

CURRICULUM VITAE ABREVIADO (CVA)**Part A. PERSONAL INFORMATION**

First name	MARÍA ÁNGELES		
Family name	PÉREZ ANSÓN		
Gender (*)	FEMALE	Birth date (dd/mm/yyyy)	14/04/1976
Social Security, Passport, ID number			
e-mail	angeles@unizar.es	URL Web	https://m2be.unizar.es/people/m-angeles-perez-anson/
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-2901-4188	

(*) *Mandatory***A.1. Current position**

Position	Full professor		
Initial date	23/06/2020		
Institution	University of Zaragoza		
Department/Center	Mechanical Engineering/Escuela de Ingeniería y Arquitectura/I3A		
Country	Spain	Teleph. number	876555213
Key words	Tissue engineering; computational modeling of biological tissues, mechanobiology, design of prosthesis and implants		

A.3. Education

PhD, Licensed, Graduate	University	Year
Industrial Engineering	University of Zaragoza	2000
Diploma of Advanced Studies	University of Zaragoza	2002
PhD Computational mechanics	University of Zaragoza	2004

Part B. CV SUMMARY

I am M^aÁngeles Pérez Ansón, Full Professor since June 2020. In 2012 I was awarded a Research project of the National Plan "DFO-Design for Osteoporosis" (DPI2011-22413) within the category of Young Researchers. In the next call, I coordinated the OSTEO-PREV project (DPI2014-23401-c2-1-R), oriented towards the same subject but for the prevention of osteoporotic fracture. And in 2017 I coordinated the project (DPI2017-84780-C2-1-R) moving towards tissue engineering. At the same time, I was awarded a Network of Excellence for Research in Biomechanics (DPI2014-51763-REDT). My latest project of the Ministry of Science and Innovation was PID2020-113819RB-I00 Design of implants for tumoral therapy and bone regeneration after osteosarcoma resection using microfluidics, 3D printing and multiscale computational modelling. I have also lead the project ProCanAid (PLEC2021-007709) about Digital twin for aided detection, diagnosis of prostate cancer and simulation of the effects and effectiveness of different oncological treatments. I finally also got in 2021 a regional project entitled SCARS- Design, 3D printing and predictive modeling of Skin healing Constructs based on hydrogels and Auxetic Reinforcing Structures.

I would like to highlight my participation in multiple European projects and with important international collaborations established in recent years. Specifically, I have participated in more than 30 research projects for public calls (European, national and regional), of which those belonging to the last 5 years have received funding of more than € 2,500,000; and in 17 R&D contracts of special relevance with Companies (Quibim S.L, Endesa, Gas Natural, etc.). I am also the principal investigator of the Research Group recognized by the DGA "Multiscale in Mechanical and Biological Engineering".

As a result of my research, I have more than 60 articles in indexed journals (plus 6 in the process of review and preparation). Most of the publications are from Q1 and I have an h-index of 27. In recent years, I have directed 8 doctoral theses and I am currently directing another 5.

Briefly comment that during almost 20 years of teaching, I have taught the main subjects in my area of knowledge, as well as I have taught in various Master's and Doctorates (Doctorate in Civil Engineering, Master in Applied Mechanics, Master in Biomedical Engineering). I have been coordinator of the Master's Degree in Biomedical Engineering at the University of Zaragoza (2014-2019). I have been deputy director of internationalization and coordinator of the Biomedical Engineering Division of the Aragón Engineering Research Institute (I3A) between 2020-2023. I have been President of the European Society for Biomechanics (ESB) (2018-2020). I have been an Expert of the ACADEMY Program for national accreditation for access to university teaching bodies. I have also collaborated in the evaluation of research projects both by the Ministry, ANEP and European Commission. Now, I am Director of the Catedra ASPANOA (Asociación de Padres de Niños Oncológicos de Aragón) at the University of Zaragoza.

During the last 14 years, I have supervised 9 PhD students, now I am supervising 4 more. My first PhD student is the CEO of the Spanish company Quibim. Three of the 9th PhD students hold now assistant or associate professorship position in Spanish public universities. The other PhD students got different relevant positions in biomedical and industrial Spanish and international companies.

Other data:

Research six-year term (Sexenios de investigación): 3 (2001-2006; 2007-2012; 2013-2018);

