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## AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2013

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**Nombre:** DE LA RUBIA ROMERO, MARIA DE LOS ANGELES

**Referencia:** RYC-2013-12549

**Área Científica:** Tecnología Química

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### Título:

Digestión anaerobia de residuos biomásicos

### Resumen de la Memoria:

The applicant began her experience as a researcher at the University of Cadiz as a fellowship holder on a research project related to wastewater treatment (1997-1998) and operating a lab-scale anaerobic system treating wine vinases (November 1996-January 1998). In 1998 she started her PhD with a fellowship granted from the Spanish Ministry of Education and Science and presented her PhD in Chemical Engineering in the same University in 2003. The results obtained were published in 5 papers, 4 of them in Journals in the top 25% of the Chemical Engineering category as AICHE J and Process Biochem (cited more than 160 times, all of them as a first and corresponding author) and a book. Afterwards, she stayed at UCA with a contract to support teaching and research and in 2004 as a grant-holder to develop a project related to anaerobic digestion of municipal solid waste. Between 1997 and 2004 she participated in 5 research projects and 3 research contracts and collaborated as a lecturer giving laboratory classes related to water and wastewater treatment subjects. Later she has continued collaborating with UCA developing 4 more projects and lecturing in a master programme since 2006/2007 academic year. Besides that she has supervised a PhD student who presented his thesis in 2011. The results were published in 4 scientific papers (she being the corresponding author of all of them). In 2005, she took up a postdoctoral grant funded by ♦Junta de Andalucía♦ at Alicante University (UA), where she developed a new research line: the treatment of natural water by ultra- and nanofiltration. She published 4 papers (Q1 in Chemical Engineering, two of them as a first author and all of them as corresponding author) cited more than 125 times; she participated in 2 research projects and supervised a PhD student. She lectures in a Master♦s programme since the academic year 2006/2007. From 2007 to 2012 the applicant was working as a researcher at the Instituto de la Grasa (CSIC) with two postdoctoral contracts: ♦Juan de la Cierva♦ (2007-2010) and ♦JaE-Doc♦ (2010-2012) where she participated in 5 research projects related to the anaerobic digestion of agro-industrial residues, two of them with European foundation (FP6, FP7) and 2 research contracts with companies, as a result 18 articles were published (cited more than 265 times). During this period she participated in the organization of several proficiency testing related to COD, methane potential and the parameters of anaerobic digestion control. In 2009, she spent 8 months at the University of Southampton (UK) with a grant financed by the program "Jose Castillejo", there she participated in a project and published an article. Currently, she is employed by the University of Southampton, investigating the anaerobic digestion of wastewater and algal biomass in the frame of the ALL-GAS FP7 project. She has presented a total of 59 communications in thirty-four national and international congresses. She is a reviewer of 34 SCI journals and research projects evaluator of two national agencies (Spanish and Romanian). She has been invited to give 4 speeches. She has acquired much experience in the proposal of research projects having begun in 2002, writing scientific papers, supervising and or training PhD students.

### Resumen del Currículum Vitae:

The applicant is a graduate from Cádiz University (UCA) in Marine Sciences and a PhD in Chemical Engineering at the above mentioned University (2003). She has been a staff member of the University of Southampton, Faculty of Engineering and the Environment, investigating the anaerobic digestion of wastewater and algal biomass in the frame of the ALL-GAS FP7 project, since May 2012. Previously, she was a grant holder on several research projects (1997-1998; 2002-2003; 2004-2005), and on behalf the Spanish Ministry of Education and Science (1998-2002) and a staff member at the University of Cadiz (2003-2004). She has been a researcher at the Instituto de la Grasa in Sevilla (CSIC) with two postdoctoral contracts: Juan de la Cierva (2007-2010) and JAE-Doc (2010-2012). She has gone through two postdoctoral stays at the Universities of Alicante (UA) (2005-2007) and Southampton (January-August 2009). She has been involved in 18 research projects funded by competitive processes since 1997, in subjects related to anaerobic digestion, waste water, natural water and composting. 2 of them regional, 1 from the University of Southampton, funded by the British Government, 3 funded by the European Commission (FP6, FP7), and the rest national (Plan Nacional, PETRI, MMA, MARM). She has participated as a researcher and/ or advisor in 5 research contracts with various companies. She has published 32 articles in SCI Journals (27 of them in the top 25% of their category), being first author in 12 of them and corresponding author in 19 of them, with an h factor of 14 and quoted more than 565 times. Her line of work has essentially been anaerobic digestion. She is the author of a book, two-chapter books and 10 national articles. She has presented 59 communications in national and international congresses. She has supervised a Doctoral Thesis which obtained a classification of Summa Cum Laude and European Mention. She has obtained several technological results from transfer activities related to anaerobic digestion and the evaluation of the adsorptive capacity of granular activated carbon. She has participated in the organisation of several proficiency testing related to chemical oxygen demand determination, methane potential and parameters related to anaerobic digestion control,



