



# Comisión Interministerial de Ciencia y Tecnología

## Curriculum vitae (resumed: 2004-2009)

Last (family) name/s: FLORES SERRANO

DNI: 08963531V

Date of Birth : April 15th, 1964

Name: JUAN CARLOS

Male(M)/Female(F): M

### Current Profesional Situation

Organism: UNIVERSIDAD DE ALCALÁ

Facultad, Escuela o Instituto: FACULTAD DE QUÍMICA

Department./Secc./Unid : DEPARTAMENTO DE QUÍMICA INORGÁNICA

Postal address: Edificio de Farmacia, Campus Universitario, 28871 Alcalá de Henares (Madrid)

Telephone: +34 91 885 4607

Fax: +34 91 885 4683

email: juanc.flores@uah.es

Academic position: Profesor Titular de Universidad

### Research lines (brief description-2-3 lines)

Synthesis of coordination, organometallic, dendrimer and metalodendrimer compounds, and catalytic applications in C-C bond formation reactions, including polymerization, and catalyst recovery under greener operational conditions.

### Academic Degree

Graduation	Centre	Date
CHEMISTRY (Thesis Degree)	UNIVERSIDAD DE ALCALÁ	1987 (Oct. 18th, 88)
Doctorate/Ph.D	Centre	Date
CHEMISTRY	UNIVERSIDAD DE ALCALÁ	Dec. 18th, 1992

### Past professional and research activities

Dates	Position	Institution
1/1/89 – 31/12/90	Research Fellow	REPSOL QUIMICA S.A. – UAH
1/1/91 – 31/12/92	Teaching Assistant	Dpto.Química Inorgánica – UAH
1/1/93 – 31/12/94	Postdoctoral Fellow	Univ. of Massachusetts – USA
1/1/95 – 31/12/97	Senior Researcher	Dpto.Química Inorgánica – UAH
1/1/98 – 07/10/98	Assistant Professor	Dpto.Química Inorgánica – UAH

## Participation in Grants funded by private and public institutions (2004-2009)

Contract title: Estudio y mejora de reactivos y productos organometálicos.

Industry: NUSA IBERICA SA (ref. 139/2004)

Dates: 22/Nov./04 to 21/Nov./05

Responsible: Dres. Javier de la Mata de la Mata and Juan Carlos Flores Serrano

---

Contract title: Preparación y estudio de compuestos metálicos aplicables en el sector de los recubrimientos.

Industry: NUSA IBERICA SA (ref. 149/2005)

Dates: 22/Nov./05 to 21/Nov./06

Responsible: Dres. Javier de la Mata de la Mata and Juan Carlos Flores Serrano

---

Contract title: Compuestos metálicos aplicables en recubrimientos de base acuosa y de alto contenido de sólidos.

Industry: NUSA IBERICA SA (ref. 143/2005)

Dates: 22/Nov./06 to 21/Nov./07

Responsible: Dres. Javier de la Mata de la Mata and Juan Carlos Flores Serrano

---

Project title: Metalodendrimeros y Metalodendrones: Síntesis y Aplicaciones Catalíticas.

Funding Institution: CAM ref. GR/MAT/0733/2004

Dates: Jan./05 to Jan./06

Responsible: Dr. Ernesto de Jesús Alcañiz

---

Project title: Síntesis de dendrimeros y metalodendrimeros. Aplicaciones en catálisis y biomedicina.

Funding Institution: MEC ref. CTQ2005-00795/BQU

Dates: Oct./05 to Sept./08

Responsible: Dr. Ernesto de Jesús Alcañiz

---

Project title: Catálisis con dendrimeros de metales de transición.

Funding Institution: CAM-UAH2005/033

Dates: Jan./05 to Dec./06

Responsible: Dr. Ernesto de Jesús Alcañiz

---

Project title: Construcción molecular mediante procesos catalizados por complejos organometálicos.

Funding Institution: I+D Programme of activities for research groups networks in Madrid, ref CAM : S-0505/PPQ/0328-03

Dates: 2006 to 2010

Group Responsible: Dr. Ernesto de Jesús Alcañiz

Groups Coordinator: Prof. Dr. Pascual Royo Gracia

---

Project title: Química de dendrimeros de metales de transición y catálisis en fase acuosa.

