



CURRICULUM VITAE (CVA)

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Part A. PERSONAL INFORMATION

CV date 2021/12/01

First name	MARIA LUISA		
Family name	GARCIA-ROMEU DE LUNA		
e-mail	mluisa.gromeu@udg.edu	URL Web	
Contributor ID (ORCID) (*)	0000-0001-5122-7908		
Scopus Author ID	6505504408		

(*) Mandatory

A.1. Current position

Position	Titular Universidad		
Initial date	18/10/2010		
Institution	Universitat de Girona		
Department/Center	Enginyeria Mecànica i de la Construcció Industrial	Escola Politècnica Superior	
Country	Spain	Teleph. number	
Keywords	Incremental Sheet Forming, Biomedical Prosthesis & Devices, Biocompatible Polymers, Additive Manufacturing, Ultrasonic Moulding		

A.2. Previous positions (research activity interruptions, art. 14.2.b)

Period	Position/Institution/Country/Interruption cause
-	

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD, Doctora per la UdG	E.M.C.I.- E.P.S - UdG - Spain	28/10/2005
Diploma Estudis Avançats	E.P.S – UdG - Spain	27/10/2001
Master, Ingeniería Industrial	E.P.S - UdG - Spain	09/09/1999

Part B. CV SUMMARY (max. 5000 characters, including spaces)

Dr. M. Luisa Garcia-Romeu de Luna is senior lecturer in the area of Manufacturing Process Engineering at the University of Girona (UdG), Girona, Spain. She is member of the Research Group on Product, Process and Production Engineering, GREP. He has taught at the UdG for 22 years and from 2010 in the permanent position of Titular de Universidad. Her teaching activity is mainly in the degrees of Mechanical Engineering and Industrial Technologies Engineering, and in the master Industrial Engineering. Currently, she is International Relations vice director of the Escola Politècnica Superior.

Her initial research work was related to the characterization of deformation processes and the creation of prediction models (DPI 2009 09852) due the background achieved in her PhD thesis. The last decade, her research focus is centred on the application of innovative manufacturing processes (Incremental Sheet Forming, ISF, Ultrasonic Moulding, USM and Additive Manufacturing, AM) mainly on polymeric materials in the biomedical field. The most of her scientific production is around ISF



technology with biocompatible materials: polymers and recently in metals. Within this ISF research line, she has been IP of the National Project DPI2012-36042 ADIFAP (with 3Q1 and 3Q2 publications) and a WP responsible of this technology and the cranial case study in DPI2016-77156-R, FAMMAT. She has been also the supervisor the awarded thesis by the Spanish Manufacturing Society (SIF) in 2018 developed by I. Bagudanch. In some sense, she is part of the reference researchers in the ISF field with polymers and biomedical applications. Some of her main contribution in this field are:

- Determination of the effect of key process parameters on the maximum forming force, maximum achieved temperature, surface roughness, formability, energy and cost for the process of ISF on three non-biocompatible polymers (PVC, PC and PP) and on two biocompatible polymers (PCL and UHMWPE). The geometry used for the tests has been a truncated square pyramid with a variable wall angle.
- Definition of a set of process parameters guidelines to obtain the better results in terms of the lowest energy consumption and cost and an energy cost model for ISF.
- Establishment that for polymers with a glass transition temperature above the forming temperature, there is a significant increase of the formability with the increase of the spindle speed and the expected mode of failure is ductile fracture without previous necking.
- Sound cranial prosthesis prototype demonstrated the feasibility of the technology to produce custom-made cranial implants using biocompatible polymers. ISF has a great capability not only in terms of accuracy (a AM biomodel was printed) and cost.