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with the participation of between 15 and 26 international groups (2009-2012). She has attended 15 Courses and/ or Seminars, 2 of them related to the improvement of teaching skills. She has collaborated as a lecturer in laboratory classes from 1997 to 2004, subjects within the following BSc degrees: Chemistry, Marine Sciences and Environmental Sciences. She has lectured in 3 courses about laboratory training for University specialists in Water and Waste Water treatment, and in several Master's programmes: ♦Civil works♦ UCA 2000/2001, "Sustainable Management and Water Technologies" UA, ♦Integral Water Management♦ UCA, both from the academic year of 2006/2007 to present. She is accredited by ANECA and/ or AGAE to be contracted as Non-civil servant tenured Lecturer, Post-Dissertation Doctoral Teaching Assistant and Private University Professor. She is an evaluator of research projects (Romanian Council (9) and ANEP (3)) and reviewer of 34 SCI journals. She has participated in two scientific committees of national congresses.



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**Nombre:** PINILLA IBARZ, JOSE LUIS  
**Referencia:** RYC-2013-12494  
**Área Científica:** Tecnología Química  
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### Título:

Catalytic conversion of hydrocarbons into high value-added products

### Resumen de la Memoria:

The research career of the candidate, developed during his pre and postdoctoral stages in Spain and UK, represents a highly innovative contribution to the scientific fields of Energy, Catalysis and Nanomaterials. Among the different research topics that the candidate has tackled during his career, his main research line has been focused on environmentally sustainable process based on the catalytic conversion of hydrocarbons from both fossil (natural gas, heavy oils) and renewable (biogas, bio-oils) origin. The overriding aim has been the development of cleaner, more efficient processes for the conversion of these feedstocks into valuable fuels, chemicals and power. In order to develop these enhanced energy conversion processes, the candidate has developed a suite of different advanced catalysts, including ceramic carbon-coated monoliths, mesoporous alumina supported catalysts, activated carbon supported nanoparticles and carbon nanotubes supported catalysts. Among the processes addressed within this research line are included:

-Catalytic decomposition (CD) of methane-rich streams for the co-production of CO<sub>2</sub>-free hydrogen and advanced carbon materials. He actively contributed to a better understanding of the CD of methane and biogas using carbon and transition metal based (nickel, iron, cobalt) catalysts, gained a profound knowledge of the characteristics of the nanostructured carbon produced (carbon nanofibers (CNF) and carbon nanotubes (MWCNT)) and provided solutions to the issues related to the scaling up of the process by using fluidized bed (semi-batch and continuous mode), rotary bed reactors and solar reactors.

- Advanced Heavy Oil Upgrading. This research involved the development of new catalysts with larger porosity for hydroprocessing heavy, ultra-heavy and unconventional oils as well as the design of novel upgrading routes, such as catalytic steam cracking and oxidative cracking in supercritical water conditions.

- Bio-oils hydrotreating. This work aimed to develop novel non-precious metal catalytic systems supported on advanced carbon materials (CNF, MWCNT, few layers graphene oxide) to improve the physical-chemical properties of bio-oils produced from biomass fast pyrolysis to obtain transportation fuels and platform chemicals.

Another important research line dealt with the potential applications of nanocarbons, including CNF and MWCNT produced during the CD processes, synthetic graphite obtained by heat treatment of CNF and MWCNT, graphene materials obtained by CNF and MWCNT unzipping/chemical exfoliation and inorganic/nanocarbon hybrid materials. These include their use as catalytic supports for catalytic conversion of hydrocarbons and in energy storage using CNF and MWCNT derived materials as anode in Lithium-ion batteries.

