/2019
Organising entity: Universidad de Santiago de Compostela **Type of entity:** University
V. Fernández-Moreira; M. Redrado Domingo; M.C. Gimeno.

4 **Title of the work:** Compuesto de Oro en medicina
Name of the conference: II Workshop: NanoOncología
Type of event: Workshop
Type of participation: Participatory - invited/keynote talk **Reasons for participation:** Upon invitation
Corresponding author: Yes
City of event: Zaragoza, Aragon, Spain
Date of event: 14/02/2019
"Compuesto de Oro en medicina".

5 **Title of the work:** Novel Connections Between Rhenium(I) and Gold(I) for Theranostic Agents
Name of the conference: XXXVI GEQO 2018
Type of event: Conference
Type of participation: 'Participatory - poster
Corresponding author: No
City of event: Zaragoza, Aragon, Spain
Date of event: 05/09/2018
End date: 07/09/2018
A. Luengo; V. Fernandez-Moreira; I. Marzo; M. C. Gimeno.

6 **Title of the work:** Heterometallic complexes for diagnosis and therapy
Name of the conference: XXXVI GEQO 2018
Type of participation: 'Participatory - poster
Corresponding author: No
City of event: Zaragoza, Aragon, Spain
Date of event: 05/09/2018
End date: 07/09/2018
M. Redrado Domingo; V. Fernández-Moreira; I. Marzo; M. C. Gimeno.

7 **Name of the conference:** XXXVI GEQO 2018
Type of participation: Organizational - Scientific and organizing committee
City of event: Zaragoza, Aragon, Spain
Date of event: 05/09/2018
End date: 07/09/2018

8 **Title of the work:** Synthesis of Luminescent Squaramide Monoesters: Cytotoxicity and Cell Imaging Studies in HeLa Cells
Name of the conference: 3rd International Electronic Conference on Medicinal Chemistry
Corresponding author: No
Date of event: 01/11/2017
End date: 30/11/2017
Publication in conference proceedings: Yes
R. P. Herrera; V. Fernández-Moreira; J. V. Alegre-Requena; I. Marzo; M. C. Gimeno.

9 **Title of the work:** Complejos luminiscentes de oro(I): Citotoxicidad y biodistribución
Name of the conference: BioBilbao
Type of event: Conference
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Bilbao, Basque Country, Spain
Date of event: 09/07/2017
End date: 12/07/2017
Organising entity: Universidad del País Vasco **Type of entity:** University
City organizing entity: Bilbao, Basque Country, Spain
V. Fernández-Moreira; A. Luengo; R. Visbal; I. Marzo; M. C. Gimeno.

10 **Title of the work:** Heterometallic Re(I)/Au(I) complexes as theranostic agents
Name of the conference: 14th International Conference on Applied Bioinorganic Chemistry ISABC14
Type of participation: Participatory - oral communication
Corresponding author: No
City of event: Toulouse, France
Date of event: 07/06/2017
End date: 10/06/2017
M. Concepción Gimeno; A. Luengo; V. Fernández-Moreira; I. Marzo.

11 **Title of the work:** Synthesis of Luminescent Squaramide Monoesters: Cytotoxicity and Cell Imaging Studies in HeLa Cells. (Oral contribution)
Name of the conference: 3rd International Electronic Conference on Medicinal Chemistry.
Type of event: Conference
Type of participation: Participatory - oral communication **Reasons for participation:** Open access
Corresponding author: No
Date of event: 2017
R. P. Herrera; V. Fernández-Moreira; J. V. Alegre-Requena; I. Marzo; M. C. Gimeno.

12 **Title of the work:** Hacia el diseño de fármacos para diagnóstico y terapia: Compuestos luminiscentes NHC de Re(I)/Au(I)
Name of the conference: 7ª Jornada de Jóvenes Investigadores en Física y Química de Aragón
Type of event: Workshop
Type of participation: Participatory - oral communication

Corresponding author: No
City of event: zaragoza, Aragon, Spain
Date of event: 24/11/2016
Organising entity: Universidad de Zaragoza **Type of entity:** University
A. Luengo; V. Fernandez-Moreira; M.C. Gimeno; I. Marzo.