Teaching five-year period (Quinquenios de docencia): 4

Number of Phd supervised during the last 10 years: 8

Total times cited: 1662

Number of JCR publications: 65

Average citations per item: 25.6

H-index: 27

I10-index: 44

Part C. RELEVANT MERITS

C.1. Publications

1. R. Asbai-Ghoudan, G. Nasello, **M. A. Pérez**, S. W. Verbruggen, S. Ruiz de Galarreta, N. Rodríguez-Florez. In silico assessment of the bone regeneration potential of complex porous scaffolds. Computers in Biology and medicine, 2023, 165, 107381. IF: 7.7; Position: 18/110 Computer science, interdisciplinary applications. Doi: [10.1016/j.compbiomed.2023.107381](https://doi.org/10.1016/j.compbiomed.2023.107381)
2. O. Lecina-Tejero, **M. A. Pérez**, E. García-Gareta, C. Borau. The rise of mechanical metamaterials: auxetic constructs for skin wound healing. Journal of Tissue Engineering, 2023, 14, 1-16. IF: 8.2; Position: 3/29 (Cell & Tissue Engineering). Cites: 1. Doi: [10.1177/20417314231177838](https://doi.org/10.1177/20417314231177838)
3. P. Alamán-Díez, C. Borau, P. E. Guerrero, H. Amaveda, M. Mora, J. M. Fraile, E. García-Gareta, J. M. García-Aznar, **M. A. Pérez**. Collagen-laponite nanoclay hydrogels for tumor spheroid growth. Biomacromolecules, 2023, 24: 2879-2891. IF: 6.2. Position: 56/285 (Biochemistry & Molecular Biology). Cites: 0. Doi: [10.1021/acs.biomac.3c00257](https://doi.org/10.1021/acs.biomac.3c00257)
4. K. G. Pele, H. Amaveda, M. Mora, C. Marcuello, A. Lostao, P. Alamán-Díez, S. Pérez-Huertas, **M. A. Pérez**, J. M. García-Aznar, E. García-Gareta. Hydrocolloids of egg white and gelatin as a platform for hydrogel-based tissue engineering. Gels, 2023, 9, 505. IF: 4.6. Position: 18/86 (Polymer Science). Cites: 4. Doi: [10.3390/gels9060505](https://doi.org/10.3390/gels9060505)
5. P. Alamán-Díez, E. García-Gareta, M. Arruebo, **M. A. Pérez**. A bone-on-a-chip collagen hydrogel-based model using pre-differentiated adipose-derived stem cells for personalized bone tissue engineering. Journal of Biomedical Materials Research Part A, 2022, 1-18. IF: 4.9. Position: 29/96 (Engineering, Biomedical). Cites: 9. Doi: [10.1002/jbm.a.37448](https://doi.org/10.1002/jbm.a.37448)

6. E. García-Gareta, **M. A. Pérez**, J. M. García-Aznar. Decellularization of tumours: A new frontier in tissue engineering. *Journal of Tissue Engineering*, 2022, 13, 1-16. IF: 8.2. Position: 3/29 (Cell & Tissue Engineering). Cites: 10. Doi: [10.1177/20417314221091682](https://doi.org/10.1177/20417314221091682)
7. D. Sainz-DeMena, W. Ye, **M. A. Pérez**, J. M. García-Aznar. A finite element based optimization algorithm to include diffusion into the analysis of DCE-MRI. *Engineering with Computers*, 2022, 38, 3849-3865. IF: 8.7. Position: 4/136 (Engineering, Mechanical). Cites: 4. Doi: [10.1007/s00366-022-01667-w](https://doi.org/10.1007/s00366-022-01667-w)
8. P. Alamán-Díez, E. García-Gareta, P. F. Napal, M. Arruebo, **M. A. Pérez**. In vitro hydrolytic degradation of polyester-based scaffolds under static and dynamic conditions in a customized perfusion bioreactor. *Materials*, 2022, 15, 2572. IF: 3.4. Position: 174/344 (Materials Science, Multidisciplinary). Cites: 8. Doi: [10.3390/ma15072572](https://doi.org/10.3390/ma15072572)
9. D. Alastruey-López, B. Seral, **M. A. Pérez**. Biomechanical evaluation of syndesmotic fixation techniques via finite element analysis: screw vs. suture button. *Comput Methods Programs Biomed*, 2021, 208, 106272. IF: 5.428. Position: 16/105 (Engineering, Biomedical). Cites: 10. Doi: [10.1016/j.cmpb.2021.106272](https://doi.org/10.1016/j.cmpb.2021.106272)
10. J. M. García-Aznar, G. Nasello, S. Hervás-Raluy, **M. A. Pérez**, M. J. Gómez-Benito. Multiscale modelling of bone tissue mechanobiology. *Bone*, 2021, 151, 116032. IF: 4.398. Position: 54/145 (Endocrinology & Metabolism). Cites: 19. Doi: [10.1016/j.bone.2021.116032](https://doi.org/10.1016/j.bone.2021.116032)

C.2. Congress

1. **M. A. Pérez**. Multiscale simulation of bone tissue regeneration. Invited conference. Freiburg University (Germany). Date: 7 July 2020
2. **M. A. Pérez**, G. Nasello, J. M. García-Aznar. Multiscale simulation of bone tissue regeneration. Invited conference. Collaborative Research Centre 1270 'ELAINE'. Rostock (Germany). Date: 28-30 September 2020
3. **M. A. Pérez**, G. Nasello, P. Alamán, J. M. García-Aznar. Challenges of bone tissue engineering: from materials to computational modeling. Invited conference. International conference of the polish Society of Biomechanics. Poland. Date: 9-11 September 2021
4. **M. A. Pérez**. Biomechanics of bone tissue regeneration in 3D porous structures: a mechano-driven approach. Invited conference. Tissue Engineering and Regenerative Medicine International Society (TERMIS2021). Maastrich (The Netherlands). Date: 15-19 November 2021
5. **M. A. Pérez**. In silico modelling of tumour prognosis: towards the digital twin. Invited conference. Avicenna Alliance webinar. Online. Date: 14 June 2022
6. **M. A. Pérez**. Computer-aided diagnosis, planning and surgery in orthopaedic applications. Invited conference. Workshop PRIMAGE – Simulation technologies applied to clinical practices. Lyon (France). Date: 23 June 2022

C.3. Research projects.

