



**UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH**

Contractació d'investigadors distingits

**Acord CG/2019/04/22, de 4 de juliol de 2019, del
Consell de Govern, pel qual s'aprova la contractació
d'investigadors distingits**

Vicerectorat de Política Científica

- Document amb l'informe favorable de la Comissió de Recerca de 21/06/2019

Amir Abdollahi

CONTACT INFORMATION	Laboratory of Computational Methods and Numerical Analysis (LaCàN) Department of Civil and Environmental Engineering School of Civil Engineering Universitat Politècnica de Catalunya (UPC BarcelonaTech) Campus Nord C2-203 Jordi Girona 1 E-08034 Barcelona, Spain
RESEARCH INTERESTS	Computational mechanics, electromechanical materials and devices, solar cells, fracture mechanics, machine learning, robotics
EDUCATION	Universitat Politècnica de Catalunya , Barcelona, Spain Ph.D., Civil Engineering, October 2012 <ul style="list-style-type: none">• <i>Special doctoral award for one of the best PhD theses of 2012-2013</i>• Thesis Topic: <i>Phase-field modeling of fracture in ferroelectric materials</i>• Adviser: Professor Irene Arias• Area of Study: Computational Mechanics Yamaguchi University , Yamaguchi, Japan M.E., Mechanical Engineering, February 2008 <ul style="list-style-type: none">• Thesis Topic: <i>Finite element analysis of surface acoustic wave microsensors</i>• Adviser: Professor Zhongwei Jiang Isfahan University of Technology , Isfahan, Iran B.S., Mechanical Engineering, February 2004 <ul style="list-style-type: none">• <i>Outstanding student award</i>• Final Project Topic: <i>Design and development of a comprehensive omni directional soccer player robot</i>• Adviser: Professor Saeed Ziai-Rad
CURRENT ACADEMIC APPOINTMENTS	Visiting Lecturer , Universitat Politècnica de Catalunya 09/2016 – present Department of Civil and Environmental Engineering <ul style="list-style-type: none">• Coordinate and lecture several courses in the Erasmus Mundus Master's in Computational Mechanics, the Master's in Civil Engineering with a specialisation in Computational Engineering, and the Bachelor's in Civil Engineering• Senior researcher on the project: "Enabling flexoelectric engineering through modeling and computation" funded by the European Research Council• Supervise Master's and PhD students• Give presentations in leading international conferences in the field of computational mechanics and collaborate in international projects
PREVIOUS ACADEMIC APPOINTMENTS	Postdoctoral Researcher , Catalan Institute of Nanotechnology 01/2015 – 09/2016 Oxide Nanophysics Group <ul style="list-style-type: none">• Conduct research on application of computational models to explore nanoscale flexoelectricity• Provide support in supervising postgraduate students• Participate in interview panels to select appropriate PhD candidates

Postdoctoral Researcher, Universitat Politècnica de Catalunya 10/2012 – 12/2014
 Laboratory of Computational Methods and Numerical Analysis

- Conduct research on computational evaluation of flexoelectricity in dielectric solids
- Participate in national and European projects and contribute to the attainment of a competitive research funding from the European Research Council (ERC)
- Give presentations in leading international conferences in the field of computational mechanics
- Supervise Bachelor students for final career projects
- Advise early-stage PhD students on academic planning and opportunities

LEADERSHIP
EXPERIENCES

Co-founder of Robotics Center, Isfahan University of Technology 2000 – 2004
 Department of Mechanical Engineering

- *Four awards in International Robotics Competition (Robocup)*
- Leader of the robotics team, consisting of ten Bachelor's students in Mechanical, Electrical and Computer Engineering
- Design and development of fully autonomous soccer player robots

Co-founder of ROBOKIT Co., Isfahan 2004 – 2014
 Isfahan Science and Technology Town

- *Over 300,000 sales of robot kits*
- Design and production of educational robot kits
- Engagement with diverse research groups, student cohort, and industrial sectors

REFEREED
JOURNAL
PUBLICATIONS

(Scopus > 430 cites, h-index = 12; Google Scholar > 620 cites, h-index = 14)

Journal	# papers	Impact Factor (Quartile)
Nature Nanotechnology	1	37.49 (Q1)
Advanced Materials	2	21.95 (Q1)
Nature Communications	1	12.35 (Q1)
Physical Review Letters	1	8.839 (Q1)
Nanoscale	1	7.233 (Q1)
Archives of Computational Methods in Engineering	1	6.605 (Q1)
Acta Materialia	3	6.036 (Q1)
Physical Review B	2	3.813 (Q2)
Journal of the Mechanics and Physics of Solids	1	3.566 (Q1)
Smart Materials and Structures	1	2.963 (Q1)
Other	7	

Total: 21 papers (13 Q1; 15 First Author)

- [1] Abdollahi, A., Domingo, N., Arias, I., Catalan, G. "Converse flexoelectricity yields large piezoresponse force microscopy signals in non-piezoelectric materials". *Nature Communications* **10**, 1266. doi:10.1038/s41467-019-09266-y
- [2] Abdollahi, A., Vasquez-Sancho, F., Catalan, G. "Piezoelectric mimicry of flexoelectricity". *Physical Review Letters* **121**, 205502 (2018). doi:10.1103/PhysRevLett.121.205502
- [3] Vasquez-Sancho, F., Abdollahi, A., Damjanovic, D., Catalan, G. "Flexoelectricity in bones". *Advanced Materials* **30**, 1705316 (2018). doi:10.1002/adma.201705316
 Video Abstract: <https://www.youtube.com/watch>

- [4] Cordero-Edwards, K., Domingo, N., Abdollahi, A., Sort, J., Catalan, G. "Ferroelectrics as smart mechanical materials". *Advanced Materials* **29**, 1702210 (2017). doi:10.1002/adma.201702210
- [5] Bhaskar, U., Banerjee, N., Abdollahi, A., Wang, Z., Schlom, D. G., Rijnders, G., Catalan, G.A. "A flexoelectric microelectromechanical system on silicon". *Nature Nanotechnology* **11**, 263 - 266 (2016). doi:10.1038/nnano.2015.260
- [6] Bhaskar, U., Banerjee, N., Abdollahi, A., Solanas, E., Rijnders, G., Catalan, G. "Flexoelectric MEMS: towards an electromechanical strain diode". *Nanoscale* **8**, 1293 - 1298 (2016). doi:10.1039/C5NR06514C
- [7] Abdollahi, A., Arias, I. "Constructive and destructive interplay between piezoelectricity and flexoelectricity in flexural sensors and actuators". *Journal of Applied Mechanics* **82**, 121003 (2015). doi:10.1115/1.4031333
- [8] Abdollahi, A., Peco, C., Millan, D., Arroyo, M., Arias, I., Catalan, G. "Fracture toughening and toughness asymmetry induced by flexoelectricity". *Physical Review B* **92**, 094101 (2015). doi:10.1103/PhysRevB.92.094101
- [9] Abdollahi, A., Millan, D., Peco, C., Arroyo, M., Arias, I. "Revisiting pyramid compression to quantify flexoelectricity: A three-dimensional simulation study". *Physical Review B* **91**, 104103 (2015). doi:10.1103/PhysRevB.91.104103
- [10] Abdollahi, A., Peco, C., Millan, D., Arroyo, M., Arias, I. "Computational evaluation of the flexoelectric effect in dielectric solids". *Journal of Applied Physics* **116**, 093502 (2014). doi:10.1063/1.4893974
- [11] Abdollahi, A., Arias, I. "Three-dimensional simulation of crack propagation in ferroelectric polycrystals: effect of combined toughening mechanisms". *Acta Materialia* **65**, 106 - 117 (2014). doi:10.1016/j.actamat.2013.11.016
- [12] Abdollahi, A., Arias, I. "Conducting crack propagation driven by electric fields in ferroelectric ceramics". *Acta Materialia* **61**, 7087 - 7097 (2013). doi:10.1016/j.actamat.2013.07.050
- [13] Abdollahi, A., Arias, I. "Phase-field modeling of crack propagation in piezoelectric and ferroelectric materials with different electromechanical crack conditions". *Journal of the Mechanics and Physics of Solids* **60**, 2100 - 2126 (2012). doi:10.1016/j.jmps.2012.06.014
- [14] Abdollahi, A., Arias, I. "Crack initiation patterns at electrode edges in multilayer ferroelectric actuators". *Smart Materials and Structures* **21**, 094011 (2012). doi:10.1088/0964-1726/21/9/094011
- [15] Abdollahi, A., Arias, I. "Numerical simulation of intergranular and transgranular crack propagation in ferroelectric polycrystals". *International Journal of Fracture* **174**, 3 - 15 (2012). doi:10.1007/s10704-011-9664-0
- [16] Abdollahi, A., Arias, I. "Phase-field simulation of anisotropic crack propagation in ferroelectric single crystals: Effect of microstructure on the fracture process". *Modeling and Simulation in Materials Science and Engineering* **19**, 1 - 13 (2011). doi:10.1088/0965-0393/19/7/074010
- [17] Abdollahi, A., Arias, I. "Phase-field modeling of the coupled microstructure and fracture evolution in ferroelectric single crystals". *Acta Materialia* **59**, 4733 - 4746 (2011). doi:10.1016/j.actamat.2011.03.030