The research lines of the candidate have been carried out thanks to the development of an extended network of collaborative research with Spanish and other overseas institutions and reflects the multidisciplinary aspect of his research career, which has led to successful joint funding applications and a number of scientific contributions, as reflected in the enclosed CV.

### Resumen del Currículum Vitae:

José Luis Pinilla graduated in Chemical Engineering at the University of Zaragoza (UZ) in 2005. He started his research career at the Instituto de Carboquímica (ICB-CSIC) where he carried out his Master Thesis (awarded in the IV Spanish University Prize of Scientific Research Introduction) working in NO<sub>x</sub> abatement. After that he carried out his Ph.D. studies at ICB-CSIC under the supervision of Dr R. Moliner and Dr I. Suelves with an I3P-CSIC pre-doctoral grant co-funded by Repsol YPF. He obtained his PhD in Chemical Engineering (cum laude) in October 2008 from UZ. His Thesis work focused on the catalytic decomposition of methane (CDM), aimed to produce hydrogen and carbon nanofibers (CNF). He won the ♦Best Young Researcher Award♦ which acknowledged the best Thesis presented by a member of the Spanish Carbon Group (GEC) between 2008 and 2010. After completing his PhD, he expanded his research interest to the production of multiwalled carbon nanotubes (MWCNT) by CDM (work awarded as ♦Best oral presentation♦ in the 3rd World Congress of Young Scientists on Hydrogen Energy Systems (Torino, 2009) and the exploration of potential applications for the carbonaceous structures produced (additive for composites and anode in lithium-ion batteries) under the frame of CENIT Sphera project (Gas Natural, Minister of Industry-CDTI). In 2010 he was granted with a project to carry out a short stay at Solar Platform of Almeria (PSA-CIEMAT). From September 2010 the candidate completed a two-years postdoctoral fellowship at the prestigious Chemical Engineering Department of Imperial College London (UK) thanks to a Spanish Scientists Mobility Program contract (Ministry of Education), under the supervision of Dr M. Millan. There, the applicant focused on the upgrading of heavy oil fractions by different approaches (steam catalytic cracking, catalytic hydrocracking, and oxidative cracking using water at



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supercritical conditions). The candidate started a second postdoctoral stay at ICB-CSIC in 2012. Currently, his main research interests are focused on the production of advanced materials based on nanocarbons (CNF, MWCNT, graphene materials, inorganic/carbon hybrids) and their utilization for energy conversion storage and as catalytic support for bio-oil upgrading.

He is co-author of 39 publications (19 as first author) in SCI peer-reviewed high impact factors journals: Int. J. Hydrogen Energy (11), Fuel (7), J. Power Sources (4), Appl. Catal., A (3), Chem. Eng. J. (3), Appl. Catal., B (2), Carbon (2), Energy Fuels (2), Fuel Process. Technol. (1), Microporous Mesoporous Mater. (1), Mater. Chem. Phys. (1), J. Nat. Gas Chem. (1), J. of Catal. (1), with 485 citations (h index=13). The applicant has 3 patents and 3 book chapters. He has contributed to more than 70 conference communications (9 oral presentations, 1 invited keynote). He has participated in 11 research projects (regional, national, bilateral and European funded), one of them as principal investigator (Access to PSA-CIEMAT). The applicant has co-directed 16 Final Year Projects of B.S. and M.S. chemical engineering students from UZ. He acts as reviewer for high-impact factor journals such as Int. J. of Hyd. En., J. Anal. Appl. Pyrolysis and Energy Fuels. He is member of the Spanish Carbon Group (GEC).



