

CURRICULUM SUMMARY OF ANA MARÍA CAMACHO LÓPEZ

Current position:

Full Professor, since 29/11/2021 (in “Materials Science and Metallurgical Engineering”) University: UNED

Department/Faculty: Dpto. Ingeniería de Construcción y Fabricación/E.T.S. Ingenieros Industriales

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Keywords: manufacturing engineering, materials technology, additive manufacturing, metal forming, FEM simulation

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GENERAL INDICATORS OF QUALITY OF SCIENTIFIC PRODUCTION:

Number of six-year periods by CNEAI: 3

Direction of doctoral thesis: 6 (2 with Extraordinary Awards of the ETS Ing Industriales-UNED).

Articles with Journal Impact Factor JCR: 48; Q1+Q2 (JCR): 39

Articles in Scimago Journal Ranking SJR: 45

Scopus (29/04/2024) Cites: 1124; h-index: 16

Research Gate (29/04/2024) Cites: 1525; h-index: 18

Google Scholar (29/04/2024) Cites: 1995; h-index: 21

SUMMARY OF CURRICULUM VITAE

Ana María Camacho (<https://www.uned.es/universidad/docentes/industriales/ana-maria-camacho-lopez.html>) is Full Professor at UNED since 2021. She received her MSc in **Industrial Engineering (UCLM)** in 2001 and the **PhD in Industrial Engineering (UNED)** in 2005 (PhD Thesis: “FEM Analysis of stationary metal forming processes”). Main research lines: “Analysis and Simulation of Metal Forming processes by numerical and experimental techniques” and “Optimization of Additive Manufacturing Technologies”. Her research interest is especially focused on the study of phenomena such as damage and friction in efficiency and formability of metal forming processes; the analysis of the influence of process parameters in the performance of parts produced by additive manufacturing techniques such as FDM (Fused Deposition Modelling) and WAAM (Wire + Arc Additive Manufacturing); and the development of methodologies for materials selection in manufacturing of components for demanding applications. She belongs to the Research Group of the UNED “Industrial Production and Manufacturing Engineering-(IPME).

“**Extraordinary Doctorate Award**” of the ETSII of UNED and “Best Master Thesis” given by COIIM. She has been involved in different national research projects funded by the Spanish Ministry responsible for research. She realized an international research stay at the “Institute of Metal Forming” of the **RWTH Aachen University** and she was given a Post-Doctoral Mobility Scholarship “**José Castillejo**” funded by the

Ministry of Education. **Research Prize** for UNED young researchers 2010, given by Banco Santander and assessed by the National Agency ANEP. **3 six-year periods** of research activity (CNEAI). Author of more than 150 research articles in journals and conference proceedings. She is the **main researcher UNED** of the project “**Additive Manufacturing as a technological disruption to fight against rural depopulation and social and spatial inequalities-PLEC2021-007750**” in collaboration with CSIC, UCLM and a consortium of 3 companies. She also develops **evaluation activities of I+D+I projects** for ANEP since 2010; she is a regular **referee of 20 JCR journals** and member of the Scientific Committee of Int. Conferences. She has been an **Institutional Evaluator** for obtaining the **E-xcellence quality seal in e-learning for UNED** degrees awarded by the **European Association of Distance Teaching Universities (EADTU)**.