Funding Institution: MICINN ref. CTQ2008-02918/BQU

Dates: Oct./08 to 2Sept./11

Responsible: Dr. Ernesto de Jesús Alcañiz

---

## List of publications in journals listed at JCR (limited to 10, from 2004)

A. Sánchez-Méndez, G. F. Silbestri, E. de Jesús, F.J. de la Mata, J.C. Flores, R. Gómez, P. Gómez-Sal.  
Tris(pyrazolyl)methane ligands: Syntheses and structure of monometallic and metallo-dendritic complexes  
*Eur. J. Inorg. Chem.*, **2004**, 3287

---

V. Amo, R. Andrés, E. de Jesús, F.J. de la Mata, J.C. Flores, R. Gómez, P. Gómez-Sal, J.F.C. Turner  
Neutral and Cationic Aluminum and Titanium Complexes Incorporating Sterically Demanding Organosilicon Ligands  
*Organometallics* **24**, **2005**, 2331

---

J.M. Benito, E. de Jesús, F.J. de la Mata, J.C. Flores, R. Gómez  
Generation effects on the microstructure and product distribution in ethylene polymerization promoted by dendritic nickel catalysts.

*Chem. Comm.*, **2005**, 5217.

---

J.M. Benito, E. de Jesús, F.J. de la Mata, J.C. Flores, R. Gómez.  
Neutral and cationic dendritic palladium(II) complexes containing N,N'-imino-pyridine chelating ligands. Synthesis and their use for the syndiospecific copolymerization of CO/4-tert-butylstyrene.  
*Organometallics*, **25**, **2006**, 3045.

---

J.M. Benito, E. de Jesús, F.J. de la Mata, J.C. Flores, R. Gómez; P. Gómez-Sal  
Mononuclear and dendritic nickel(II) complexes containing N,N'-imino-pyridine chelating ligands: Generation effects on the catalytic oligomerization and polymerization of ethylene.  
*Organometallics* **25**, **2006**, 3876.

---

A. Sánchez-Méndez, J.M. Benito, E. de Jesús, F.J. de la Mata, J.C. Flores; R. Gómez; P. Gómez-Sal.  
Synthesis and <sup>1</sup>H NMR Studies of Paramagnetic Nickel(II) Complexes Containing Bis(pyrazolyl)methane Ligands With Dendritic Substituents.  
*Dalton Trans.* **2006**, 5379.

---

J.F. Bermejo, P. Ortega, L. Chonco, R. Eritja, R. Samaniego, M. Müllner, E. de Jesús, F.J. de la Mata, G. Fernández, J.C. Flores, R. Gómez, M.J. Serranía, M.A. Muñoz-Fernández.  
Water-Soluble Carbosilane Dendrimers: Synthesis Biocompatibility and Complexation with Oligonucleotides. An Evaluation for Medical Applications  
*Chemistry, Eur. J.*, **13**, **2007**, 483.

---

R. Andrés, E. de Jesús, J.C. Flores.  
Catalysts based on palladium dendrimers.  
*New J. Chem.* **31**, **2007**, 1161.

---

A. Sánchez-Méndez, E. de Jesús, J.C. Flores, P. Gómez-Sal.  
Crystal Structures of Poly(aryl ether) Dendrons with Palladium Scorpionate Complexes at Their Focal Point.  
*Inorg. Chem.*, **46**, **2007**, 4793.

---

E. de Jesús, J.C. Flores  
Dendrimers: Solutions For Catalyst Separation and Recycling- A Review  
*Ind. & Eng. Chem. Res.* **47**, **2008**, 7968.

---

### Communications at Symposia and Scientific Meetings (limited to 10, from 2004)

J.M Benito, E. de Jesús, J. de la Mata, J.C. Flores, R. Gómez y P. Gómez-Sal. *Comportamiento en polimerización de metalodendrimeros del grupo 10. XXII Reunión del Grupo Especializado de Química Organometálica*. Ciudad Real (Spain) 12-14 jul, 2004. Poster (ref.: PC11).