13 **Title of the work:** Re(I) and Re(I)/Au(I) complexes for cell imaging and therapy applications
Name of the conference: 6th EuCheMS Chemistry Congress
Type of event: Conference
Type of participation: 'Participatory - poster
Corresponding author: No
City of event: Seville, Andalusia, Spain
Date of event: 11/09/2016
End date: 15/09/2016
A. Luengo; V. Fernández-Moreira; I. Marzo; M. C. Gimeno.

14 **Title of the work:** Bimetallic Complexes as Cooperative Partners in Call Imaging and Cancer Therapy
Name of the conference: XXXV Reunión bienal RSEQ
Type of event: Conference
Type of participation: Participatory - oral communication
Corresponding author: No
City of event: A coruña, Galicia, Spain
Date of event: 15/07/2016
End date: 23/07/2016
C. Gimeno; V. Fernandez-Moreira; I. Marzo.

15 **Title of the work:** Compuestos de Re(I) y Re(I)/Au(I): Agentes de contraste y anticancerígenos
Name of the conference: IX reunuion científica de bioinorgánica
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Cadiz, Andalusia, Spain
Date of event: 14/06/2015
End date: 17/06/2015
Organising entity: AEBIN
V. Fernández-Moreira; I. Marzo; M. C. Gimeno.

16 **Title of the work:** Bioconjugated Re(I) complexes with amino acid derivatives: Synthesis, photophysical properties and cell imaging studies.
Name of the conference: ICOMC-25 Lisbon
Type of event: Conference
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Lisboa,
Date of event: 2012
V. Fernandez-Moreira; L. Ortego; C. F Williams; M. P. Coogan; M. D. Villacampa; A. Laguna; M. C. Gimeno.

17 **Title of the work:** Bioconjugated Re(I) complexes with amino acid derivatives: Synthesis, photophysical properties and cell imaging studies.
Name of the conference: ICOMC-25 Lisbon
Type of event: Conference

Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Lisboa, Portugal
Date of event: 2012
V. Fernandez-Moreira; L. Ortego; C. F Williams; M. P. Coogan; M. D. Villacampa; A. Laguna; M. C. Gimeno.

18 **Name of the conference:** Photochemistry and Photochemical Techniques incorporating the Young and Early Career Researchers' Meeting 2011
Type of event: Meeting
City of event: Durham, United Kingdom
Date of event: 13/01/2011
End date: 13/01/2011
Organising entity: RSC

19 **Title of the work:** Bioconjugated Re(I) derivatives for cell imaging applications
Name of the conference: 5th EuCheMs Conference in Nitrogen Ligands
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Granada,
Date of event: 2011
Organising entity: Universidad de Granada
City organizing entity: Grananda, Andalusia, Spain
V. Fernandez-Moreira; L. Ortego; M D. Villacampa; A. Laguna; M. C. Gimeno.

20 **Title of the work:** Bioconjugated Lanthanide Helicate: Synthesis, Bioaffinity assays and, Celullar Imaging
Name of the conference: COST Action D38
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Varsovia, Poland
Date of event: 2009
V. Fernández Moreira; B. Song; V. Sivagnanam; A.-S Chauvin; C. D. B. Vandevyver; M. Gijs; I. Hemmilä; J.-C. G.Bünzli.

21 **Title of the work:** Bioconjugated Lanthanide Helicates: Syntesis and Applications
Name of the conference: SCS Fall Meeting-09
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Lausanne, Switzerland
Date of event: 2009
Organising entity: EPFL
City organizing entity: Lausanne, Switzerland
V. Fernández-Moreira; B. Song; A.-S. Chauvin; C. D.B. Vandevyver; J.-C. G. Bünzli.

22 **Title of the work:** Bioconjugation of luminescent lanthanides helicates and its applications.
Name of the conference: International Conference of f Elements (7ICfE)
Type of participation: Participatory - invited/keynote talk
Corresponding author: Yes
City of event: Colonia, Alemania,
Date of event: 2009

V. Fernández Moreira; B. Song; V. Sivagnanam; A.-S. Chauvin; C. D. B. Vandevyver; M. Gijs; I. Hemmilä; J.-C. G.Bünzli.

23 **Title of the work:** Cell Imaging and Membrane Transport Studies of Luminiescent Rhenium Complexes
Name of the conference: RSC Photochemistry Group-Young Reseachers' Meeting
Type of event: Conference
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Loughborough,
Date of event: 2007
Organising entity: University of Loughborough
City organizing entity: Loughborough, United Kingdom
V. Fernández-Moreira; A. J. Amoroso; M. P. Coogan; S. J. A. Pope.