- [18] Abdollahi, A., Jiang, Z., Arabshahi, S. "Evaluation on mass sensitivity of SAW sensors for different piezoelectric materials using finite element analysis". *IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control* **54**, 2446 - 2455 (2007). doi:10.1109/TUFFC.2007.558
- [19] Ziai-Rad, S., Janabi-Sharifi, F., Daneshpanah, M., Abdollahi, A., Ostadi, H., Samani, H. "A practical approach to control and self-localization of an omni-directional mobile robot". *WSEAS Transactions on Systems and Control* **3**, 413 - 424 (2008). www.wseas.us/e-library/27-367
- [20] Samani, H., Abdollahi, A., Ostadi, H., Ziai-Rad, S. "Design and development of a comprehensive omni directional soccer player robot". *International Journal of Advanced Robotic Systems* **1**, 191 - 200 (2004). doi:10.5772/5635
- INVITED REVIEW ARTICLES [21] Abdollahi, A., Arias, I. "Phase-field modeling of fracture in ferroelectric materials". *Archives of Computational Methods in Engineering* **22**, 153 - 181 (2014). doi:10.1007/s11831-014-9118-8
- BOOK CHAPTERS [22] Abdollahi, A., Samani, H. "An efficacious method to assemble a modern multi-modal robotic team: dilemmas, challenges, possibilities and solutions". In: *Introduction to Modern Robotics*, ch. 7 (2012), ISBN 978-1-463789-428. iConcept Press. <https://www.iconceptpress.com/book/>
- [23] Daneshpanah, M., Abdollahi, A., Ostadi, H., Samani, H. "Comprehensive omni-directional soccer player robots. Robotic Soccer". In: *Robotic Soccer*, ch. 18 (2007), ISBN 978-3-902613-21-9. I-Tech Education and Publishing. doi:10.5772/5139
- [24] Abdollahi, A. "Autodesk inventor 3D modeling software for mechanical engineers". In: *A Key to Some of the Software Packages for Analytical Mechanics*, 203 - 224 (2005). ISBN 964-8617-45-7. Tose Amoozesh Publications.
- CONFERENCE PUBLICATIONS [25] Abdollahi, A., Arias, I. "Modeling and simulation of conducting crack propagation in ferroelectric single crystals under purely electrical loading". In: *Proceedings of the 12th International Conference on Computational Plasticity*, pp. 400 - 406, 2013.
- [26] Abdollahi, A., Arias, I. "A phase-field fracture model of ferroelectric materials under electro-mechanical loading". In: *Proceedings of the ASME 2011 Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, pp. 297 - 301, 2011. doi:10.1115/SMASIS2011-4960
- [27] Abdollahi, A., Arias, I. "Numerical simulations of Vickers indentation crack growth in ferroelectric single crystals: Effect of microstructure on the fracture process". In: *Proceedings of the 11th International Conference on Computational Plasticity*, pp. 514 - 520, 2011.
- [28] Abdollahi, A., Jiang, Z., Arabshahi, S. A. "Evaluation on mass sensitivity of SAW sensors for different piezoelectric materials Using finite element analysis". In: *Proceedings of the 16th IEEE International Symposium on the Applications of Ferroelectrics*, 2007. doi:10.1109/ISAF.2007.4393386
- [29] Ziai-Rad, S., Janabi-Sharifi, F., Daneshpanah, M., Abdollahi, A., Ostadi, H., Samani, H. "A practical approach to control and self-localization of Persia omni-directional mobile robot". In: *Proceedings of the 2005 IEEE/RSJ International Conference on Intelligent Robots and Systems*, pp. 3473 - 3479, 2005. doi:10.1109/IROS.2005.1545090

- [30] Abdollahi, A., Arias, I. "The role of flexoelectricity in ferroelectric domain wall fracture". In: *55th Annual Technical Meeting of the Society of Engineering Science (SES)*, Madrid, Spain, October 10 - 12, 2018.
- [31] Abdollahi, A., Arias, I. "An electromechanical fracture toughening mechanism in mineralized biocomposites". In: *55th Annual Technical Meeting of the Society of Engineering Science (SES)*, Madrid, Spain, October 10 - 12, 2018.
- [32] Abdollahi, A., Arias, I. "Manifestations of flexoelectricity in the fracture mechanics of dielectrics and ferroelectrics". In: *10th European Solid Mechanics Conference*, Bologna, Italy, July 2 - 6, 2018.
- [33] Abdollahi, A., Arias, I. "A computational study of flexoelectricity in nanostructures". In: *11th World Congress on Computational Mechanics*, Barcelona, Spain, July 20 - 25, 2013.
- [34] Abdollahi, A., Arias, I. "Three-dimensional phase-field simulation of crack propagation in ferroelectric polycrystals". In: *11th World Congress on Computational Mechanics*, Barcelona, Spain, July 20 - 25, 2013.
- [35] Abdollahi, A., Arias, I. "A computational study of fracture in multilayer ferroelectric actuators". In: *3rd International Conference on Computational Modeling of Fracture and Failure of Materials and Structures*, Praga, Czech Republic, June 5-7, 2013.
- [36] Abdollahi, A., Arias, I. "Phase-field modeling of fracture in ferroelectric materials". In: *Advances in Computational Mechanics (ACM 2013)*, San Diego, United States of America, February 24-27, 2013.
- [37] Abdollahi, A., Arias, I. "Numerical simulation of 3-D crack propagation in ferroelectric polycrystals: effect of combined toughening mechanisms". In: *6th European Congress on Computational Methods in Applied Sciences and Engineering*, Vienna, Austria, September 10-14, 2012.
- [38] Abdollahi, A., Arias, I. "Phase-field modeling of fracture in electromechanical materials: from theory to application". In: *10th World Congress on Computational Mechanics*, Sao Paulo, Brazil, July 8-13, 2012.
- [39] Abdollahi, A., Arias, I. "Coupled phase-field modeling of fracture and microstructure evolution in ferroelectric materials". In: *2nd International Conference on Computational Modeling of Fracture and Failure of Materials and Structures*, Barcelona, Spain, June 6 - 8, 2011.
- [40] Abdollahi, A., Arias, I. "On the effect of crack face boundary conditions on the fracture mechanics of ferroelectric materials". In: *5th International Symposium on Defect and Material Mechanics*, Sevilla, Spain, June 27 - July 1, 2011.
- [41] Abdollahi, A., Arias, I. "Twin toughening in ferroelectric materials: Effect of microstructure on fracture process". In: *5th International Conference on Multi-scale Materials Modeling*, Freiburg, Germany, October 4-8, 2010.
- [42] Abdollahi, A., Arias, I. "Modeling and simulation of coupled microstructure and fracture evolution in ferroelectric materials". In: *16th US National Congress on Theoretical and Applied Mechanics*, State College, PA, United States of America, June 27 - July 2, 2010.
- [43] Abdollahi, A., Arias, I. "A computational study of fracture in ferroelectric single crystals". In: *10th International Conference on Computational Plasticity*, Barcelona, Spain, September 2-4, 2009.

- INVITED TALKS [44] Abdollahi, A. Enriched continuum models with moving discontinuities in electromechanical materials. *The University of Melbourne*, Australia, May 28, 2018.
- [45] Abdollahi, A. Phase-field modeling of fracture in ferroelectric materials. *Massachusetts Institute of Technology*, MIT Special Materials Seminar, Cambridge, United States of America, November 2, 2012.
- PATENTS [46] Abdollahi, A., Jiang, Z. "Micro-piezoelectric sensor provided by adding thickness mode oscillation to surface acoustic wave sensor", *Laboratory for Expression and Retrieval of Patents of Japan*, JP2009257860A, 2009.
- [47] Abdollahi A., Moballegh H., Ostadi, H., Taebi, H. "ROBOKIT (Educational Robot Kits)", *Iran Intellectual Property Office*, 257854-J, 2004.

ADVISING AND MENTORING

Graduate Students

- **Alice Mocci**, PhD Student, Computational Mechanics, 2016–
Thesis topic: Computational modeling of electromechanical materials at small scales
- **Maryam Rahbaralam**, Master's Student, Data Science, 2018–2019
Thesis topic: From data to decision: A machine learning framework for predictive maintenance of Barcelona water distribution network
- **Nikhil Dave**, Master's Student, Computational Mechanics, 2017–2018
Thesis topic: Modeling of flexoelectricity in soft dielectrics at finite strains
- **Salik Shaikh**, Master's Student, Computational Mechanics, 2016–2017
Thesis topic: Effect of flexoelectricity on elasticity characterisation by nanoindentation

Undergraduate Students

- **Jordi Moliner Martínez**, Civil Engineering, 2015–2016
Final project topic: Flexoelectricity in nanobeams under torsion
- **Oscar Monge Víllora**, Engineering Physics, 2014–2015
Final project topic: Towards a two dimensional model of surface piezoelectricity
- **Laia Baqués Gallego**, Applied Mathematics, 2014–2015
Final project topic: Numerical simulation of flexoelectric cantilever actuators

TEACHING EXPERIENCE

Lecturer **September 2016 to present**
 Universitat Politècnica de Catalunya, Barcelona, Spain

Responsibilities

- Taught (in English) the following courses to Erasmus Mundus Master's students in Computational Mechanics (MCM), Master's students in Computational Engineering (MCE) and Bachelor's students in Civil Engineering (BCE).