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**Título:**

Desarrollo de procesos de aprovechamiento y valorización de residuos y biomasa en fluidos no convencionales

**Resumen de la Memoria:**

Ese mismo año me uní al grupo de Investigación de Procesos a Alta Presión del Departamento de Ingeniería Química de la Universidad de Valladolid. Comencé mi tesis doctoral titulada **Oxidación en agua supercrítica: desarrollo a escala piloto y modelado de un reactor de pared transpirable y estudio termodinámico de sistemas clave** en enero del 2002 con una beca FPU del MEC. La presenté en Julio de 2005, recibiendo posteriormente el premio Extraordinario de Doctorado. Obtuve el doctorado europeo con dos estancias de 3 meses en la Universidad Técnica de Delft, en el laboratorio de Termodinámica aplicada y Equilibrio de Fases donde determiné experimentalmente el equilibrio de fases de sistemas acuosos en presencia de sales. En 2006 me fue concedida una beca Postdoctoral del MEC que me permitió trabajar en la Universidad Técnica de Delft durante dos años en el grupo del Profesor Cor J. Peters desarrollando un proceso de reacción enzimática integrada con la separación en un medio CO<sub>2</sub>-líquido iónico, en colaboración con el Grupo de Química Orgánica y Biocatálisis de la misma Universidad. Allí me formé en la preparación y conservación de líquidos iónicos, la medida y modelado del equilibrio de fases de sistemas con líquidos iónicos y en la preparación de mezclas LI/enzima y evaluación de su actividad. Desde Febrero de 2008 me reincorporo al Grupo de Procesos a Alta Presión de la Universidad de Valladolid, primero como Juan de la Cierva (Dic. 2008- Feb. 2011) y desde entonces como Ayudante Doctor. En esta etapa mi investigación se ha centrado en el desarrollo de procesos de valorización de residuos y biomasa usando fluidos no convencionales, principalmente en tres líneas de investigación:

- 1) Oxidación en agua Supercrítica/Llamas hidrotermales. He colaborado en tres proyectos de investigación con empresas. He trabajado en el desarrollo de un nuevo reactor para la oxidación en agua supercrítica a escala piloto que trabaja usando llamas hidrotermales y que está enfocado a la producción de energía a partir de residuos. Este reactor se ha patentado.
- 2) Obtención selectiva de químicos a partir de biomasa por hidrólisis en agua sub y supercrítica. A diferencia de la mayor parte de experimentos de este tipo que se desarrollan en batch, se ha construido una instalación capaz de desarrollar estos procesos en continuo, controlando estrictamente la temperatura y el tiempo de residencia (reduciéndolo en algunos casos a 3 milisegundos). De esta manera se puede obtener compuestos derivados de la biomasa con alta selectividad. Por ejemplo: 96% azúcares con 30 ms a 400°C y 23 MPa, 60% gliceraldehído en 20 s a 400°C y 23 MPa.
- 3) Procesado de biomasa en medio CO<sub>2</sub> + líquido iónico. La principal limitación de los líquidos iónicos en el procesado de biomasa es su elevada viscosidad. El CO<sub>2</sub> puede disolverse en la mezcla reduciendo su viscosidad, así como su punto de fusión y facilitando de esta manera el procesado de biomasa.

**Resumen del Currículum Vitae:**

Como resultado de mi actividad investigadora he participado en 17 proyectos competitivos, 5 de ellos europeos. Además participo en la acción europea COST EXIL (Echange in Ionic Liquids).

He realizado un total de 32 meses de estancias en Universidades extranjeras: 6 meses de estancia predoctoral en la Universidad Técnica de Delft (Países Bajos), 24 meses de estancia posdoctoral en esta Universidad financiada con una beca Posdoctoral del MEC y dos estancias breves de 1,5 meses y 1 mes en la Ruhr Universidad (Alemania) y la Universidad de Kumamoto (Japón).

He publicado 3 capítulos de libros y 37 trabajos en revistas internacionales, 31 de ellos indexados en el JCR y de ellos 28 en el primer cuartil de sus respectivas clasificaciones. Soy primera autora de 24 de ellos. 3 de ellos han estado entre los más leídos de sus respectivas revistas. He recibido un número total de 322 citas (factor H=10), excluyendo autocitas de todos los autores.

He presentado más de 50 trabajos en conferencias nacionales e internacionales, al menos 20 de ellos han sido presentaciones orales y en al menos 10 de ellos he actuado como ponente. He de destacar una keynote en el 13th European Meeting on Supercritical Fluids, 9-12 Octubre, 2011, en la Haya. En ese mismo congreso fui invitada a actuar como moderadora en la sesión de Oxidación en Agua Supercrítica. Y también fui moderadora en una sesión de Flucomp 2012. IV Reunión de Expertos en Tecnologías de Fluidos Comprimidos (Madrid, Junio 2012). Además fui ponente invitada en el 2nd International Seminar on Engineering Thermodynamics of Fluids. Universitat Rovira I Virgili (2010).



