



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2016

Turno de acceso general

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Título:

Low-cost technologies for waste and wastewater treatment, resource recovery and sustainability assessment

Resumen de la Memoria:

Dr. Marianna Garfí is an internationally recognised expert in low-cost and natural technologies for waste and wastewater treatment, and also in sustainability assessment (mainly life cycle assessment and multi-criteria analysis). She obtained an MSc in Environmental Engineering from the Università di Bologna (Italy) (2005), and she was given the "National award on sustainable consumption and sustainable development" from the ICU Foundation for her MSc Thesis. In 2006 she obtained a fellowship to carry out her Ph.D Thesis at the Università di Bologna (Italy). Her Ph.D Thesis focused on the development of a decision support tool for the selection of sustainable solutions for water and waste management. In 2009 she presented her Ph.D Thesis, obtaining 2 special awards: the "Tattarillo award. International competition for MSc Theses and Ph.D Theses concerning suitable technologies for sustainable development in the South of the World" from the Università di Firenze (Italy) and the "III quality award in research and doctoral Thesis on international cooperation for human development" from the Universidad Politécnica de Madrid (Spain). Afterwards, she started working as a postdoc researcher in the Research Group on Cooperation and Human Development (GRECDH) of the Universitat Politècnica de Catalunya (UPC) (Spain) and she was involved in an international project on bioenergy production. In 2011 Dr. Marianna Garfí obtained a fellowship for young researchers by the Government of Spain (MECD) and joined the Research Group of Environmental Engineering and Microbiology (GEMMA) of UPC. In 2012 she obtained a Juan de la Cierva fellowship from the Government of Spain (MICINN) to continue with her research activities in the same research group. During the last 5 years, she has been involved in 19 national, European and international R+D+i projects. In particular, she has been the Principal Investigator (PI) of 5 projects (2 competitive European projects funded by the European Commission; 2 competitive international projects funded by the Centre for Cooperation Development (CCD-UPC) and 1 non-competitive project funded by URBASER SA.). Moreover, she has been the Co-PI and project manager of 4 European projects. As Principal Investigator and Co-PI of these 9 projects, she has been in charge of the following tasks: obtaining funds; research activity development and coordination; supervision of researchers, students and technicians; management of the funds provided by the funding bodies. Currently, she is leading the research line on natural technologies for waste and wastewater treatment and sustainability assessment (mainly life cycle assessment and multi-criteria analysis). Her research activities aim to improve natural technologies for waste and wastewater treatment (i.e: constructed wetlands; anaerobic digesters; algae-based systems) considering technical, socio-economic and environmental aspects. The final goal is to identify low-cost and sustainable technologies for waste and wastewater treatment that can be implemented in different contexts (e.g. developed or developing countries) and that are capable of producing valuable products and reducing environmental impacts.

Resumen del Currículum Vitae:

Dr. Marianna Garfí obtained an MSc in Environmental Engineering from the Università di Bologna (Italy) (2005) and in 2009 she presented her Ph.D Thesis at the same University. After her Ph.D Thesis defense, she joined the Research Group on Cooperation and Human Development (GRECDH) of the Universitat Politècnica de Catalunya (UPC) (Spain). In 2011 she obtained a fellowship for young researchers from the Government of Spain (MECD) and joined the Group of Environmental Engineering and Microbiology (GEMMA) of UPC. In 2012 she obtained a Juan de la Cierva fellowship from the Government of Spain (MICINN). Currently, she is leading the research line on natural technologies for waste and wastewater treatment and sustainability assessment at GEMMA-UPC. Her research activities aim to improve low-cost and nature-based technologies for waste and wastewater treatment considering technical, socio-economic and environmental dimensions. Dr. Marianna Garfí has participated in 21 R+D+i projects funded by competitive calls from public or private entities. 9 of these projects were funded by the European Commission and 4 were funded by the Spanish Government. She has also participated in 5 R+D non-competitive projects with private entities. She has been the Principal Investigator of 5 R+D+i projects (2 competitive European projects funded by the European Commission; 2 competitive international projects funded by the Centre for Cooperation Development (CCD-UPC) and 1 non-competitive project funded by URBASER SA.). Moreover, she has been the Co-PI and project manager of 4 European projects. Her research has resulted in 48 publications. 22 of them have been published in ISI listed peer-reviewed journals, with an H-index of 13. Additionally, she has been the co-author of 3 book chapters and 1 book. She has disseminated the results of the research activities through 49 presentations in national and international conferences, workshops and seminars. 4 of the oral presentations were invited presentation. Dr. Marianna Garfí has supervised 19 MSc Theses and 8 BSc final projects. She has also been supervising 5 Ph.D students, 4 of them being Marie Skłodowska-Curie fellows.



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Dr. Marianna Garfí has participated in the scientific and organising committees of 2 international conferences. She has been the guest editor of a SI of the Science of the Total Environment (Elsevier) and an independent expert for projects evaluation in the call ERANETMED 2016.

Dr. Marianna Garfí has been in charge of the preparation of numerous international, European and national projects, obtaining funds for 9 of them as PI or Co-PI. She has also been involved in several cooperation and international platforms (e.g. WssTP, EIP Water, PTEA, RedBioLAC).