Course Topic	Year	Program	Student Evaluation	University Average
Computational Mechanics Tools	2016-17	MCM	4.68	3.6
	2017-18*		4.86	3.7
	2018-19*		4.29	3.97
Phase-field Modeling	2016-17	MCM	-	3.6
	2017-18		5	3.7
	2018-19		4.8	3.97
Programming for Engineering and Science	2016-17	MCM	4	3.6
	2017-18		4.75	3.7
Computational Engineering for Design and Operation	2016-17	MCE	4	3.6
	2017-18*		4	3.7
	2018-19*		4.57	3.97
Numerical Modelling	2018-19	BCE	Ongoing	Ongoing

* Coordinator

Achievements

- Designed a new course module "Phase-field modeling" which was integrated in the official program of the Erasmus Mundus Master's in Computational Mechanics
- Developed new tutorials for practical industrial problems using Finite Element Analysis software (Abaqus, SAP2000, and MATLAB PDE Toolbox) to help students understand the significance and implications of computational modeling for industrial applications
- Developed C++ and MATLAB routines to assist students in improving their programming skills in Computational Mechanics
- Updated Virtual Learning Environments for distance and on-line students
- Delivered a high quality learning experience to students which was met with positive feedback by official university evaluation

Teaching Assistant **September 2004 to February 2005**
Isfahan University of Technology, Isfahan, Iran

Responsibilities

- Taught "Autodesk Inventor", a computer-aided design application for 3D mechanical design and simulation, as a practical part of the "Machine Design" course to undergraduate students

Instructor **February 2003 to February 2005**
Isfahan Mathematics House, Isfahan, Iran

Responsibilities

- Introduced "Robotics" to secondary school students to interest them in Science, Technology, Engineering and Mathematics

UNIVERSITY
SERVICE

Faculty Evaluation Committee **September 2017 to present**
Laboratory of Computational Methods and Numerical Analysis, Barcelona, Spain

- Developed a new faculty evaluation program which integrates data from professional activities to provide meaningful evaluative information

PROFESSIONAL
SERVICE

Referee Service

- *Computer Methods in Applied Mechanics and Engineering*
- *Computational Materials Science*
- *Smart Materials and Structures*
- *International Journal of Solids and Structures*
- *Engineering Fracture Mechanics*
- *Theoretical and Applied Fracture Mechanics*
- *Physical Review B*
- *Physical Review Letters*
- *Physical Review Applied*
- *Nonlinearity Journal*
- *Archive of Mechanics*
- *Sensors*
- *Energies*
- *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*

PROJECT
PARTICIPATION

Project Title	Financing Entity	Reference	Amount Granted €	Duration	Principal Investigator
Mètodes Numèrics en Ciències Aplicades i Enginyeria	Agency for Management of University and Research Grants (AGAUR)	2005SGR-00917	49K	2008-2009	Antonio Huerta
Modelos de Campo de Fase para Problemas de Discontinuidad Libre: Metodos Computacionales y Aplicaciones en Fractura, Materiales Ferroelectricos y Membranas Biologicas	Spanish Ministry of Science, Innovation, and Universities	DPI2010-19145 DPI2011-26589	24K 180K	2011-2012 2012-2015	Irene Arias
Predictive Models and Simulations in Nano- and Biomolecular mechanics: a Multiscale Approach	European Research Council	240487	1.5M	2009-2014	Marino Arroyo
Flexoelectricity	European Research Council	308023	1.5M	2013-2017	Gustau Catalan
Flexoelectricity Engineering through Modelling and Simulation	European Research Council	679451	1.5M	2016-2021	Irene Arias
Mètodes Numèrics en Ciències Aplicades i Enginyeria	Agency for Management of University and Research Grants (AGAUR)	2017SGR-1278	66K	2017-2019	Pedro Diez

GRANTS

Project Title	Financing Entity	Reference	Amount Granted €	Duration	Principal Investigator
Experimental Research and Modelling of Microstructural Interactions and Motion of Lead-free Ferroelectric Domains	Spanish Ministry of Science, Innovation, and Universities (José Castillejo Mobility Grant)	CAS18/00294	10K	06/2019-08/2019	Amir Abdollahi
Enabling Flexo-Photovoltaics through Modeling and Computation (FlexoPVComp)	Spanish Ministry of Science, Innovation, and Universities	RTI2018-101662-B-I00	181K	2019-2021	Irene Arias Amir Abdollahi

AWARDS AND
HONOURS

Universitat Politècnica de Catalunya, Barcelona, Spain

- Special Doctoral Award for one of the best PhD theses of 2012–2013
- PhD Research Scholarship, 2008–2012

Spanish Society on Numerical Methods in Engineering (SEMNI)

- Finalist of SEMNI award to the best PhD thesis on Numerical Methods in Engineering, 2012

European Community on Computational Methods in Applied Sciences (ECCOMAS)

- ECCOMAS 2012 Congress Scholarship

Ministry of Education, Science and Technology of Japan (MEXT),

- Japanese Government Research Scholarship (Monbukagakusho), 2005–2007

Isfahan University of Technology, Isfahan, Iran

- Outstanding Student Award, 2003

Robot Soccer World Cup (RoboCup)

- Technical Challenge Award in the Middle Size League, Portugal 2004
- 2nd place in the Middle Size League, Germany 2004
- 3rd place in the Middle Size League, Italy 2003
- 3rd place in the Small Size League, Germany 2003

MEDIA COVERAGE

- **Discovery of flexoelectricity in bones**, covered by **ScienceDaily**, **El Periódico**, and **LA VANGUARDIA**
- **Some piezoelectric materials may be 'fakes'**, covered by **UPC** and **ICN2**

MEMBERSHIP

- European Mechanics Society
- Spanish Society on Numerical Methods in Engineering
- European Community on Computational Methods in Applied Sciences

LANGUAGES

- Persian: Native language
- English: Advanced (IELTS Overall Band: 7.5)
- Spanish: Intermediate
- Japanese: Basic

CERTIFICATES

- **Lecturer Accreditation** by the Catalan University Quality Assurance Agency (AQU), issued 02/2016
- **IELTS General Training** - Overall Band Score 7.5, issued 09/2018
- **Machine Learning by Stanford University**, issued by Coursera - 05/2019

EXTRACURRICULAR
ACTIVITIES

- Swimming
- Camping and travelling



Alberto García González

Generated from: Editor CVN de FECYT

Date of document: 22/05/2019

v 1.4.0

708ee5eeee281249b813ba083fa9df9f

This electronic file (PDF) has embedded CVN technology (CVN-XML). The CVN technology of this file allows you to export and import curricular data from and to any compatible data base. List of adapted databases available at: <http://cvn.fecyt.es/>



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.

Fulfilled requirements for the position:

1. A postgraduate and/or doctoral degree awarded at least 4 and at most 7 years before 1 September 2018.

Yes, I defended my PhD in February 2012, between 4 and 7 years before 1st of September 2018.

2. Professional specialization in numerical methods (mathematical modelling) in the field of civil and environmental engineering.

Yes, since 2016 I'm lecturer in 4 modules in numerical methods, numerical modelling and advanced fluid mechanics. I'm also developing all my research activities in the field of numerical methods and modelling with several applications including civil and environmental engineering.

3. More than 2 years of international postdoctoral experiences at top-level international universities and/or research institutions.

Yes, I held two postdoctoral positions abroad for a total of 25 months (2 years and 1 month) at the Dublin City University in Ireland (Department of Mechanical Engineering) and at the Politecnico di Milano in Italy (Department of Chemistry, Material and Chemical Engineering "Giulio Natta").

4. A minimum of 8 articles published in international peer-reviewed journals and/or reviewed monographs in their respective fields of the research.

Yes. I'm co-author of 15 JCR papers, 1 patent and 1 book chapter.

5. Participation and positions of responsibility in funded research projects.

Yes, apart from my previous participation in 6 funded research projects. Currently I participate in another 4 projects of competitive Calls with position of responsibility and PhD students advisory.



6. Participation in teaching activities (preferably at master's degree or PhD level).

Yes, summarising, I participate in 4 modules: 2 for Bachelor's Degree (Geological Engineering, I'm academic coordinator and lecturer) and 2 for Master's degree, Master in Civil Engineering (lecturer), Master Erasmus Mundus in Computational Mechanics Program and Master of Numerical Methods in Engineering (academic coordinator and lecturer). I am also co-advisor of 4 PhD theses, 2 Master theses and 2 Degree Theses. I also participated (2016) in the Doctorate in Bioengineering (Politecnico di Milano) in the module "Mechanobiology" with 4 hours teaching.

7. Guest presentations at international conferences and leading research institutions.

Yes. I was invited as keynote speaker the 12th Workshop on Numerical Methods in Applied Sciences and Engineering (NMASE 2018), 24-25 of January, Castelldefels, Spain. I was invited to give a presentation (January 14th 2019) in Shaoxing (China), for the Consortium "Shaoxing University-Polytechnic University of Catalonia", 11-18 of January 2019. I also was invited to give a seminar in the Faculty of Mathematics and Statistics of the UPC on November 7th 2018. In addition, I have 20 contributions in conferences, 8 national and 12 international.

8. Other merits, such as research visits and positions of responsibility at renowned international institutions, awards and distinctions.

- "Best oral Presentation" of the V CONGRESSO DEL GRUPPO NAZIONALE DI BIOINGEGNERIA (GNB-ESB ITA, 2016).
- European Mention of PhD Thesis and "Extraordinary PhD Thesis Award" (2013), Macro-area of Engineering and Architecture, University of Zaragoza.
- H-index = 9 (Scopus, Author ID: 57202920979).
- Reviewer of scientific indexed Journals.
- Member of the committee in PhD theses dissertations and master theses.



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.