The presentation of these results in international forums such in forming conferences and due to her participation in the Fp7-People-IRSES 247476, gave international dissemination to her work, and have allowed her forging two important international relationships among others. Highlighting the established with Prof. A. Elías-Zúñiga from ITEMS (México) and more recently with Prof. G. Palumbo from Politecnico de Bari (Italy). In both cases, the collaboration through research stays of doctoral researchers (Lozano-Sánchez, L.M. and, Cusanno A. and Guglielme P., respectively) managed by her, have provided a fruitful collaboration in terms of papers published related to: polymers characterization, magnesium, cranial and cheekbone prosthesis, coatings by electrospinning, as it can be seen from her list of publications. She has been also involved in the thesis developments of the previous students in which although she was not co-director, she was involved in the courts and in the review in all the cases. Such strong international collaborations as well the national with Dr. Centeno in Sevilla and the peninsular with Dra. B. Silva in Lisboa allow her to take the leadership as IP of the EIN2019-103005. Unfortunately, this initiative was truncated due to the pandemic. At regional level, last year, she had the opportunity to develop the outreach activity to bring the AM closer to the artisanal sector of ceramics in La Bisbal, beside of providing training to the artisans and advice for future proposals in this traditional industrial sector.

Some figures about her: 3 recognized research “sexenios” (2002-07), (2008-13) and (2014-19); minimum of 16 Q1 publications; supervisor of 3 PhD in the last 5 years; h Scopus index of 16; 874 citations.

Representation, academic and scientific charges: One of the five members that Spain had in this COST Action (BIONECA)” approved in the OC-1-2016. Reviewer of JCR journals (Journal of Cleaner Production, Journal of Materials Processing Technology, Materials And Manufacturing Processes among others). Coordinator of the official master "Business Innovation and Technology Management" (2014-16). Director of the UdG Sector Campus in Innovation and Industrial Technology (2017-19).

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications

1. **Scientific paper** Guglielmi P.; Cusanno A.; Bagudanch I.; Centeno G.; Ferrer I.; Garcia-Romeu M.L.; Palumbo G. 2021. “*Experimental and numerical analysis of innovative processes for producing a resorbable cheekbone prosthesis.*” Journal of Manufacturing Processes, 70, 1-14, doi10.1016/j.jmapro.2021.07.060
2. **Scientific paper** Cusanno A., Negrini N.C., Villa T., Fare S., Garcia-Romeu M.L., Palumbo G. 2021. “*Post forming analysis and in vitro biological characterization of AZ31B processed by incremental forming and coated with electrospun polycaprolactone*”. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 143(1), 011012-1, doi10.1115/1.4048741



3. **Scientific paper** Ferrer I.; Manresa A.; Méndez J.A.; Delgado-Aguilar M.; Garcia-Romeu M.L. 2021. "Manufacturing PLA/PCL blends by ultrasonic molding technology" doi10.3390/polym13152412
4. **Scientific paper** Palumbo, G., Guglielmi, P., Piccininni, A., Ferrer, I, Garcia-Romeu, M.L. 2020. "Manufacturing of a hemispherical component combining incremental forming and superplastic forming" CIRP Journal of Manufacturing Science and Technology, 31, 178–188, doi10.1016/j.cirpj.2020.04.006
5. **Scientific paper** Hernández-Ávila, M., Lozano-Sánchez, L.M., Garcia-Romeu, M.L., et al. 2019. "Single point incremental forming of bilayer sheets made of two different thermoplastics" Journal of Applied Polymer Science, doi10.1002/app.47093
6. **Scientific paper** Lozano-Sánchez, L.M., Bagudanch, I., Sustaita, A.O., Iturbe-Ek, J., Elizalde, L.E, Garcia-Romeu, M.L., Elías-Zúñiga, A. 2018. "Single-point incremental forming of two biocompatible polymers: An insight into their thermal and structural properties" Polymers 10(4), 391
7. **Scientific paper** Bagudanch, I., García-Romeu, M.L., Ferrer, I., Ciurana, J. 2018. "Customized cranial implant manufactured by incremental sheet forming using a biocompatible polymer" Rapid Prototyping Journal, 24(1), pp. 120-129 <https://doi.org/10.1108/RPJ-06-2016-0089>
8. **Scientific paper** Bagudanch, I.; Centeno, G.; Vallellano, C.; Garcia-Romeu, M.L. 2017. "Revisiting formability and failure of polymeric sheets deformed by single point incremental forming". Polymer Degradation and Stability. 144, pp. 366 - 377. ISSN 0141-3910
9. **Book chapter** Baylón, K., Ceretti, E., Giardini, C. Garcia-Romeu, M.L. 2016. "Forming applications" in Editor Özel, T., Bártolo, P.J., Ceretti, E. de Ciurana, J. Rodriguez, C.A. Lopes Da Silva, J.V. "Biomedical Devices: Design, Prototyping, and Manufacturing" (49-77) <https://doi.org/10.1002/9781119267034.ch3>. John Wiley & Sons
10. **Scientific paper** Bagudanch, I., Garcia-Romeu, M.L., Sabater, M. 2016. "Incremental forming of polymers: Process parameters selection from the perspective of electric energy consumption and cost" Journal of Cleaner Production, Vol. 112, 1013-1024