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He dirigido una tesis doctoral y actualmente estoy dirigiendo otras cuatro, dos de las cuales se presentarán en verano de este año. Además he dirigido 17 proyectos a estudiantes, entre proyectos de investigación, proyectos fin de carrera y fin de master.

He recibido el ICHEME Water Award 2003 y un accesit en los premios 3M 2003 en la modalidad de medio ambiente.

He evaluado más de 100 trabajos en revistas internacionales como el J. Supercrit Fluids, J Hazardous Materials y J Chem Eng Data entre otros. He pertenecido al comité científico de dos conferencias internacionales ♦1er Congreso Iberoamericano de fluidos supercríticos PROSCIBA 2007♦ and ♦5th INTERNATIONAL SYPOSIUM IN CHEMICAL ENGINEERING AND PRESSURE PROCESSES♦. He evaluado 30 propuestas de proyectos de investigación para la ANEP.

He impartido más de 800 horas de docencia en la Universidad de Valladolid, un 40% en enseñanzas de master. Entre ellas destaco mi participación en el Master en Investigación Intercampus en Ingeniería Termodinámica de Fluidos en el que he impartido un curso ♦Líquidos iónicos: propiedades y aplicaciones♦ que he impartido en las universidades de Valladolid y Rovira y Virgili desde el año 2010. He participado en dos proyectos de innovación docente y he realizado dos estancias dentro del marco del programa Sócrates Erasmus a la Universidad de Birmingham y la Ruhr Universität.

Por todo esto se me ha concedido al acreditación de Profesor contratado doctor y de Profesor Titular por la ANECA.



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### Título:

Desarrollo de procesos biotecnológicos más sostenibles

### Resumen de la Memoria:

One of the most important current awarenesses is the fact that the world's oil supplies are not limitless. This prompts the chemical and biotechnological industries to explore nature's richness in search of methods to replace petroleum-based products. Furthermore, more strict environmental regulations and growing concerns about this dependence have made bio-based products an appealing alternative both for scientific and industrial community. Therefore, an entire branch of biotechnology, known as 'white biotechnology', is devoted to the use of living cells and enzymes to synthesize products that are easily degradable, require less energy and create less waste during their production.

This field has attracted my attention since the very beginning of my research career, when I bet on the investigation of the production of biocatalysts from mesophilic microorganisms (those that live at temperatures from 20 to 30 °C). Usually, the bottleneck of any industrial process to obtain enzymes is the biological reaction and the downstream processing, and the design of efficient operation units is crucial to make biotechnology competitive against the traditional processes. For these reasons, my first scientific contributions dealt with the study of the operating conditions for maximizing enzyme synthesis. After having detected some important limitations of biomolecules obtained from mesophiles, such as deactivation or denaturation at conventional operating conditions used in industrial processes, I started my PhD in the field of extremophiles. The use of enzymes produced by these microorganisms allows circumventing the typical drawbacks of mesophilic enzymes due to their naturally developed resistance to drastic reaction conditions. Since this, the screening for thermostable enzymes from microorganisms adapted to living in extreme environments is thus an important way to find the right biocatalysts for desired reactions. This aspect was extensively tackled during my PhD thesis, including also a fruitful study stay in the Institut für Technische Mikrobiologie der Technische Universität Hamburg-Harburg, under the supervision of Prof. Dr. h.c. Antranikian, one of the most renowned groups in this field.

Then, my posdoc period (2 years at the Institute of Chemical and Biological Technology in Lisbon) was focused on the introduction of a group of neoteric solvents, called ionic liquids, for biotechnological purposes. The widely renowned experience of the host institute in the ionic liquids field is demonstrated by the important contributions carried out by group of Prof. Dr. Luís Paulo Rebelo, one of the most outstanding leaders within the world of ionic liquids. The current investigations are devoted to the extraction of enzymes from conventional aqueous solutions media where they are usually produced by biological processes.