24 **Title of the work:** Cell Imaging and Membrane Transport Studies of Luminiscent Rhenium Complexes.
Name of the conference: RSC South-West Regional Dalton Meeting
Type of event: Conference
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Oxford, United Kingdom
Date of event: 2007
Organising entity: University of Oxford
City organizing entity: Oxford, United Kingdom
V. Fernández-Moreira; A. J. Amoroso; S. S. R. Bonaccorsi; M. P. Coogan; S. J. A. Pope.

25 **Title of the work:** Luminescent Labelling through Self-destructive Membrane Transport.
Name of the conference: 17th International Symposium and Photophysics of Coordination Compounds.
Type of event: Conference
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Dublín, Ireland
Date of event: 2007
Organising entity: Trinity College Dublin
City organizing entity: Dublin, Ireland
V. Fernández-Moreira; A. J. Amoroso; S. Bonacorsi; M. P. Coogan. "Luminescent Labelling through Self-destructive Membrane Transport.".

26 **Title of the work:** Luminescent Labelling through Self-destructive Membrane Transport.
Name of the conference: Dalton Discussion 9: Functional Molecular Assemblies.
Type of event: Conference
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Manchester, United Kingdom
Date of event: 2006
Organising entity: University of Manchester
City organizing entity: Manchester, United Kingdom
V. Fernández-Moreira; A. J Amoroso; M. P. Coogan.

27 **Title of the work:** Biological Imaging and Drugs Delivery
Name of the conference: 1st European Chemistry Congress
Type of participation: Participatory - oral communication

Corresponding author: Yes
City of event: Budapest, Hungary
Date of event: 2006
V. Fernández-Moreira; A. J. Amoroso; M. P. Coogan; S.J. A. Pope.

28 **Title of the work:** Biological Imaging and Drugs Delivery
Name of the conference: 1st European Chemistry Congress
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Budapest, Hungary
Date of event: 2006
V. Fernández-Moreira; A. J. Amoroso; M. P. Coogan; S. J. A. Pope.

29 **Title of the work:** Rhenium Carbonyl Complexes of Self-Destructing Membrane Permeable Ligands
Name of the conference: XXII International Conference on Organometallic Chemistry ICOMC-2006.
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Zaragoza, Spain
Date of event: 2006
V. Fernández-Moreira; A. J. Amoroso; M. P. Coogan.

30 **Title of the work:** Synthesis of Ligand–Organic Conjugates for Biological Imaging Applications.
Name of the conference: Postgraduate Inorganic Talks.
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Cardiff,
Date of event: 2006
Organising entity: Cardiff university
City organizing entity: Cardiff, United Kingdom
V. Fernández-Moreira; A. J. Amoroso; M. P. Coogan. "Synthesis of Ligand–Organic Conjugates for Biological Imaging Applications.".

31 **Title of the work:** Luminescent Labelling through Self-destructive Membrane Transport.
Name of the conference: Cardiff Easter Conference.
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Cardiff,
Date of event: 2005
V. Fernández-Moreira; A. J. Amoroso; M. P. Coogan.

32 **Title of the work:** Synthesis of Ligand–Organic Conjugates for Biological Imaging Applications.
Name of the conference: University of Wales Postgraduate Conference
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Gregynog,
Date of event: 2005
Organising entity: University of Wales **Type of entity:** University
City organizing entity: United Kingdom
Vanesa Fernández-Moreira; A. J. Amoroso; M.P. Coogan.

33 **Title of the work:** Synthesis of Ligand–Organic Conjugates for Biological Imaging Applications.
Name of the conference: University of Wales Postgraduate Conference
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Gregynog,
Date of event: 2005
Organising entity: University of Wales **Type of entity:** University
City organizing entity: United Kingdom
V. Fernández-Moreira; A. J. Amoroso; M. P. Coogan.