I'm co-author of:

- 15 JCR scientific publications
- 1 patent
- 1 book chapter
- 20 congress contributions

- H-index = 9 in Scopus (Author ID: 57202920979)

Alberto García González

Surname(s): **García González**
Name: **Alberto**
DNI:
Date of birth:
Gender:
Nationality: **Spain**
Country of birth: **Spain**
Aut. region/reg. of birth: **Principality of Asturias**
City of birth:
Land line phone:
Email:
Personal web page: **<https://www.lacan.upc.edu/user/berto-garcia/>**

Current professional situation

Employing entity: Universitat Politècnica de Catalunya **Type of entity:** University
Department: Environmental and Civil Engineering, Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Professional category: Visiting professor (Lecturer)
Start date: 15/09/2016
Type of contract: Temporary employment contract **Dedication regime:** Full time

Previous positions and activities

	Employing entity	Professional category	Start date
1	Politecnico di Milano	Post Doctoral Researcher	01/07/2015
2	Dublin City University	Post Doctoral Researcher	01/08/2014
3	Freelance Research Engineer	Product Development and Research in Computational Mechanics	01/03/2012
4	Instituto Universitario de Investigación en Ingeniería de Aragón (I3A)	Pre-doctoral Researcher	01/09/2008
5	Instituto Universitario de Investigación en Ingeniería de Aragón (I3A)	Grant-assisted student in Computation Mechanics	01/04/2007
6	GAM (General de Alquiler de Maquinaria)	Adjunto a Gerencia	01/08/2006

1 **Employing entity:** Politecnico di Milano **Type of entity:** University
Professional category: Post Doctoral Researcher
Start-End date: 01/07/2015 - 31/08/2016 **Duration:** 14 months
Type of contract: Temporary employment contract
Dedication regime: Full time



Performed tasks: I was hired as a Post-doctoral researcher in mechanobiology on the project "NICHOID: Mechanobiology of nuclear import of transcription factors modelled within a bioengineered stem cell niche" (ERC-Consolidator Grant) at the Laboratory of Biological Structure Mechanics (LaBS), Politecnico di Milano (Italy). In this project, I was the responsible of the applied mathematics branch, aiming at simulating molecular transport between cytoplasm and nucleus in Mesenchymal Stem Cells, under the influence of the nuclear deformation, using experimental analysis by means of both Electron and Confocal Microscopy.

- 2** **Employing entity:** Dublin City University **Type of entity:** University
Professional category: Post Doctoral Researcher
Start-End date: 01/08/2014 - 30/06/2015 **Duration:** 11 months
Type of contract: Temporary employment contract
Dedication regime: Full time

Performed tasks: Postdoctoral Researcher in Biomechanics applied to vascular system. My projects involved several topics and fields such as Magnetic Resonance Imaging (MRI) and Diffusion Tensor Imaging (DTI), computational mechanics, numerical methods, Finite Element Modelling. I was involved in the development of a numerical-experimental protocol, using ex-vivo Magnetic Resonance Imaging (MRI) in collaboration Trinity College Institute of Neuroscience (Trinity College Dublin), postprocessing mechanical anisotropy of vascular soft tissues, and the translation into numerical modelling for finite element simulations.

- 3** **Employing entity:** Freelance Research Engineer
Professional category: Product Development and Research in Computational Mechanics
Start-End date: 01/03/2012 - 31/08/2013 **Duration:** 1 year - 6 months

Performed tasks: - Mechanical designer and finite element analyst as a self employed engineering consultant for companies in automotive industry. Work area: Concept and detail design of Aluminium casting parts, gating systems and moulds (CAD-FEA). - Researcher as external collaborator of the "Applied Mechanics and Bioengineering" group (AMB) of the "Aragón Institute of Engineering Research" (I3A) of the University of Zaragoza (Spain).

- 4** **Employing entity:** Instituto Universitario de Investigación en Ingeniería de Aragón (I3A) **Type of entity:** University Research Institute
Department: Centro Politécnico Superior
City employing entity: Zaragoza, Aragon, Spain
Professional category: Pre-doctoral Researcher
Start-End date: 01/09/2008 - 28/02/2012 **Duration:** 3 years - 6 months
Type of contract: Grant-assisted student (pre or post-doctoral, others)
Dedication regime: Full time

Performed tasks: Researcher in bioengineering-applied computational mechanics as a member of the Aragon Institute of Engineering Research (I3A) (undergraduate student, awarded with a National FPI fellowship). Research topics summary: Computational modelling, simulation and analysis of biological soft tissues and minimally invasive devices: stents and inferior vena cava filters. Experimental mechanical analysis and post-processing of vascular soft tissues. Microstructural study of artery microconstituents by histological and double polarization microscopy techniques. Collaboration with several institutions in the Bioengineering field: - "Unit Minimally Invasive Techniques Group" (GITMI) of the University of Zaragoza (Spain). - "DynaCell Group" (Laboratoire TIMC-IMAG) of the University Joseph Fourier of Grenoble (France). - "Royal Institute of Technology" (KTH) of Stockholm (Sweden).

- 5** **Employing entity:** Instituto Universitario de Investigación en Ingeniería de Aragón (I3A) **Type of entity:** University Research Institute
Department: Centro Politécnico Superior
City employing entity: Zaragoza, Aragon, Spain
Professional category: Grant-assisted student in Computation Mechanics



Start-End date: 01/04/2007 - 31/08/2008

Duration: 1 year - 5 months

Type of contract: Grant-assisted student (pre or post-doctoral, others)

Performed tasks: Researcher in computational mechanics in the Group of Structural Mechanics and Material Modelling (GEMM-I3A) of the University of Zaragoza (Spain). On the one hand I developed my Final Career Project in the biomechanics of human feet (First Class Honor Qualification). And on the other hand, I started in the field of vascular biomechanics that would become the field of my PhD thesis.

6 **Employing entity:** GAM (General de Alquiler de Maquinaria) **Type of entity:** Business

City employing entity: Oviedo, Principality of Asturias, Spain

Professional category: Adjunto a Gerencia

Start-End date: 01/08/2006 - 28/02/2007

Duration: 6 months

Type of contract: Temporary employment contract

Dedication regime: Full time

Performed tasks: Management apprentice in GAM (General de Alquiler de de Maquinaria), North-West Section, Asturias, Spain.



Education

University education

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

University degree: Higher degree

Name of qualification: Industrial Engineer (Mechanics). Ingeniero Industrial Especialidad Ingeniería Mecánica

City degree awarding entity: Gijón, Principality of Asturias, Spain

Degree awarding entity: Escuela Politécnica Superior de Ingeniería de Gijón

Type of entity: University Centres and Structures and Associated Bodies

Date of qualification: 28/09/2007

Doctorates

Doctorate programme: Doctorate program of Computational Mechanics. Programa Oficial de Doctorado en Mecánica Computacional

Degree awarding entity: Universidad de Zaragoza **Type of entity:** University

City degree awarding entity: Zaragoza, Aragon, Spain

Date of degree: 21/02/2012

DEA awarding entity: Universidad de Zaragoza

Date DEA was awarded: 01/02/2010

European doctorate: Yes

Date of certificate: 21/02/2012

Thesis title: Experimental and Numerical Framework for Modelling Vascular Diseases and Medical Devices

Thesis director: Miguel Ángel Martínez Barca

Thesis co-director: Estefanía Peña Baquedano

Obtained qualification: Sobresaliente-Cum Laude

Recognition of quality: Yes

Special doctorate award: Yes

Date of award: 11/02/2013

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
Italian		A1	A1	A1	A1
English		C1	C1	C1	C1
Spanish		C2	C2	C2	C2



Teaching experience

General teaching experience

- 1** **Name of the course:** Numerical Methods
Type of programme: Bachelor's degree
University degree: Geological Engineering
Start date: 2018 **End date:** 2019
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Subject language: Spanish
- 2** **Name of the course:** Numerical Modeling
Type of programme: Bachelor's degree
University degree: Geological Engineering
Start date: 2018 **End date:** 2019
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Subject language: Spanish
- 3** **Name of the course:** Advanced Fluid Mechanics
Type of programme: Master's degree
University degree: Computational Mechanics Program - Currently Numerical Methods in Engineering
Start date: 2018 **End date:** 2019
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Subject language: English
- 4** **Name of the course:** Numerical Modeling
Type of programme: Master's degree
University degree: Civil Engineering
Start date: 2018 **End date:** 2019
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Subject language: English
- 5** **Name of the course:** Numerical Methods
Type of programme: Bachelor's degree
University degree: Geological Engineering
Start date: 2017 **End date:** 2018
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Subject language: Spanish
- 6** **Name of the course:** Numerical Modeling
Type of programme: Bachelor's degree
University degree: Geological Engineering



Start date: 2017 **End date:** 2018
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Subject language: Spanish

7 Name of the course: Advanced Fluid Mechanics
Type of programme: Master's degree
University degree: Computational Mechanics (Erasmus Mundus) - Numerical Methods in Engineering
Start date: 2017 **End date:** 2018
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Subject language: English

8 Name of the course: Numerical Modeling
Type of programme: Master's degree
University degree: Civil Engineering
Start date: 2017 **End date:** 2018
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Subject language: English

9 Name of the course: Numerical Methods
Type of programme: Bachelor's degree
University degree: Geological Engineering
Start date: 2016 **End date:** 2017
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Subject language: Spanish

10 Name of the course: Numerical Modeling
Type of programme: Bachelor's degree
University degree: Geological Engineering
Start date: 2016 **End date:** 2017
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Subject language: Spanish

11 Name of the course: Advanced Fluid Mechanics
Type of programme: Master's degree
University degree: Computational Mechanics (Erasmus Mundus) - Numerical Methods in Engineering
Start date: 2016 **End date:** 2017
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos
Subject language: English