M2BE- Multiscale en Ingeniería Mecánica y Biológica. Gobierno de Aragón. PI: M^aAngeles Pérez Ansón. Universidad de Zaragoza. Starting date: 01-01-2023 till: 31-12-2025. Grant: 49.066.70€. Participation: **Principal investigator**

ProCanAid - Gemelo digital para la detección, el diagnóstico asistidos del cáncer de próstata y la simulación de los efectos y la eficacia de diferentes tratamientos oncológicos (PLEC2021-007709). Ministerio de Ciencia e Innovación. PI: M^aAngeles Pérez Ansón. Universidad de Zaragoza, Instituto de Investigación Sanitaria La FE, QUIBIM S.L. Starting date: 01-12-2021 till: 30-11-2024. Grant: 352.298,66€. Participation: **Principal investigator**

SCARS – Diseño, Impresión 3D y modelado predictivo de apósitos para la curación de heridas basado en hidrogeles reforzados con estructuras augéticas. (LMP176_21). Gobierno de Aragón – Programa de Líneas prioritarias y de carácter multidisciplinar. PI: M^aAngeles Pérez Ansón. Universidad de Zaragoza. Starting date: 04/09/2021 till: 30/09/2023. Grant: 100.000€. Participation: **Principal investigator**

ICoMICS– Individual and collective migration of the immune cellular system (GA H2020 ERC 101018587). European Commision. PI: José Manuel García Aznar. Universidad de Zaragoza. Starting date: 01-01-2022 till: 31-12-2026. Grant: 2.500.000€. Participation: **Collaborator**.

PID2020-113819RB-I00 Diseño de implantes para terapia tumoral y regeneración ósea tras resección de osteosarcoma mediante microfluídica, impresión 3D y modelado computacional. Ministerio de Ciencia e Innovación - Agencia Estatal de Investigación. PI: M^aAngeles Pérez Ansón. Starting date: 01-09-2021 till: 31-09-2024. Grant:151.250€. Participation: **Principal investigator**

PRIMAGE. Predictive insilico multiscale analytics to support cancer personalized diagnosis and prognosis, empowered by imaging biomarkers. European Commision. PI: José Manuel García-Aznar. Universidad de Zaragoza. Starting date: 01/12/2018 till:30/11/2022.Grant:796.187€. Participation: **Collaborator**.

CURABONE. Predictive models and simulations in bone regeneration: a multiscale patient-specific approach. European Commision -Marie Skłodowska Curie Actions – Innovative Training Networks (ITN). PI: José Manuel García-Aznar. Universidad de Zaragoza. Starting date:01/04/2017till:01/04/2020.Grant:1.200.000€.Participation:**Collaborator**.

DPI2017-84780-C2-1-R. Ingeniería de Tejidos para Mieloma Múltiple. Ministerio de Economía, Industria y Competitividad conv. 2017. PI: M^aAngeles Pérez Ansón. Universidad de Zaragoza. Starting date: 01/01/2018 till: 31/12/2020. Grant: 121.000€. Participation: **Principal investigator**

DPI2014-53401-C2-1-R. Diseño y desarrollo de una plataforma multiescala-invito-invivo para la prevención de la fractura ósea osteoporótica mediante cementación femoral: una herramienta preclínica. **Ministerio de Economía y Competitividad conv. 2014**. PI: M^aAngeles Pérez Ansón. Universidad de Zaragoza. Starting date: 01/01/2015 till: 31/12/2017. Grant: 157.800€. Participation: **Principal investigator**

DPI2014-51763-REDT – Red Española de Investigación en Biomecánica. **Ministerio de Economía y Competitividad conv. 2014**. PI: M^aAngeles Pérez Ansón. Universidad de Zaragoza. Starting date: 01/01/2015 till: 31/12/2017. Grant: 23.000€. Participation: **Principal investigator**.

C.4. Contracts, technological or transfer merits

1. Modelado biomecánico de la rodilla mediante elementos finitos. **QUIBIM S.L.**. M^aAngeles Pérez Ansón. Universidad de Zaragoza. Starting date: 01/02/2016 till: 31/01/2017. Budget: 22.000 €

2. Análisis por Elementos Finitos de la línea 45KV: Efecto de la sobrecarga de palomas. **ENDESA**. M^aAngeles Pérez Ansón. Universidad de Zaragoza. Starting date: 01/03/2014 till: 30/05/2014. Budget: 3.000 €