Finally, my current research lines are mainly four: i) to study the stability and activity of enzymes in ionic liquids; ii) to propose novel systems to remediate effluents containing persistent organic pollutants ; iii) To implement an efficient process to extract biopolymers from natural raw materials iv) To produce extremozymes

### Resumen del Currículum Vitae:

After PhD completion, the candidate has published more than 50 papers (about one third as corresponding author) in top-ranked journals in areas such as CHEMICAL ENGINEERING, THERMODYNAMICS, or CHEMISTRY MULTIDISCIPLINARY and 1 patent related with the one of the main areas of expertise of the candidate: the remediation of polluted effluents. The research results have also been spread by means of more than 80 communications in conferences (including 3 invited lectures). During his research activities, he has collaborated with different international research institutions such as the Technical University of Hamburg-Harburg (Germany, 2004), Instituto de Tecnología Química e Biológica (Portugal, 2009-2010), Fungal Biodiversity Centre (The Netherlands, 2010) and the Technological Institute of Sonora (Mexico, 2011). The applicant also participated in different regional, national and international research projects (18) with a total amount of more than 2 million €, being the PI of one recently approved by the Spanish Ministry of Economy and Competitiveness (120000 €). The candidate has also been involved at many different levels of the education process, including the supervision of 2 PhD thesis, 4 Master thesis, 2 invited researchers (PhD student and posdoc), and 3 final year degree projects, and he has been appointed as one of the top-ten best lecturers in the University of Santiago de Compostela. He is currently supervising 3 PhD thesis, 2 Master thesis and 3 final year degree projects. He is currently engaged in the coordination of new subjects of the degree of Chemical Engineering at the framework of the European Higher Education Area (EHEA).

The applicant has demonstrated independence in research in different areas. In each of them, he worked independently but with advice from supervisors and collaborators, showing potential to acquire new knowledge and research skills, and being able to be easily integrated in each research team. This is clearly demonstrated by the research stays that the candidate has carried out outside his university (more than 3 years in different laboratories: 7 papers from a 2 years-collaboration with the group of Luis Paulo Rebelo, and 3 paper from his-1- year collaboration (under Juan de la Cierva Program) with the Department of Chemical Engineering



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at the University of Santiago de Compostela). The independence capability of the candidate is reflected by the fact that he has been corresponding author in more than 15 papers recently published as a consequence of the co-supervision of 2 PhD theses. Besides this, he usually acts as reviewer for more than 30 international scientific journals since 2010 (Biochemical Engineering Journal; Bioresource Technology; Food and Bioprocess Technology, Journal of Chemical Thermodynamics, Separation and Purification Technology, Industrial Engineering & Chemistry Research, among others) and international projects (Superior Council of the National Fund for Scientific and Technological Development -FONDECYT- of Chile), and conferences (Session Chair in the 5th International Conference on Industrial Bioprocesses 2012).

In summary, the previous experience of the candidate in completely distinct areas of scientific knowledge corroborates his capacity to learn, to adapt to different working environments, and to overcome the obstacles that new challenging projects can generate.





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### Título:

Reducción de la contaminación producida por metales en los procesos de producción de energía