12 Name of the course: Numerical Modeling
Type of programme: Master's degree
University degree: Civil Engineering
Start date: 2016 **End date:** 2017
Entity: Universitat Politècnica de Catalunya **Type of entity:** University
Faculty, institute or centre: Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos



Subject language: English

Experience supervising doctoral thesis and/or final year projects

- 1** **Project title:** Reduced order models for 3D parametric lattice structures: computation and post-processing in portable devices
Type of project: Master Thesis
Co-director of thesis: Pedro Díez Mejía
Entity: Universitat Politècnica de Catalunya-International Centre for Numerical Methods in Engineering (CIMNE)
Student: Gabriel Valdés Alonzo
Date of reading: 2018
- 2** **Project title:** Towards parametric design of cardiovascular stent-valve devices
Type of project: Supervision of Learning Agreement For Traineeships (Master Thesis)
Co-director of thesis: José Félix Rodríguez Matas
Entity: Universitat Politècnica de Catalunya-Politecnico di milano
Student: Gabriele Garavaglia (2 students) Luigi Gianetta
Date of reading: 2018
- 3** **Project title:** Geometric reconstruction of the nuclear membrane of cells acquired with Transmission Electron
Type of project: Supervision of Learning Agreement For Traineeships
Co-director of thesis: Manuela Teresa Raimondi
Entity: Politecnico di Milano(Italy)-Ecole des Mines d'Alès (France)
Student: Cédric Devillers
Date of reading: 2016
- 4** **Project title:** On the use of blender in bioengineering
Type of project: Supervision of Mobility Degree Project
Co-director of thesis: Gabriele Dubini
Entity: Politecnico di Milano
Student: Gauthier Croizat
Date of reading: 2016
- 5** **Project title:** Estudio por elementos finitos de la influencia de parametros geometricos de stents autoexpandibles de Ni-Ti (Nitinol)
Type of project: Final University Project
Co-director of thesis: Miguel Ángel Martínez Barca
Entity: Universidad de Zaragoza
Student: Javier Iglesias Roda
Date of reading: 2010
- 6** **Project title:** Simulacion numérica del comportamiento de dispositivos intravasculares antitrombos para vena cava
Type of project: Final University Project
Co-director of thesis: Miguel Ángel Martínez Barca
Entity: Universidad de Zaragoza
Student: Santiago Lerga Martínez
Date of reading: 2009



- 7** **Project title:** (PhD Thesis on-going) Quantifying uncertainty in complex automotive crashworthiness computational models: development of methodologies and implementation of VPS
Type of project: Doctoral thesis
Co-director of thesis: Pedro Díez Mejía
Entity: Universitat Politècnica de Catalunya-SEAT (Industrial Doctorate)
Student: Marc Rocas Alonso
- 8** **Project title:** (PhD Thesis on-going) Reduced Order Model of 3D-printed Architected Materials
Type of project: Doctoral thesis
Co-director of thesis: Simone Morganti; Ferdinando Auricchio; Pedro Díez Mejía
Entity: Universitat Politècnica de Catalunya-Università degli studi di Pavia
Student: Alberto Pedro Sibileau
- 9** **Project title:** (PhD Thesis on-going) Solid-fluid mixture models for high particulate volume fractions
Type of project: Doctoral thesis
Co-director of thesis: Wolfgang A. Wall; Pedro Díez Mejía; Alberto García González
Entity: Universitat Politècnica de Catalunya-Technical University of Munich
Student: Alessandro Acri
- 10** **Project title:** (PhD Thesis on-going) Validation and verification for fast simulation of acoustics and electromagnetics including data assimilation
Type of project: Doctoral thesis
Co-director of thesis: Jean-Claude Kedzia; Jean-Louis Duval; Domenico Borzacchiello; Francisco Chinesta; Pedro Díez Mejía
Entity: Universitat Politècnica de Catalunya-ESI Group-École Centrale de Nantes (Admore)
Student: Simona Vermiglio
- 11** **Project title:** (Degree Thesis on-going) Dimensionality reduction of nonlinear data in industrial applications via PCA-KPCA
Type of project: Degree Thesis
Co-director of thesis: Pedro Díez Mejía
Entity: Universitat Politècnica de Catalunya-Facultat de Matemàtiques i Estadística
Student: Eduard Badia Robert
- 12** **Project title:** (Degree Thesis on-going) Principal Component Analysis (PCA) for dimensionality reduction of nonlinear data
Type of project: Degree Thesis
Co-director of thesis: Pedro Díez Mejía
Entity: Universitat Politècnica de Catalunya-Facultat de Matemàtiques i Estadística
Student: Aarón Fernández Pinto
- 13** **Project title:** (Master Thesis on-going) Numerical simulation of convection-diffusion process for mechanobiological applications: is geometry affecting cell differentiation?
Type of project: Master Thesis
Co-director of thesis: Pedro Díez Mejía
Entity: Universitat Politècnica de Catalunya-Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos de Barcelona
Student: Pere Calvet Litzell



- 14 Project title:** (Master Thesis on-going) Real time numerical simulation of pollutant transport in urban areas
Type of project: Master Thesis
Co-director of thesis: Pedro Díez Mejía
Entity: Universitat Politècnica de Catalunya-Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos de Barcelona
Student: Claudia Alvarez Pujol

Other activities/achievements not included above

- 1 Description of the activity:** Collaboration in the Doctorate in Bioengineering (Politecnico di Milano) in the module "Mechanobiology" with 4 hours teaching.
Organising entity: Politecnico di Milano-Dipartimento di Elettronica, Informazione e Bioingegneria
Type of entity: University
End date: 23/05/2016
- 2 Description of the activity:** Academic Coordinator (2018/2019) of the courses held in the 3rd year of the Bachelor's Degree in Geological Engineering
Organising entity: Universitat Politècnica de Catalunya
Type of entity: University
- 3 Description of the activity:** Academic Coordinator (form 2016 on) of the module "Advanced Fluid Mechanics" of the Erasmus Mundus Master in Computational Mechanics-Numerical Methods in Engineering
Organising entity: Universitat Politècnica de Catalunya
Type of entity: University
- 4 Description of the activity:** Academic Coordinator (form 2016 on) of the modules "Numerical Methods" and "Numerical Modelling" of the Bachelor's Degree-Geological Engineering
Organising entity: Universitat Politècnica de Catalunya
Type of entity: University
- 5 Description of the activity:** Academic Coordinator of the Erasmus Mundus Master of Science in Computational Mechanics - Academic year 2017/2018
Organising entity: Universitat Politècnica de Catalunya
Type of entity: University

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:** Industrial Doctorate
Degree of contribution: Researcher
Entity where project took place: Universitat Politècnica de Catalunya
Type of entity: University
City of entity: Barcelona, Spain
Name principal investigator (PI, Co-PI....): Pedro Díez Mejía
Funding entity or bodies:
 AGAUR - Agency for Management of University and Research Grants of Catalonia
Type of participation: Team member
Code according to the funding entity: 2017 DI 058



Start-End date: 2018 - 2021

2 Name of the project: Data assimilation for credible engineering simulations

Degree of contribution: Researcher

Entity where project took place: Universitat Politècnica de Catalunya

Type of entity: University

City of entity: Barcelona, Spain

Name principal investigator (PI, Co-PI....): Antonio Huerta Cerezuela

Funding entity or bodies:

Ministry of Economy and Competitiveness

Type of participation: Team member

Code according to the funding entity: DPI2017-85139-C2-2-R

Start-End date: 2018 - 2020

3 Name of the project: NICHOID: Mechanobiology of nuclear import of transcription factors modelled within a bioengineered stem cell niche

Degree of contribution: Researcher

Entity where project took place: Politecnico di Milano

Type of entity: University

City of entity: Milano, Italy

Name principal investigator (PI, Co-PI....): Manuela Teresa Raimondi

Funding entity or bodies:

European Research Council-ERC Consolidator grant

Type of participation: Post-Doctoral Researcher

Name of the programme: Consolidator Grant (CoG), PE8, ERC-2014-CoG

Start-End date: 2015 - 2020

4 Name of the project: In-silico simulation-based engineering for real-time decision making: application to electric grids and automotion

Degree of contribution: Researcher

Entity where project took place: Universitat Politècnica de Catalunya

Type of entity: University

City of entity: Barcelona, Spain

Name principal investigator (PI, Co-PI....): Antonio Huerta Cerezuela

Funding entity or bodies:

Ministry of Economy and Competitiveness

Type of participation: Team member

Code according to the funding entity: DPI2014-51844-C2-2-R

Start-End date: 2015 - 2017

5 Name of the project: Simulation in Engineering and Entrepreneurship Development (SEED)

Degree of contribution: Researcher

Entity where project took place: Universitat Politècnica de Catalunya

Type of entity: University

City of entity: Barcelona, Spain

Name principal investigator (PI, Co-PI....): Pedro Díez Mejía

Funding entity or bodies:

European Commission EACEA Agency

Type of participation: Team member

Name of the programme: Erasmus Mundus Joint Doctorate



Code according to the funding entity: Framework Partnership Agreement 2013-0043 Erasmus Mundus Action 1b

Start-End date: 2013 - 2017

6 Name of the project: Developing of a computational tool for studying fluid-structure interaction in the cardiovascular field. Application to a new cava vein filter prototype

Degree of contribution: PhD Student

Entity where project took place: Universidad de Zaragoza **Type of entity:** University

Name principal investigator (PI, Co-PI....): Miguel Ángel Martínez Barca

Funding entity or bodies:

Ministry of Science & Technology

Type of participation: Team member

Code according to the funding entity: DPI2010-20746-C03-01

Start-End date: 2011 - 2012

7 Name of the project: Modeling and simulation of aging in arteries due to atherosclerosis

Degree of contribution: PhD Student

Entity where project took place: Universidad de Zaragoza **Type of entity:** University

Name principal investigator (PI, Co-PI....): Estefanía Peña Baquedano

Funding entity or bodies:

Ministry of Science & Technology

Type of participation: Team member

Code according to the funding entity: PRI-AIBDE-2011-1216

Start-End date: 2011 - 2012

8 Name of the project: Design and development of a new intravascular device prototype (STENT) with variable radial stiffness for carotid artery stenosis. DPI2007-63254

Degree of contribution: PhD Student

Entity where project took place: Universidad de Zaragoza **Type of entity:** University

Name principal investigator (PI, Co-PI....): Miguel Ángel Martínez Barca

Funding entity or bodies:

Ministry of Science & Technology

Type of participation: Team member

Code according to the funding entity: DPI2007-63254

Start-End date: 2008 - 2010

9 Name of the project: Industrial decision-making on complex production technologies supported by simulation-based engineering (ProTechTion)

Degree of contribution: Researcher

Entity where project took place: Universitat Politècnica de Catalunya **Type of entity:** University

City of entity: Barcelona, Spain

Name principal investigator (PI, Co-PI....): Sergio Zlotnik

Funding entity or bodies:

European Union's EU Framework Programme for Research and Innovation Horizon 2020

Type of participation: Team member

Name of the programme: Marie Skłodowska-Curie Innovative Training Networks/MSCA-ITN-2017



Code according to the funding entity: 764636 — ProTechTion
Start date: 2017

10 Name of the project: Empowered decision-making in simulation-based engineering: Advanced Model Reduction for real-time, inverse and optimization in industrial problem (AdMoRe)

Degree of contribution: Researcher

Entity where project took place: Universitat Politècnica de Catalunya

Type of entity: University

City of entity: Barcelona, Spain

Name principal investigator (PI, Co-PI...): Antonio Huerta Cerezuela

Funding entity or bodies:

European Union Horizon 2020 research and innovation

Type of participation: Team member

Name of the programme: European Union Horizon 2020 research and innovation/Marie Skłodowska-Curie Actions ITN-ETN

Code according to the funding entity: 675919 — AdMoRe — H2020-MSCA-ITN-2015

Start date: 2015

Results

Industrial and intellectual property

Title registered industrial property: Device for clamping samples in mechanical tests on soft tissue

Type of industrial property: Patent of invention

Inventors/authors/obtainers: Alberto García Gonzalez; Carlos Marzo Mainar; Estefanía Peña Baquedano; Miguel Ángel Martínez Barca; Manuel Doblaré Castellano

Entity holder of rights: Universidad de Zaragoza

N° of application: P200930457

Country of inscription: Spain, Aragon

Date of register: 15/03/2013

Conferral date: 05/03/2013

N° of patent: ES2379815 B1



Scientific and technological activities

Scientific production

Publications, scientific and technical documents

- 1** Pedro Díez; Sergio Zlotnik; Alberto García González; Antonio Huerta. Algebraic PGD for tensor separation and compression: an algorithmic approach. *Comptes rendus Mécanique*. 346 - 7, pp. 501 - 514. ELSEVIER FRANCE-EDITIONS SCIENTIFIQUES MEDICALES ELSEVIER, 2018. ISSN 1631-0721

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

Impact source: ISI **Category:** MECHANICS - SCIE

Impact index in year of publication: Impact factor in 2017 (year before publication) = 1.127
- 2** Alberto Sibileau; Alberto García González; Ferdinando Auricchio; Simone Morganti; Pedro Díez. Explicit parametric solutions of lattice structures with proper generalized decomposition (PGD): Applications to the design of 3D-printed architected materials. *Computational Mechanics*. 62 - 4, pp. 871 - 891. SPRINGER, 2018. ISSN 0178-7675

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

Impact source: ISI **Category:** MATHEMATICS, INTERDISCIPLINARY APPLICATIONS - SCIE MECHANICS - SCIE

Impact index in year of publication: Impact factor in 2017 (year before publication) = 2.724
- 3** Alberto García González; Emanuela Jacchetti; Roberto Marotta; Marta Tunesi; José Félix Rodríguez Matas; Manuela Teresa Raimondi. The Effect of Cell Morphology on the Permeability of the Nuclear Envelope to Diffusive Factors. *Frontiers in Physiology*. 9, pp. 925. FRONTIERS MEDIA SA, 2018. ISSN 1664-042X

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

Impact source: ISI **Category:** PHYSIOLOGY - SCIE

Impact index in year of publication: Impact factor in 2017 (year before publication) = 3.394
- 4** Pablo Sáez; Alberto García; Estefanía Peña; Thomas Christian Gasser; Miguel Ángel Martínez. Microstructural quantification of collagen fiber orientations and its integration in constitutive modeling of the porcine carotid artery. *Acta Biomaterialia*. 33 - 15, pp. 183 - 193. ELSEVIER SCI LTD, 2016. ISSN 1742-7061

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

Impact source: ISI **Category:** ENGINEERING, BIOMEDICAL - SCIE MATERIALS SCIENCE, BIOMATERIALS - SCIE

Impact index in year of publication: 6.319
- 5** Mauro Malvè; S. Chandra; Alberto García González; Andrés Mena Tobar; Miguel Ángel Martínez Barca; E. A. Finol; Manuel Doblaré Castellano. Impedance-based outflow boundary conditions for human carotid haemodynamics. *Computer methods in Biomechanics and Biomedical Engineering*. 17 - 11, pp. 1248 - 1260. TAYLOR & FRANCIS LTD, 2014. ISSN 1025-5842

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

Impact source: ISI **Category:** COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS - SCIE ENGINEERING, BIOMEDICAL - SCIE

Impact index in year of publication: 1,770



- 6** Alberto García González; Miguel Ángel Martínez Barca; Estefanía Peña Baquedano. Determination and Modeling of the Inelasticity Over the Length of the Porcine Carotid Artery. *Journal of Biomechanical Engineering*. 135 - 3, pp. 031004 - 031013. ASME, 2013. ISSN 0148-0731
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 1,748
Format: Journal
Category: BIOPHYSICS - SCIE ENGINEERING, BIOMEDICAL - SCIE
- 7** Alberto García González; Santiago Lerga; Estefanía Peña Baquedano; Mauro Malvè; Alicia Laborda; Miguel Ángel de Gregorio; Miguel Ángel Martínez Barca. Evaluation of migration forces of a retrievable filter: Experimental setup and finite element study. *Medical Engineering & Physics*. 34, pp. 1167 - 1176. ELSEVIER SCI LTD, 2012. ISSN 1350-4533
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 1,779
Format: Journal
Category: Science Edition - ENGINEERING, BIOMEDICAL
- 8** Alberto García González; Estefanía Peña Baquedano; Miguel Ángel Martínez Barca. Influence of geometrical parameters on radial force during self-expanding stent deployment. Application for a variable radial stiffness stent design. *Journal of the Mechanical Behavior of Biomedical Materials*. 10, pp. 166 - 175. ELSEVIER SCIENCE BV, 2012. ISSN 1751-6161
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 2,368
Format: Journal
Category: Science Edition - ENGINEERING, BIOMEDICAL
- 9** Mauro Malvè; Alberto García González; Jacques Ohayon; Miguel Ángel Martínez Barca. Unsteady blood flow and mass transfer of a human left coronary artery bifurcation: FSI vs. CFD. *International Communications in Heat and Mass Transfer*. 39 - 6, pp. 745 - 751. PERGAMON-ELSEVIER SCIENCE LTD, 2012. ISSN 0735-1933
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 2,208
Format: Journal
Category: Science Edition - MECHANICS
- 10** Alberto García González; Miguel Ángel Martínez Barca; Estefanía Peña Baquedano. Viscoelastic properties of the passive mechanical behavior of the porcine carotid artery. Influence of proximal and distal positions. *Biorheology*. 49 - 4, pp. 271 - 88. IOS PRESS, 2012. ISSN 0006-355X
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 1,293
Format: Journal
Category: Science Edition - ENGINEERING, BIOMEDICAL
- 11** Alberto García González; Estefanía Peña Baquedano; Alicia Laborda; Fernando Lostalé; Miguel Ángel de Gregorio; Manuel Doblaré Castellano; Miguel Ángel Martínez Barca. Experimental study and constitutive modelling of the passive mechanical properties of the porcine carotid artery and its relation to histological analysis: implications in animal cardiovascular device trials. *Medical Engineering & Physics*. 33 - 6, pp. 83 - 102. (United Kingdom): ELSEVIER SCI LTD, 2011. ISSN 1350-4533
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 1,293
Format: Journal
Category: Science Edition - ENGINEERING, BIOMEDICAL



Impact index in year of publication: 1,623

- 12** Jacques Ohayon; M. Gharib; Alberto García González; J. Heroux; S. K. Yazdani; Mauro Malvè; Philippe Tracqui; Miguel Ángel Martínez Barca; Manuel Doblaré Castellano; G. Finet; R. I. Pettigrew. Is arterial wall-strain stiffening an additional process responsible for atherosclerosis in coronary bifurcations?: in vivo study based on dynamic CT and MRI. American Journal of Physiology-Heart and Circulatory Physiology. 301 - 3, pp. H1097 - H1106. AMER PHYSIOLOGICAL SOC, 2011. ISSN 0363-6135