---

J. M. Benito, E. de Jesús, F. J. de la Mata, J. C. Flores, R. Gómez, P. Gómez-Sal. *Dendritic Pyridylimine Nickel(II) Complexes: Effect of Dendrimer Generation on Ethylene Oligomerization and Polymerization Catalysis*. **Pre-OMCOS 13**, Paris (France), 15-16 jul, 2005. Poster (ref.: P46)

---

J. M. Benito, E. de Jesús, F. J. de la Mata, J. C. Flores, R. Gómez. *Carbosilane Dendrimers Containing Peripheral Pyridylimine Palladium(II) Complexes: Effect of Dendrimer Generation on the Syndiospecific Copolymerization of CO/4-tert-Butylstyrene*. **XXII International Conference on Organometallic Chemistry**. Zaragoza (Spain), 23-28 jul., 2006, Oral Presentation (ref.:O125)

---

R Andrés, E. de Jesús, J. C. Flores, F. J. de la Mata, A. Sánchez-Méndez, S. Vigo. *Organometallic dendrons: Synthesis, characterization and applications in catalysis*. **5th International Dendrimer Symposium (IDS: 5)** Toulouse (France) 28 ago. -1 sep., 2007. Oral Presentation (ref.:O-33)

---

Sánchez-Méndez, A.; de Jesús, E.; Flores, J. C.; Gómez-Sal, P. *Dendrones (poli(aril éter) con complejos escorpionato metalados en su punto focal*. **1st Simposio Iberoamericano de Química Orgánica SIBEAQO I / XVI Simposio Nacional de Química Orgánica XVI SINAQO**. Mar del Plata – Buenos Aires (Argentina), 11-16 nov., 2007. Poster (ref.: SO-222)

A. Ortiz, E. de Jesús, J. C. Flores, A. Sánchez-Méndez. *Carbenos metálicos dendronizados*. **XXVI Reunión del Grupo Especializado de Química Organometálica**. Santiago de Compostela (Spain), 9-12 sep, 2008. Poster (ref.: PB39)

P. Gómez-Sal, J. C. Flores, E. de Jesús, A. Ortiz, A. Sánchez-Méndez. *Structural studies on Ag(I) N-heterocyclic carbene complexes: From monomers to polymers*. **XXI Congress of the International Union of Crystallography**. Osaka (Japan) 23-31 agos, 2008. Poster (ref.:P.07.01.20; Acta Cryst. (2008). A64, C405)

A. M. Ortiz, A. Sánchez-Méndez, E. de Jesús, J. C. Flores, P. Gómez-Sal, F. Mendicuti. *Complejos de paladio con ligandos carbeno NHC dendronizados*. **II Encuentro de Dendrímeros y Nanociencia (EDEN 2)**. Barcelona (Spain), 5-6 feb., 2009. Oral Presentation (ref.: C12).

G.F. Silbestri, J. C. Flores, E. de Jesús. *Catalytic Hydrosilylation with NHC-Pt(0) Carbenes in a Thermomorphic System*. **15th IUPAC International Symposium OMCOS 15**. Glasgow (UK), 26-30 jul, 2009. Poster (ref.: P248).

A. M. Ortiz, A. Sánchez-Méndez, J. C. Flores, E. de Jesús. *Catalizadores Dendríticos NHC de Paladio*. **XXXII Reunión Bienal de la RSQE**. Oviedo (Spain), 13-18 sep., 2009. Poster (ref.: PG2-56)

## Patents (2004-2009)

Number: P-200501810 (Nº publ. 2 265 291) Date of application: 22 July 2005  
Authors: F.J. de la Mata; R. Gómez; J. C. Flores; E. de Jesús; P. Ortéga; M. A. Muñoz; J. F. Bermejo; M. J. Serranía; G. Fernández; L. Chonco.  
Countries of applicability: Spain

Number: PCT/ES2006/070111 (Nº publ. WO 2007/010080 A3) Date of application: July 2006  
Authors: F.J. de la Mata; R. Gómez; J. C. Flores; E. de Jesús; P. Ortéga; M. A. Muñoz; J. F. Bermejo; M. J. Serranía; G. Fernández; L. Chonco, M. I. Clemente; J. L. Jiménez,  
Countries of applicability: PCT States members

-----  
Extended:

Number: EP 06778464.5 Date of application: Feb. 2006  
Countries of applicability: European Union

Number: Attorney's Docket No. 04386-105245 Date of application: 2008  
Countries of applicability: USA

Number: PI0613739 Date of application: Jan. 2008  
Countries of applicability: Brazil