1.- Relevant publications

1. Rodríguez-Prieto, A.; Camacho, A.M.; Aragón, A.M.; Sebastián, M.A.; Yanguas-Gil, A.: “Polymers selection for harsh environments to be processed using additive manufacturing techniques”. *IEEE Access*, **2018**. DOI: [10.1109/ACCESS.2018.2844360](https://doi.org/10.1109/ACCESS.2018.2844360). JIF: 4.098 (2018 JCR) **Q1**.
2. Rodríguez-Panes, A.; Claver, J.; Camacho, A.M.: “The Influence of Manufacturing Parameters on the Mechanical Behaviour of PLA and ABS Pieces Manufactured by FDM: A Comparative Analysis”. *Materials*, **2018**. DOI: [10.3390/ma11081333](https://doi.org/10.3390/ma11081333). JIF: 2.972 (2018 JCR) **Q2**.
3. Prado-Cerqueira, J.L.; Camacho, A.M.; Diéguez, J.L.; Rodríguez-Prieto, A.; Aragón, A.M.; Lorenzo-Martin, C.; Yanguas-Gil, A.: “Analysis of favorable process conditions for the manufacturing of thin-wall pieces of mild steel obtained by Wire and Arc Additive Manufacturing (WAAM)”. *Materials*, **2018**. DOI: [10.3390/ma11081449](https://doi.org/10.3390/ma11081449). JIF: 2.972 (2018 JCR) **Q2**.
4. Camacho, A.M.; Rodríguez-Prieto, A.; Herrero, J.M.; Aragón, A.M.; Bernal, C.; Lorenzo-Martín, C.; Yanguas-Gil, A.; Martins, P.A.F.: “An experimental and numerical analysis of the compression of bimetallic cylinders”. *Materials*, **2019**. DOI: [10.3390/ma12244094](https://doi.org/10.3390/ma12244094). JIF: 3.057 (2019 JCR) **Q2**.
5. Merayo D., Rodríguez-Prieto A., Camacho A.M., (2020): “Prediction of mechanical properties by artificial neural networks to characterize the plastic behavior of Aluminum alloys”. *Materials*, **2020**. DOI: [10.3390/ma13225227](https://doi.org/10.3390/ma13225227). JIF: 3.623 (2020 JCR), **Q1**.
6. García-Domínguez, A.; Claver, J.; Camacho, A.M.; Sebastián, M.A.: “Considerations on the applicability of test methods for mechanical characterization of materials manufactured by FDM”. *Materials*, **2020**. DOI: [10.3390/ma13010028](https://doi.org/10.3390/ma13010028). JIF: 3.623 (2020 JCR) **Q1**.
7. Fernández D.; Rodríguez-Prieto A.; Camacho A.M.: “Effect of process parameters and definition of favorable conditions in multi-material extrusion of bimetallic AZ31B–Ti6Al4V billets”. *Applied Sciences-Basel*, **2020**. DOI: [10.3390/app10228048](https://doi.org/10.3390/app10228048). JIF: 2.679 (2020 JCR) **Q2**.
8. Rodríguez-Prieto A.; Primera, E.; Callejas, M.; Camacho A.M.: “Reliability-based evaluation of the suitability of polymers for additive manufacturing intended to extreme operating conditions”. *Polymers*, **2020**. DOI: [10.3390/polym12102327](https://doi.org/10.3390/polym12102327). JIF: 4,329 (2020 JCR) **Q1**.
9. García-Domínguez, A.; Claver, J.; Camacho A.M.; Sebastián, M.A.: “Analysis of General and Specific Standardization Developments in Additive Manufacturing from a Materials and Technological Approach”. *IEEE Access*, **2020**. DOI: [10.1109/ACCESS.2020.3005021](https://doi.org/10.1109/ACCESS.2020.3005021). JIF: 3,367 (2020 JCR) **Q2**.
10. Merayo D., Rodríguez-Prieto A., Camacho A.M.: “Topological Optimization of Artificial Neural Networks to Estimate Mechanical Properties in Metal Forming Using Machine Learning”. *Metals*, **2021**. JCR-IF (2021): 2.695, **Q2**.
11. Fernández D.; Rodríguez-Prieto A.; Camacho A.M.: “Selection of die material and its impact on the multi-material extrusion of bimetallic AZ31B–Ti6Al4V components for

- aeronautical applications". *Materials*, **2021**. DOI: 10.3390/ma14247568. JIF: 3.748 (2021 JCR) **Q1**.
12. Fernández D.; Rodríguez-Prieto A.; Camacho A.M.: "Optimal Parameters Selection in Advanced Multi-Metallic Co-Extrusion Based on Independent MCDM Analytical Approaches and Numerical Simulation". *Mathematics*, **2022**. DOI: <https://doi.org/10.3390/math10234489>. JIF: 2.592 (2022 JCR) **Q1**.
 13. Fernández D.; Rodríguez-Prieto A.; Camacho A.M.: "Data Analytics-Driven Selection of Die Material in Multimaterial Co-extrusion of Ti-Mg Alloys". *Mathematics*, **2024**. DOI: <https://doi.org/10.3390/math12060813>. JIF: 2.4 (2023 JCR) **Q1**.