34 **Title of the work:** Synthesis of Ligand–Organic Conjugates for Biological Imaging Applications.
Name of the conference: University of Wales postgraduate conference.
Corresponding author: Yes
City of event: Gregynog Hall, United Kingdom
Date of event: 2005
V. Fernández-Moreira; A J. Amoroso; M. P. Coogan.

35 **Title of the work:** Interacción de SnPh3OH con el ácido 3-(2-tienil)-2-sulfanil-propenioco.
Name of the conference: 11ª Reunión científica plenaria de Química Inorganica, 5ª Reunión científica plenaria de Química de Estado Sólido
Type of event: Conference **Geographical area:** European Union
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Santiago de Compostela, Galicia, Spain
Date of event: 12/09/2004
End date: 16/09/2004
V. Fernández-Moreira; P. Álvarez-Boo; J. S. Casas; M. D. Couce; E. Freijanes; J Sordo; E. Vazquez-Lopez.

36 **Title of the work:** Interacción de PbPh22+ con el ácido 2-ciclopentiliden-2-sulfanilacético (H2CPA).
Name of the conference: 11ª Reunión científica plenaria de Química Inorganica, 5ª Reunión científica plenaria de Química de Estado Sólido.
Type of participation: 'Participatory - poster
Corresponding author: No
City of event: Santiago de Compostela, Spain,
Date of event: 2004
P. Ávarez-Boo; J. S. Casas; M. D. Couce; V. Fernández-Moreira; E. Freijanes; José Sordo; Ezequiel Vázquez-López.

37 **Title of the work:** The formation of 3-mercaptocoumarins by cyclization of 3-aryl-2-mercaptopropenoic acids inducided by SnPh3OH.
Name of the conference: XXXVIth International Conference on Coordination Chemistry.
Type of participation: 'Participatory - poster
Corresponding author: No
City of event: Mérida Yucatán,
Date of event: 2004
E. Freijanes; P. Ávarez-Boo; J. S. Casas; M. D. Couce; V. Fernández-Moreira; J. Sordo; E. Vázquez-López.

Other dissemination activities

1 **Title of the work:** Semana de inmersión a la ciencia
City of event: Zaragoza,
Date of event: 15/06/2018
Organising entity: Universidad de Zaragoza **Type of entity:** University

2 **Title of the work:** Chemistry workshop
Type of event: Workshop
Corresponding author: Yes
City of event: Zaragoza,
Date of event: 19/07/2017
Organising entity: ISQCH-Escuela infantil Dada
Vanesa Fernández Moreira. "Taller de química".

3 **Title of the work:** Dissemination video supported by FECYT (FCT-15-10128) Materiales con actividad biológica: Dignosis y terápia
City of event: Zaragoza,
Organising entity: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
V. Fernández-Moreira; R. P. Herrera; M.C. Gimeno. "Materiales con actividad biológica: diagnosis y terapia". Available on-line at: <https://player.vimeo.com/external/195550850.source.mp4?s=7a3e331f2cb16af5e0e5b8fbb6806fac393f49e7&profile_id=0&download=1>.

R&D management and participation in scientific committees

Scientific, technical and/or assessment committees

Committee title: Scientific Committee of XXXVI GEQO Congress Organometallic Chemistry Group

Organization of R&D activities

Title of the activity: Organizing the XXXVI GEQO Congress Organometallic Chemistry Group
Type of activity: Congress
Start-End date: 05/09/2018 - 07/09/2018

Evaluation and revision of R&D projects and articles

1 **Performed tasks:** Evaluator for French funding program «investissements d'avenir», "MiChem"
Start date: 15/01/2018

2 **Performed tasks:** Referee for Bioconjugate Chemistry

3 **Performed tasks:** Referee for Dalton Transactions

4 **Performed tasks:** Referee for Future Medicinal Chemistry

5 **Performed tasks:** Referee for Inorganic Chemistry

6 **Performed tasks:** Referee for Inorganica Chimica Acta

7 **Performed tasks:** Referee for New journal of Chemistry

8 **Performed tasks:** Referee for Scientific Report

Other achievements

Stays in public or private R&D centres

1 **Entity:** Universidad de Zaragoza **Type of entity:** University
Start-End date: 07/02/2011 - 24/04/2015
Goals of the stay: Post-doctoral
Provable tasks: Research, Supervision and Management