### Resumen de la Memoria:

Mi carrera investigadora comenzó en 1998 gracias a una beca pre-doctoral concedida en el Instituto Nacional del Carbón (INCAR), Oviedo (España), centro del Consejo Superior de Investigaciones Científicas (CSIC) que desarrolla su labor en el área de Ciencia y Tecnología Químicas. En 2004 obtuve el grado de doctor por la Universidad de Oviedo (España) con la tesis titulada "Retención de compuestos gaseosos de Hg, As y Se en sorbentes sólidos: Aplicación a la combustión y la gasificación de carbón" con la máxima calificación (sobresaliente cum laude). Durante este periodo colaboré en el desarrollo de varios proyectos nacionales e internacionales que tienen por objetivo común la reducción de la contaminación originada en los procesos de producción de energía a partir de carbón. Mi labor investigadora se centró fundamentalmente en la reducción de emisiones de mercurio originadas durante la combustión y gasificación de carbón usando sorbentes sólidos. El mercurio es un elemento altamente tóxico y persistente en el medio ambiente y las plantas de combustión de carbón son una de las mayores fuentes antropogénicas de emisiones de mercurio, de ahí la necesidad imperiosa de reducir tales emisiones. En 2006, gracias a una beca de investigación concedida por la Royal Society (Reino Unido), realicé una primera estancia posdoctoral de tres meses en la Facultad de Ingeniería de la Universidad de Nottingham (Reino Unido) con el proyecto titulado "Desarrollo de nuevos sorbentes para la captura de Hg en la combustión del carbón". En 2007, con la financiación del Ministerio Español de Educación y Ciencia a través del programa de contratos posdoctorales en el extranjero, realicé una segunda estancia de veintidós meses, durante el periodo de 2008 a 2010, en la Universidad de Nottingham para un proyecto enfocado en la principal línea de mi investigación: la captura de mercurio. En dicho periodo comencé a codirigir mis dos primeras tesis doctorales. A lo largo de mi carrera investigadora he combinado tanto el trabajo de investigación, en colaboración con diferentes grupos de reconocido prestigio a nivel nacional e internacional en el campo de los elementos traza y la combustión de carbón, como el trabajo con empresas, lo que me ha permitido aplicar el conocimiento adquirido en los proyectos de investigación a la resolución de problemas reales en las industrias. En 2010 me reincorporé al INCAR a través del programa JAE (Junta para Ampliación de Estudios) dirigido a doctores del Consejo Superior de Investigaciones Científicas y de tres años de duración. Desde este momento he continuado con la investigación sobre la reducción de las emisiones de mercurio gracias a la financiación de numerosos proyectos en los que participo tanto en la elaboración de la propuesta de los mismos, como en la difusión de los resultados a través de la publicación de artículos científicos y la participación activa en congresos y conferencias. Todo ello teniendo siempre presente que uno de los ocho objetivos fijados en la última reunión del 2013 por el programa de medio ambiente de las Naciones Unidas Minamata Convention on Mercury es la reducción de las emisiones de mercurio por la combustión de carbón.

### Resumen del Currículum Vitae:

#### CURRICULUM VITAE

1. Apellidos: López Antón  
2. Nombre: Maria Antonia  
3. Fecha de nacimiento: 31.01.1973  
4. DNI: 10885426D  
5. Situación profesional actual: Investigador contratado  
Organismo: Consejo Superior de Investigaciones Científicas  
Instituto: Instituto Nacional del Carbón (INCAR), CSIC  
Departamento: Procesos químicos en energía y medio ambiente  
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**AYUDAS RAMÓN Y CAJAL  
CONVOCATORIA 2013**

6. Actividades anteriores de carácter científico o profesional:

Puesto	Institución	Fechas
Beca Predoctoral del PFPI	Instituto Nacional del Carbón	1998-2002
Contrato Licenciado I&D	Instituto Nacional del Carbón	2003-2006
Beca Pos-Doc. Extr. Royal Society (U.K)	Universidad de Nottingham (U.K)	2006
Contrato Licenciado I&D	Instituto Nacional del Carbón	2007-2008
Beca Pos-Doc. Extr. del MEC	Universidad de Nottingham (U.K.)	2008-2010
Doctor JAE	Instituto Nacional del Carbón	2010-2013

7. Idiomas

Idioma	Habla	Lee	Escribe
Inglés	B	B	B

8. Participación en Proyectos de I+D financiados en convocatorias públicas	14	
	Internacionales	5
	Nacionales o regionales	9

9. Participación en contratos de I+D de especial relevancia con empresas y /o administración	12
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10. Tesis Doctorales dirigidas	4
(en proceso)	2

11. Trabajos de Investigación o máster dirigidos	2
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12. Estancias en centros extranjeros

Tres meses de experiencia profesional en la Universidad de Nottingham	2006
Veintiún meses de experiencia profesional en la Universidad de Nottingham	2008-2010

13. Publicaciones o Documentos científico técnicos

Publicaciones en revistas en el SCI	46	
(en proceso)		4
Publicaciones en revistas (NO SCI)	3	
Publicaciones en libros	2	
Publicaciones en volúmenes colectivos con ISBN o ISSN	24	
Publicaciones en congresos	51	
Informes científico-técnicos	>200	

14. Otros méritos

Participación en la organización de conferencias internacionales  
Conferencias para cursos de formación predoctoral  
Colaboración con revistas científicas como revisor de artículos



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DESARROLLO E INNOVACIÓN

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E INNOVACIÓN

DIRECCIÓN GENERAL  
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