Since she joined GEMMA, Dr. Marianna Garfí has been responsible for teaching activities in different courses, specifically in the field of water treatment and supply, and Life Cycle Assessment. Additionally, she participated in 3 innovative teaching projects.

In 2011 she obtained a favourable report issued by the Catalan University Quality Assurance Agency (AQU Catalunya) for applying to lecturer positions (Acreditación de Profesor Lector), and in 2013 she received the research accreditation (Acreditación de Profesor Agregado (contratado doctor)) from the same Agency in recognition of proven abilities in teaching and research.



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Turno de acceso general

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Título:

Tailored solutions for enhancing the performance of existing structures: sustainable retrofitting and updating of concrete structures

Resumen de la Memoria:

From the beginning of my career as researcher I have been involved in the construction field, within the Civil Engineering and Architecture area of knowledge. Nowadays, I am temporary researcher at IETcc-CSIC hired within the national project BIA 2014-56825-JIN (Reparación preventiva y sostenible de hormigón armado en infraestructuras de transporte), achieved as responsible researcher (IP) in 2015. From October 2016, I am Chair of COST Action CA15202.

My professional growth as experienced researcher has been highly defined by my success in different national competitive calls: 1) FPU Predoctoral Grant (IETcc-CSIC, 2003-2006), with 9 months of predoctoral stages, 2) Postdoctoral contract for international mobility (LISE-CNRS, 2009-2011), 3) Juan de la Cierva (JdIC) contract with the first position in Civil Engineering & Architecture area (IETcc-CSIC, 2012-2015), 4) Project BIA 2014-56825-JIN (IETcc, 2015-2018).

In the periods between these competitive contracts, I have been always hired within competitive research projects. Throughout my scientific trajectory I have participated in 20 research projects, both with national and European funding, that have focussed my scientific activity on different topics in line with the priorities of the construction industry: (a) development of environmentally friendly innovative methodologies for the preservation and repair of concrete structures; (b) implementation of non-destructive techniques for durability performance characterization; (c) numerical modelling of passivation/corrosion processes in reinforced concrete for determining the depassivation time.

From 2012 I am leading my own line of research Tailored solutions for enhancing the performance of existing structures: sustainable retrofitting and updating of concrete structures, started with the Juan de la Cierva contract and currently consolidated with the financial support of project BIA 2014-56825-JIN (145.000) and COST Action CA15202.

My expertise in the mentioned lines of research has allowed me to be also involved in activities for technology transfer. I have participated in 7 contracts with private funding from different industries leaders in the construction sector, being co-IP in the 3 of them dealing with the topic of my main line of research (31.758).

Resumen del Currículum Vitae:

I am author of 48 scientific contributions, 28 of them included in SCI journals of different categories (from Construction and Building Technology to Materials Science or Electrochemistry). I am the main author of 14 of my SCI contributions. Most them (16/28) have been published in collaboration with other international researchers, at European level (France, Portugal) and with non-European countries (Tunisia, Mexico). My h-index is 11 and I have 316 cites (WOS). I am also co-inventor of a patent with PCT (WO 2010/070174 A1).

But I have not limited the spreading of my scientific contribution only to purely scientific forums; on the contrary, the high technological character of construction research has encourage me to spread the most applied aspects of my research in journals of general interest, such as CPI, translated into 9 languages, Cemento y Hormigón y Gremios Periódico de la Construction, easily accessible journals for professionals of construction industry.

I have 74 contributions to national & international congresses. I have participated in high-quality conferences of different areas of knowledge, as construction (RILEM workshops, ICCRRR, CONSEC), electrochemistry (ISE meetings, EIS, EMCR, GE-RSEQ) and corrosion (EUROCORR) (more detail in the section Work presented in conferences at national and international level of the CV). I have been invited as lecturer by the scientific committee of national congresses and by the organizers of different seminars.

Throughout my scientific career I have been involved in dissemination activities looking for approaching science to society. I have participated in organizing different events such IETcc's contribution in the Semana de la Ciencia (2008), activities for the 80th IETcc anniversary celebration (2014-2015). I have contributed in the elaboration of learning materials (Guide for Nanotechnology Teaching in the Secondary School, 2014) and in giving conferences in dissemination workshops such as the Materials Week (2014).

I am actively involved in training activities: supervision of doctoral thesis (2), Master's Degrees (3) and Advanced Studies Diploma (2) and scientific tuition of university students, both from national (4) and international (9) universities.

Concerning the international activities, I am Chair of COST Action CA15202 and I have contributed in bilateral projects for international collaboration with Tunisia (22P/02), Portugal (2004PT20004), Morocco (2004MA2004) and France (HF2008-0095). I have participated in a European project within the FP6 Research Program (ESDRED project). I have also made different stages in high-level international research centres (6 months predoctoral and 2 years postdoctoral training). Nowadays, I have continuous dynamic collaborations with different groups of research, both at national and international level, based on the exchange of students and on the common participation in international committees such as RILEM SCI Committee.