2 **Entity:** Trinity College Dublin
Faculty, institute or centre: Chemistry
City of entity: Dublin, Ireland
Start-End date: 01/09/2009 - 31/08/2010 **Duration:** 1 year
Goals of the stay: Post-doctoral
Provable tasks: reseach and management

3 **Entity:** EPFL
City of entity: Lausanne, Switzerland
Start-End date: 01/09/2008 - 31/08/2009 **Duration:** 1 year
Goals of the stay: Post-doctoral
Provable tasks: Research, Management

4 **Entity:** Cardiff university
Faculty, institute or centre: Chemsitry
City of entity: Cardiff, United Kingdom
Start-End date: 01/01/2005 - 31/07/2008 **Duration:** 3 years - 7 months
Goals of the stay: Doctorate
Provable tasks: Research, Supervision of M.phil students, laboratory demonstrator

5 **Entity:** Universidade de Vigo **Type of entity:** University
Start-End date: 01/10/2003 - 31/12/2004 **Duration:** 1 year - 5 months
Goals of the stay: D.E.A.
Provable tasks: Research

Obtained grants and scholarships

1 **Name of the grant:** Marie Curie Transfer of Knowledge (ToK)
Aims: Post-doctoral
Awarding entity: European Commission
Conferral date: 04/09/2009 **Duration:** 1 year
End date: 07/10/2010
Entity where activity was carried out: Trinity College Dublin
Faculty, institute or centre: Sami Nasr Institute of Advanced Materials

2 **Name of the grant:** EPSRC
Aims: Pre-doctoral
Awarding entity: British Research Council
Conferral date: 01/01/2005 **Duration:** 3 years
End date: 31/12/2007

3 **Name of the grant:** Ramón y Cajal
City awarding entity:
Aims: Post-doctoral
Awarding entity: MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES **Type of entity:** State agency
Amount of the grant: 40.000 €
Conferral date: 29/11/2019 **Duration:** 5 years
Entity where activity was carried out: Universidad de Zaragoza

Other types of collaboration with researchers or technologists

1 **Type of relationship:** Confirmed publications
Name principal investigator (PI, Co-PI....): M. Poyatos; E. Peris
Description of the collaboration: Photophysical and biological studies
Participating entity/entities:
Universidad Jaime I **Type of entity:** University
City participating entity: Castellón de la Plana, Valencian Community, Spain

Start date: 2018

2 **Type of relationship:** Collaboration in progress
Name principal investigator (PI, Co-PI....): Alberto Jimenez Schuhmacher
Description of the collaboration: Bioinformatic studies
Participating entity/entities:
Instituto de Investigación Sanitaria Aragón

Start date: 2018

3 **Type of relationship:** Collaboration in progress
Name principal investigator (PI, Co-PI....): P. Nuno
Description of the collaboration: Photophysical studies
Participating entity/entities:
Lisbon University

Start date: 2018

4 **Type of relationship:** collaboration in progress
Name principal investigator (PI, Co-PI....): Gustavo Espino
Description of the collaboration: Photophisical and biological studies (bioimaging)
Participating entity/entities:
Universidad de Burgos **Type of entity:** University
City participating entity: Burgos, Castile and León, Spain

Start date: 2018

5 **Type of relationship:** Confirmed publications
Name principal investigator (PI, Co-PI....): Pilar Amo; Salomé Delgado; Felix Zamora
Description of the collaboration: Photophysical studies
Participating entity/entities:
Universidad Autónoma de Madrid **Type of entity:** University
City participating entity: Cantoblanco, Community of Madrid, Spain

Start date: 2016

6 **Type of relationship:** Confirmed publications
Name principal investigator (PI, Co-PI....): R. P. Herrera
Description of the collaboration: Photophysical, biological assays and bioimaging
Start date: 2016

7 **Type of relationship:** Network Metdrugs
Name principal investigator (PI, Co-PI....): M. C. Gimeno; V. Gómez Vallejo; J. Ruiz Lopez; M. Capdevila Vidal; S. Atrian Venrtura; R. Pedrido Castiñeiras; J. García Tojal; J. M. Domínguez Vera; A. Gómez-Quiroga; Patrick Gámez Enamorado
Description of the collaboration: Metdrugs
Start date: 15/12/2015 **Duration:** 2 years