Number: MX/a/2008/000830 Date of application: Jan. 2008  
Countries of applicability: Mexico

Number: 2 616 092 Date of application: Apr. 2008  
Countries of applicability: Canada

Number: 2008106762 Date of application: Feb. 2008  
Countries of applicability: Rusia

Number: 200680026871.4 Date of application: Feb. 2008  
Countries of applicability: China

Number: . 20332284/RMH Date of application: Jan. 2008  
Countries of applicability: Australia

Number: . 2008 521998 Date of application: 2008  
Countries of applicability: Japan

---

## Supervision of Students and/or Researchers (2004-2009)

### Master Thesis:

Alba María Ortiz Álvarez. *Carbenos N-Heterocíclicos Dendronizados*. Inorganic Chemistry Department-UAH. **2008**.

Pilar Pérez Puente. *Complejos Metálicos con Ligandos Quelato Carbeneo-N-Heterocíclico/Pirroluro*. Inorganic Chemistry Department-UAH. **2009**.

Jeanette Verónica Carrera Cevallos. *Síntesis de complejos dendríticos de Ni con ligandos carbeneo N-heterocíclico: comportamiento en la reacción de Suzuki*. Inorganic Chemistry Department-UAH. **2009**.

### PhD Thesis:

José María Benito Peñalba. *Dendrímeros funcionalizados en su periferia con metales de transición unidos a través de enlaces metal-nitrógeno*. Universidad de Alcalá. **2005**.

Alberto Sánchez Méndez. *Estructuras dendríméricas de metales de transición con ligandos de tipo "escorpionato" y carbeneo N-heterocíclico*. Universidad de Alcalá. **2008**.

Alba María Ortiz Álvarez. *Catalizadores dendríticos con dominios hidrofóbicos e hidrofílicos*. Universidad de Alcalá. In progress since **2008**.

Pilar Pérez Puente. *Catalizadores con ligandos carbeneo-N-heterocíclico/pirroluro y grupos lábiles*. Universidad de Alcalá. In progress since **2009**.

### Postdoctoral Students:

Gustavo F. Sibestri. *Nuevos complejos hidrosolubles de platino(0) con ligandos N-heterocíclico para su aplicación como catalizadores en síntesis orgánica en fase acuosa*. Universidad de Alcalá. **2007-2009**.

## Other relevant merits (2004-2009)

- Referee of Journals: Eur. J. Inorg. Chem.; Organometallics; Dalton Trans.; Inorg. Chem.; New J. Chem.; and J. Mol. Catal. A; Chem.
- Member of the Spanish Royal Society of Chemistry
- Head of a Research Center for Technical-Support at the University of Alcalá. 2002-2005
- Member of the Standardization Spanish Agency for Nanotechnology AENOR (AEN/GET 15) since 2007.
- Secretary of the Pharmacy School at the University of Alcalá, since 2009.

### • Committees and International Representation

Committee: Spanish Delegate since 2007 in the Working Party on Manufactured Nanomaterials (WPMN) - nominated by the Ministry of Environment of Spain.

Organization: Organisation for Economic Co-operation and Development (OECD)

Subject: WPMN established in 2006 as a subsidiary body of the OECD Chemical Committee, aiming to promote international co-operation in human health and environmental safety related aspects of manufactured nanomaterials (MN), in order to assist in the development of rigorous safety evaluation of nanomaterials.

Dates: .- 2<sup>nd</sup> Meeting of the WPMN, 25-27 April 2007, Berlin (Germany)  
.- 3<sup>rd</sup> Meeting of the WPMN, 28-30 Nov. 2007, Paris (France)

- .- OECD Workshop on the Sponsorship Programme for the Testing of Manufactured Nanomaterials, 24-25 April 2008, Tokyo, (Japan)
  - .- OECD Workshop on the Sponsorship Programme for the Testing of Manufactured Nanomaterials, 19-21 Nov. 2008, Busan, (Korea)
  - .- OECD Workshop on the Sponsorship Programme for the Testing of Manufactured Nanomaterials, 24-25 Mar. 2009, Paris, (France)
  - .- 5<sup>th</sup> Meeting of the WPMN, 4-6 Mar. 2009, Paris (France)
  - .- 6<sup>th</sup> Meeting of the WPMN, 28-29 Oct. 2009, Paris (France)
-