Type of production: Scientific paper

Format: Journal

Impact source: ISI

Category: Science Edition - CARDIAC & CARDIOVASCULAR SYSTEMS

Impact index in year of publication: 3,708

- 13** Victor Alastrué Vera; Alberto García González; Estefanía Peña Baquedano; Jose Félix Rodríguez Matas; Miguel Ángel Martínez Barca; Manuel Doblaré Castellano. Numerical framework for patient-specific computational modelling of vascular tissue. International Journal for Numerical Methods in Biomedical Engineering. 26 - 1, pp. 35 - 51. JOHN WILEY & SONS LTD, 2010. ISSN 2040-7939

Type of production: Scientific paper

Format: Journal

Impact source: ISI

Category: Science Edition - ENGINEERING, MULTIDISCIPLINARY

Impact index in year of publication: initial Year of the Journal. Impact Factor in 2011 of 1.409

- 14** Alberto García González; Javier Bayod; J. C. Prados-Frutos; M. Losa-Iglesias; K. Jules; R. B. de Bengoa-Vallejo; Manuel Doblaré Castellano. Finite element simulation of flexor digitorum longus or flexor digitorum brevis tendon transfer for the treatment of claw toe deformity. Journal of Biomechanics. 42 - 11, pp. 1697 - 1704. ELSEVIER SCIENCE SA, 2009. ISSN 0021-9290

Type of production: Scientific paper

Format: Journal

Impact source: ISI

Category: Science Edition - ENGINEERING, BIOMEDICAL

Impact index in year of publication: 2,657

- 15** Chapter 9 - Arterial Wall Stiffness and Atherogenesis in Human Coronaries. Biomechanics of Living Organs-Hyperelastic Constitutive Laws for Finite Element Modeling. pp. 193 - 213. Elsevier Ed. Hardcover, 2017. ISBN 9780128040096

Type of production: Book chapter

Format: Book

- 16** Alberto García; José Félix Rodríguez Matas; Manuela Teresa Raimondi. Modeling of the mechano-chemical behaviour of the Nuclear Pore Complex: Current research and perspective. Integrative Biology. 8 - 10, pp. 1011 - 1021. ROYAL SOC CHEMISTRY, 2016. ISSN 1757-9694

Type of production: Review

Format: Journal

Impact source: ISI

Category: CELL BIOLOGY - SCIE

Impact index in year of publication: 3.252

- 17** Alberto García González; Carlos Marzo Mainar; Estefanía Peña Baquedano; Miguel Ángel Martínez Barca; Manuel Doblaré Castellano. Dispositivo de sujeción de muestras en ensayos mecánicos en tejido Blando. ES2379815 B1. Oficina Española de Patentes y Marcas, 2013.

Type of production: Patent

Format: Scientific and technical document or report



Works submitted to national or international conferences

- 1** **Title of the work:** A patient-specific fluid-structure interaction analysis of TAVI procedure
Name of the conference: VIRTUAL PHYSIOLOGICAL HUMAN (VPH2018)
City of event: Zaragoza, Spain
Date of event: 05/09/2018
End date: 07/09/2018
Organising entity: UNIVERSITY OF ZARAGOZA
Giulia Luraghi; José Félix Rodríguez Matas; Alberto García González; Claudio Chiastra; Georgios Liappas; Giulio Stefanini; Francesco Migliavacca.
- 2** **Title of the work:** Verification and validation for fast simulation of acoustics and electro-magnetics including data assimilation
Name of the conference: 6TH EUROPEAN CONFERENCE ON COMPUTATIONAL METHODS (SOLIDS, STRUCTURES AND COUPLED PROBLEMS) 7TH EUROPEAN CONFERENCE ON COMPUTATIONAL FLUID DYNAMICS(ECCM-ECFD 2018)
City of event: Glasgow, United Kingdom
Date of event: 11/06/2018
End date: 15/06/2018
Organising entity: EUROPEAN COMMUNITY ON COMPUTATIONAL METHODS IN APPLIED SCIENCES (ECCOMAS)
S. Vermiglio; Alberto García González; P. Díez; D. Borzacchiello; F. Chinesta.
- 3** **Title of the work:** Solving multiparametric problems with greedy tensor separation and operations: a least squares PGD approach
Name of the conference: FIFTH INTERNATIONAL CONGRESS ON MULTIPHYSICS, MULTISCALE AND OPTIMIZATION PROBLEMS
City of event: Bilbao, Spain
Date of event: 24/05/2018
End date: 25/05/2018
Organising entity: UNIVERSITY OF THE BASQUE COUNTRY UPV/EHU
P. Díez; Alberto García González; Sergio Zlotnik; A. Huerta.
- 4** **Title of the work:** A fluid-structure interaction patient-specific computational methodology to study aortic roots with native calcified valves. (Poster)
Name of the conference: EUROPEAN SYMPOSIUM ON VASCULAR BIOMATERIALS (ESVB2017)
City of event: Strasbourg, France
Date of event: 12/10/2017
End date: 14/10/2017
Organising entity: GEPROVAS
Giulia Luraghi; José Félix Rodríguez Matas; Alberto García González; Claudio Chiastra; Georgios Liappas; Giulio Stefanini; Francesco Migliavacca.
- 5** **Title of the work:** Multiscale Numerical Model of the Strain-Based Permeability of the Nuclear Envelope
Name of the conference: CONGRESSO NAZIONALE SIMAI2016 – BIENNIAL CONGRESS OF THE ITALIAN SOCIETY OF INDUSTRIAL AND APPLIED MATHEMATICS (SIMAI 2016)
City of event: Milan, Italy
Date of event: 13/09/2016
End date: 19/09/2016
Organising entity: THE ITALIAN SOCIETY OF INDUSTRIAL AND APPLIED MATHEMATICS



Alberto García González; E. Jacchetti; J.F. Rodríguez Matas; M.T. Raimondi.

- 6** **Title of the work:** Mechanobiological modeling of the nuclear pore complex
Name of the conference: 12TH WORLD CONGRESS ON COMPUTATIONAL MECHANICS WCCM XII-APCOM VI
City of event: Seoul, Republic of Korea
Date of event: 24/07/2016
End date: 29/07/2016
Organising entity: THE INTERNATIONAL ASSOCIATION FOR COMPUTATIONAL MECHANICS (IACM)
Alberto García González; R. Marotta; M. Tunesi; M.M. Nava; R. Fedele; E. Jacchetti; J.F. Rodríguez Matas; M.T. Raimondi.
- 7** **Title of the work:** Integrated Experimental/computational approach of the Nuclear Pore Complex. (Poster)
Name of the conference: EUROPEAN CHAPTER MEETING OF THE TISSUE ENGINEERING AND REGENERATIVE MEDICINE INTERNATIONAL SOCIETY
City of event: Uppsala, Sweden
Date of event: 28/06/2016
End date: 01/07/2016
Organising entity: TISSUE ENGINEERING AND REGENERATIVE MEDICINE INTERNATIONAL SOCIETY (TERMIS)
Alberto García González; R. Marotta; M. Tunesi; M.M. Nava; R. Fedele; E. Jacchetti; J.F. Rodríguez Matas; M.T. Raimondi.
- 8** **Title of the work:** Experimental/computational approach of the nuclear pore complex mechanics
Name of the conference: CONGRESSO DEL GRUPPO NAZIONALE DI BIOINGEGNERIA
City of event: Naples, Italy
Date of event: 20/06/2016
End date: 22/06/2016
Organising entity: GRUPPO NAZIONALE DI BIOINGEGNERIA and EUROPEAN SOCIETY OF BIOMECHANICS-ITALIAN CHAPTER
Alberto García González; R. Marotta; M. Tunesi; M.M. Nava; R. Fedele; E. Jacchetti; J.F. Rodríguez Matas; M.T. Raimondi.
- 9** **Title of the work:** Microstructural analysis of fiber orientation in swine carotid artery: structural quantification and constitutive modelling
Name of the conference: 7TH WORLD CONGRESS OF BIOMECHANICS
Type of event: Conference
City of event: Boston, United States of America
Date of event: 06/07/2014
End date: 11/07/2014
Organising entity: WORLD COUNCIL OF BIOMECHANICS
Alberto García González; Pablo Saez; Estefanía Peña Baquedano; Thomas Christian Gasser; Miguel Ángel Martínez Barca.
- 10** **Title of the work:** Condiciones de presión basadas en el cálculo de la impedancia para la hemodinámica carotídea
Name of the conference: REUNION ANUAL DEL CAPITULO NACIONAL ESPAÑOL ESB
Type of event: Conference
City of event: Zaragoza, Aragon, Spain
Date of event: 10/11/2011
Organising entity: CAPITULO NACIONAL ESPAÑOL ESB
Mauro Malvè; Alberto García González; Miguel Ángel Martínez Barca.