8 **Type of relationship:** Confirmed publications
Description of the collaboration: Provide cell culture and reagents for biological experiments
Participating entity/entities:
Universidad de Zaragoza **Type of entity:** University
City participating entity: Zaragoza, Aragon, Spain

Start date: 2014

9 **Type of relationship:** Confirmed publications
Name principal investigator (PI, Co-PI....): Michel P. Coogan
Description of the collaboration: Assistance with cell imaging
Participating entity/entities:
Cardiff University
City participating entity: Cardiff, United Kingdom

Start date: 2011

10 **Type of relationship:** Networks without joint project
Name principal investigator (PI, Co-PI....): J. C. Bünzli
Description of the collaboration: Advicer in lanthanide bioprobes related issues
Participating entity/entities:
Hong Kong Baptist University

Institute of Chemical Sciences and Engineering, Swiss Federal Institute of Technology, Lausanne (EPFL)

Start date: 2008

11 **Type of relationship:** Confirmed publications
Name principal investigator (PI, Co-PI....): David Loyd
Description of the collaboration: Cell imaging studies
City: United Kingdom
Participating entity/entities:
Cardiff university

Start date: 2006

Scientific societies and professional associations

1 **Name of the society:** Royal Society of Chemistry (RSC)
Start-End date: 2006 - 2011

2 **Name of the society:** Swiss National Science Foundation (SNSF)
Start-End date: 2008 - 2009

3 **Name of the society:** Specialized Group of Organometallic Chemistry (GEQO)
Start date: 2016

4 **Name of the society:** Spanish Association of Bioinorganic (AEBIN)
Start date: 2015

5 **Name of the society:** Spanish Royal Society of Chemistry (RSEQ)
Start date: 2015

Co-operation networks

1 **Name of the network:** MetDrugs
Identification of the network: CTQ2015-70371-REDT
Start date: 15/12/2015 **Duration:** 2 years

2 **Name of the network:** CMST COST Action D38
Start date: 01/09/2008 **Duration:** 1 year

Obtained accreditations/recognitions

1 **Description:** Profesora contratada doctora
Accrediting entity: Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** ANECA
Date of recognition: 2019

2 **Description:** Profesora ayudante doctora
Accrediting entity: Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** ANECA
Date of recognition: 25/10/2017

3 **Description:** Profesora universidad privada
Accrediting entity: Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** ANECA
Date of recognition: 25/10/2017

Summary of other achievements

1 **Description of the achievement:** Legal Representative of postdoctoral fellows
Accrediting entity: Universidad de Zaragoza **Type of entity:** University
City accrediting entity: Zaragoza, Aragon, Spain
Conferral date: 15/12/2018

2 **Description of the achievement:** Invitation from Chemistry A European Journal to desing a Frontispiece as well as a Concept Article describing the research line of V. Fernández-Moreira
Conferral date: 07/03/2018

3 **Description of the achievement:** Invitation from Inorganica Chimica Acta to participate in a special Issue " Next generation"
Conferral date: 24/04/2017

4 **Description of the achievement:** Member of the PhD evaluation committee of Dr. Renso Visbal Acebedo
Accrediting entity: Universidad de Zaragoza **Type of entity:** University
Conferral date: 15/07/2015

5 **Description of the achievement:** Invitation from Chemical Communications to write a Feature Article on metal complexes in cell imaging
Conferral date: 2013

6 **Description of the achievement:** Legal Representative of postdoctoral fellows
Accrediting entity: Instituto de Síntesis y Catálisis Homogénea-ISQCH
City accrediting entity: Zaragoza, Aragon, Spain
Conferral date: 15/03/2012

7 **Description of the achievement:** Analyst, 2010, 135, 42 is among the ten most accessed papers in Feb 2010
Accrediting entity: R.S.C. publishing Analyst

8 **Description of the achievement:** Chem. Commun.,2010, 46, 186 is one of ChemComm's most cited articles in 2010

Accrediting entity: R.S.C. Publishing, Chemical Communications