2.- Relevant Research Projects

1. **Análisis y evaluación del rendimiento del taladrado de aleaciones de interés aeroespacial**. DPI2005-09325-C02-02. Ministerio de Educación y Ciencia. 12/2005-12/2008. 85.561 €. PI: M.A. Sebastián (UNED).
2. **Estudio de la aplicabilidad tecnológica, eficiente y sostenible de procesos de Forja Localizada-Incremental**. DPI2009-07300. MICINN. 12/2009-06/2013. 121.000 €. PI: A.M. Camacho (UNED).
3. **Sostenibilidad y eficiencia del mecanizado criogénico de pletinas de materiales compuestos reforzados con nanoestructuras**. DPI2014-58007-R. Ministerio de Economía y Competitividad. 01/2015-12/2017. 109.626 €. PI: R. Domingo (UNED).
4. **Desarrollo colaborativo de patrones de software y estudios de trazabilidad e intercomparación en la caracterización metrológica de superficies**. DPI2016-78476-P. Ministerio de Economía y Competitividad. 12/2016-12/2019. 73.300 €. PI: Gómez García, E. / Sanz Lobera, A (UPM).
5. **Red de Ingeniería y Tecnologías de Fabricación Aditiva (INTEFADIT)**. DPI2016-81943-REDT. Ministerio de Economía, Industria y Competitividad. 07/2017-06/2019. 20.000 €. IP: M. Marcos (UCA).
6. **Optimización de trayectorias y maquinabilidad de productos funcionales obtenidos por fabricación aditiva en polímeros reforzados avanzados**. SBPLY/19/180501/000247. Junta de Comunidades de Castilla-La Mancha y Fondo Europeo de Desarrollo Regional. 01/2020-12/2022. 108.942,00 €. IP: P.J. Núñez y J. Miguel Chacón (UCLM)
7. **Trastocando la despoblación: la Fabricación Aditiva como disrupción tecnológica para luchar contra la despoblación rural y las desigualdades sociales y espaciales**. PLEC2021-007750. MCIN/AEI /10.13039/501100011033 and Unión Europea NextGenerationEU/ PRTR. 12/2021-12/2024. 313.333,72 €. IP: I. García Diego (CSIC). Coordinadora UNED: A.M. Camacho (UNED).
8. **Comportamiento Termo-Mecánico y Degradación en servicio de Estructuras Auxéticas 3D producidas por Fabricación Aditiva de Polímeros**. PID2022-143329OA-I00. 01/09/2023-31/08/2026. 97.600 €. IP: A. Rodríguez (UNED).

3.- Director of Doctoral Thesis

1. **Estudio de factores tecnológicos en procesos de compresión por deformación plástica de materiales metálicos dúctiles por el método de los elementos finitos**. M.M. Marín. Codir.: M.A. Sebastián. UNED, 19/12/2011. **Extr. Doctorate Award**.
2. **Caracterización analítica y numérica de procesos de conformado incremental localizado de piezas volumétricas**. F.J. Olivares. Codir.: C. Bernal. UNED, 04/12/2013.

3. **Análisis de requisitos tecnológicos de materiales especificados en normativas reguladas y su repercusión sobre la fabricación de recipientes especiales para la industria nuclear.** A. Rodríguez. Codir: M.A. Sebastián. UNED, 22/07/2014.
4. **Análisis comparativo del comportamiento de aceros de muy alta resistencia (dual-phase) en procesos de embutición de chapa de piezas sin simetría de revolución.** J.M. Gutiérrez. UNED, 14/03/2016.
5. **Predicción de propiedades de materiales para la fabricación de componentes destinados a aplicaciones de alta exigencia mediante simulación numérica, análisis avanzado de datos e inteligencia artificial.** D. Merayo. Codir.: A. Rodríguez. UNED, 23/04/2021. *Extr. Doctorate Award.*
6. **Análisis y selección de condiciones óptimas de extrusión multimaterial de aleaciones ligeras para aplicaciones aeronáuticas mediante simulación por elementos finitos y métodos de decisión multicriterio.** D. Fernández. Codir.: A. Rodríguez. UNED, 18/07/2023.

4.- Recognitions, awards and grants

Scholarships and Research Awards

- Grant: Post-Doctoral Mobility Scholarship “José Castillejo” funded by the Ministry of Education.
- Award: Research Prize for UNED young researchers 2010, given by Banco Santander. Evaluation Committee: Agencia Nacional de Evaluación y Prospectiva (ANEP).
- Award: Extraordinary Doctorate Award of the ETS Ingenieros Industriales of UNED 2005/2006.
- Scholarship: Predoctoral Fellow/ Becaria Predoctoral del Proyecto de Investigación del Plan de Promoción de la Investigación en la UNED.
- Award: Best Master Thesis “Aplicaciones de termografía a problemas de transmisión de calor en máquinas de combustión interna”, given by Colegio Oficial de Ingenieros Industriales de Madrid.

Member of the scientific committee of conferences

- “European Simulation and Modelling Conference (ESM)” (2005 – today).
- “Industrial Simulation Conference (ISC)” (2006 – today).
- “International Science Fiction Prototyping Conference” (2017 – today).
- “Manufacturing Engineering Society International Conference (MESIC): MESIC’07, MESIC’09, MESIC’13, MESIC’15, MESIC’17, MESIC’19, MESIC’21, MESIC’23.
- “First Casablanca International Conference on Additive Manufacturing (CASICAM 2021)”.

Editorial Board Member of International Journals

- Review Board Member: Polymers (MDPI), Q1-JCR: https://www.mdpi.com/journal/polymers/submission_reviewers
- Editorial Board and Section Board Member: Applied Sciences (MDPI), Q2-JCR: <https://www.mdpi.com/journal/applsci/editors#editorialboard>
- Editorial Board Member: Discover Mechanical Engineering (Springer), <https://www.springer.com/journal/44245/editors>