- 11** **Title of the work:** Evaluation of Migration Forces of a Retrievable Filter: Experimental Setup and Finite Element Study.
Name of the conference: REUNION ANUAL DEL CAPITULO NACIONAL ESPAÑOL ESB
Type of event: Conference
City of event: Zaragoza, Aragon, Spain
Date of event: 10/11/2011
Organising entity: CAPITULO NACIONAL ESPAÑOL ESB
Alberto García González; Santiago Lerga; Mauro Malvè; Alicia Laborda; Miguel Ángel de Gregorio; Miguel Ángel Martínez Barca.
- 12** **Title of the work:** Structural Experimental Characterization and Micro-macro Modelling of Collagen Fiber Distribution in Carotid Arteries (Poster)
Name of the conference: SYMPOSIUM ON COMPUTER MODELS IN BIOMECHANICS: FROM NANO TO MACRO
Type of event: Conference
City of event: United States of America
Date of event: 29/08/2011
Organising entity: INTERNATIONAL UNION OF THEORETICAL AND APPLIED MECHANICS (IUTAM)
Estefanía Peña Baquedano; Alberto García González; Pablo Saez; Thomas Christian Gasser; Miguel Ángel Martínez Barca.
- 13** **Title of the work:** FSI Analysis of a Human Carotid Bifurcation under Impedance-Based Boundary Conditions
Name of the conference: 2ND INTERNATIONAL CONFERENCE ON COMPUTATIONAL & MATHEMATICAL BIOMEDICAL ENGINEERING
Type of event: Conference
City of event: Washington D. C., United States of America
Date of event: 30/03/2011
Organising entity: WASHINGTON UNIVERSITY
Mauro Malvè; S. Chandra; Alberto García González; Miguel Ángel Martínez Barca; E. Finol; Manuel Doblaré Castellano.
- 14** **Title of the work:** Endothelial strain distribution in human left main coronary bifurcation: In vivo study based on dynamic CT and MRI measurements
Name of the conference: 17TH CONGRESS OF THE EUROPEAN SOCIETY OF BIOMECHANICS (ESB)
Type of event: Conference
City of event: Edinburgh, United Kingdom
Date of event: 05/07/2010
Organising entity: EUROPEAN SOCIETY OF BIOMECHANICS
Jacques Ohayon; Gharib. A. M.; Alberto García González; Finet G.; Miguel Ángel Martínez Barca; Pettigrew R. I.
- 15** **Title of the work:** On the Patient-specific computational Modelling of Blood Vessel
Name of the conference: IV CONGRESS ON COMPUTATIONAL BIOENGINEERING (ICCB)
Type of event: Conference
City of event: Bertinoro, Emilia-Romagna, Italy
Date of event: 16/09/2009
Organising entity: MARCO VICECONTI, ISTITUTO ORTOPEDICO RIZZOLI, BOLOGNA, ITALY
Estefanía Peña Baquedano; Víctor Alastrué Vera; Alberto García González; Jose Félix Rodríguez Matas; Miguel Ángel Martínez Barca; Manuel Doblaré Castellano.



- 16** **Title of the work:** Estudio mecánico de la interacción entre stents autoexpandibles de Ni-Ti (Nitinol) sobre tejido cardiovascular en técnicas de angioplastia carotídea
Name of the conference: IX CONGRESO DE METODOS NUMERICOS EN LA INGENIERIA
Type of event: Conference
City of event: Barcelona, Catalonia, Spain
Date of event: 29/06/2009
Organising entity: SOCIEDADES ESPAÑOLA Y PORTUGUESA DE METODOS NUMERICOS Y MECANICA COMPUTACIONAL (SEMNI Y AMPTAC)
Alberto García González; Miguel Ángel Martínez Barca; Estefanía Peña Baquedano; Alicia Laborda; Miguel Ángel de Gregorio; Manuel Doblaré Castellano.
- 17** **Title of the work:** Fluid Solid Interaction of a Human Left Coronary Artery. Implications of the Shear Stress in arterial Bifurcations for Vascular Diseases
Name of the conference: 1ST INTERNATIONAL CONFERENCE ON COMPUTATIONAL & MATHEMATICAL BIOMEDICAL ENGINEERING
Type of event: Conference
City of event: Swasea, United Kingdom
Date of event: 29/06/2009
End date: 2009
Organising entity: UNIVERSITY OF SWANSEA
Mauro Malvè; Jose Félix Rodríguez Matas; Alberto García González; Miguel Ángel Martínez Barca; Jacques Ohayon; Manuel Doblaré Castellano.
- 18** **Title of the work:** Análisis fluidodinámico del flujo sanguíneo en la bifurcación de arteria coronaria izquierda
Name of the conference: XXVI CONGRESO ANUAL DE LA SOCIEDAD ESPAÑOLA DE INGENIERIA BIOMEDICA-CASEIB
Type of event: Conference
City of event: Valladolid, Castile and León, Spain
Date of event: 15/10/2008
End date: 2008
Organising entity: SOCIEDAD ESPAÑOLA DE INGENIERIA BIOMEDICA
Mauro Malvè; Alberto García González; Miguel Ángel Martínez Barca; Jacques Ohayon; Manuel Doblaré Castellano.
- 19** **Title of the work:** Estudio experimental y modelado constitutivo de las propiedades mecánicas la arteria carótida de cerdo
Name of the conference: XXVI CONGRESO ANUAL DE LA SOCIEDAD ESPAÑOLA DE INGENIERIA BIOMEDICA-CASEIB
Type of event: Conference
City of event: Valladolid, Castile and León, Spain
Date of event: 15/10/2008
End date: 2008
Organising entity: SOCIEDAD ESPAÑOLA DE INGENIERIA BIOMEDICA
Alberto García González; Estefanía Peña Baquedano; Miguel Ángel Martínez Barca; María Teresa Higuera; Miguel Ángel de Gregorio; Manuel Doblaré Castellano.
- 20** **Title of the work:** Estudio de diferentes patologías del pie humano por medio de elementos finitos
Name of the conference: XII REUNION DE USUARIOS DE ABAQUS
Type of event: Conference
City of event: Bilbao, Basque Country, Spain
Date of event: 05/11/2007
Organising entity: PRINCIPIA S.A.



Alberto García González; Javier Bayod; Manuel Doblare Castellano.

Other achievements

Stays in public or private R&D centres

- 1** **Entity:** Politecnico di Milano **Type of entity:** University
Faculty, institute or centre: Department of Chemistry Material and Chemical Engineering "Giulio Natta"
City of entity: Milano, Italy
Start-End date: 01/07/2015 - 31/08/2016 **Duration:** 14 months
Goals of the stay: Post-doctoral
Provable tasks: Mechanobiology, Tissue Engineering, Computational Mechanics, Numerical Modelling, Microscopy
- 2** **Entity:** Dublin City University **Type of entity:** University
Faculty, institute or centre: School of Mechanical Engineering
City of entity: Dublin, Ireland
Start-End date: 01/08/2014 - 30/06/2015 **Duration:** 11 months
Goals of the stay: Post-doctoral
Provable tasks: Magnetic Resonance Imaging, Difussion Tensor Imaging, Computational Mechanics, Finite Element Simulation
- 3** **Entity:** Royal Institute of Technology (KTH) **Type of entity:** University
Faculty, institute or centre: Kungliga Tekniska högskolan
City of entity: Stockholm, Stockholm, Sweden
Start-End date: 15/09/2010 - 15/12/2010 **Duration:** 3 months
Funding entity: Ministerio de Ciencia e Innovación. **Type of entity:** Beca de Formación de Personal Investigador (FPI)
Goals of the stay: Doctorate
Provable tasks: Mechanical characterization of carotid artery tissue by experimental test and the use of polarized light microscopy techniques to measure the collagen fibers orientation
- 4** **Entity:** Dynacell Group (Laboratoire TIMC-IMAG) **Type of entity:** University Research Institute
Faculty, institute or centre: Universidad Joseph Fourier
City of entity: Grenoble, Rhône-Alpes, France
Start-End date: 15/09/2009 - 15/12/2009 **Duration:** 3 months
Funding entity: Ministerio de Ciencia e Innovación. **Type of entity:** Beca de Formación de Personal Investigador (FPI)
Goals of the stay: Doctorate
Provable tasks: Arterial wall-strain stiffening as an additional process responsible of atherosclerosis in coronary bifurcations



Obtained grants and scholarships

- 1** **Name of the grant:** Ayudas complementarias para Estancias Breves de Investigación del Programa de Formación de Personal Investigador para el año 2010
City awarding entity: Zaragoza, Aragon, Spain
Aims: Pre-doctoral
Awarding entity: Ministerio de Ciencia e Innovación **Type of entity:** publica
Amount of the grant: 4.924,87 €
Conferral date: 15/09/2010 **Duration:** 3 months
End date: 15/12/2010
- 2** **Name of the grant:** Ayudas complementarias para Estancias Breves de Investigación del Programa de Formación de Personal Investigador para el año 2009
City awarding entity: Zaragoza, Aragon, Spain
Aims: Pre-doctoral
Awarding entity: Ministerio de Ciencia e Innovación **Type of entity:** publica
Amount of the grant: 5.034,49 €
Conferral date: 15/09/2009 **Duration:** 3 months
End date: 15/12/2009
- 3** **Name of the grant:** Formación de Personal Investigador (becas FPI)
Aims: Pre-doctoral
Awarding entity: Ministerio de Ciencia e Innovación **Type of entity:** publica
Conferral date: 22/08/2008 **Duration:** 4 years

Prizes, mentions and distinctions

- 1** **Description:** "Best oral Presentation" of the V CONGRESSO DEL GRUPPO NAZIONALE DI BIOINGEGNERIA (GNB-ESB ITA)
Awarding entity: Italian Chapter of the European Society of Biomechanics **Type of entity:** Associations and Groups
Conferral date: 22/06/2016
- 2** **Description:** "Extraordinary PhD Thesis Award" (2013), Macro-area of Engineering and Architecture
Awarding entity: Universidad de Zaragoza **Type of entity:** University
City awarding entity: Zaragoza, Aragon, Spain
Conferral date: 11/02/2013
- 3** **Description:** European Mention Doctorate
Awarding entity: Universidad de Zaragoza **Type of entity:** University
City awarding entity: Zaragoza, Aragon, Spain
Conferral date: 21/02/2012