C.2. Congress

1. **Conference, Oral Presentation** Guglielmi, P. Palumbo, G. Centeno, G., Garcia-Romeu, M.L., Ferrer, I., Bagudanch I. Cusanno A., Uva, A. 2019. "Manufacturing of a resorbable cheekbone implant by advanced sheet metal forming processes" 13th EUROSPF2019 11-13 Sept. Matera (Italy)
2. **Conference, Oral Presentation** Palumbo, G. Garcia-Romeu, M.L., Piccininni, A., Bagudanch I. Guglielmi, P., Sorgenter, D. Ferrer, I. 2019. "Manufacturing a spherical vessel combining incremental forming and superplastic forming" 13th EUROSPF2019 11-13 Sept. Matera (Italy)
3. **Conference, Oral Presentation** Palumbo, G. Cusanno, A. Garcia Romeu, M.L. Bagudanch, I. Contessi Negrini, N. Villa, T. Farè, S. 2018. "Single Point Incremental Forming and Electrospinning to produce biodegradable magnesium (AZ31) biomedical prostheses coated with porous PCL" BioM&M2018 Conference, 27-29 June, Milan (Italy),
4. **Conference, Oral Presentation** Centeno, G.; Bagudanch, I.; Morales-Palma, D.; García-Romeu, M.L.; Gonzalez-Perez-Somarriba; J. Martínez-Donaire, A.J; González-Pérez, L.M., Vallellano, C. 2017. "Recent Approaches for the Manufacturing of Polymeric Cranial Prostheses by Incremental Sheet Forming" 17th SHEMET17, 10-12 April, Palermo, (Italy)
5. **Conference, Oral Presentation** Bagudanch I., Centeno G., Vallellano C., Garcia-Romeu M.L. 2017. "Single Point and Two Point Incremental Forming for manufacturing customized polymer cranial implants" 7th MESIC, 28-30 June, Vigo (Spain)
6. **Conference, Invited Presentation** García-Romeu, M.L.; Bagudanch, I.; 2017. "Incremental Sheet Forming of Polymers: results of Cranial Prostheses as a case study" Production of highly customised biomedical Titanium prostheses: innovations & perspectives. Bioforming Workshop Final Meeting, 14 June, Bari (Italy)

C.3. Research projects

1. **Project EIN2019-103005**, Creación de un Consorcio ITN para Procesos de Fabricación Avanzada e Innovadores aplicados a productos de alto desempeño. Ministeri de Ciència, Innovació i Universitats - MCIU. Maria Luisa Garcia-Romeu de Luna. (Universitat de Girona (UdG)). 01/06/2019-31/05/2021. 24.600 €.



2. **Project IU16-011598** Base3D (FEDER). Departament d'Empresa i Coneixement. Generalitat de Catalunya.. Joaquim de Ciurana Gay. (Universitat de Girona (UdG)). 01/01/2019-31/12/2021. 152.586,61 €.
3. **Project DPI2016-77156-R**, FAMMAT, Fabricación de productos médicos con materiales avanzados usando tecnologías de series cortas. Ministerio de Economía y Competitividad. Joaquim de Ciurana Gay; Ines Ferrer Real.(Universitat de Girona (UdG)).30/12/2016-29/09/2021.163.350 €.
4. **Project X3_0700_E32_14_07_01**, La inhibición de la enzima lipogénica sintasa de ácidos grasos (FASN) como nueva estrategia terapéutica para el tratamiento del cáncer de mama triple negativo. Fundación Ramón Areces. Maria Teresa Puig Miquel. (Universitat de Girona(UdG)). 07/04/2015-31/07/2019. 109.200 €.
5. **Project MPCUdG2016/036**, Caracterització de materials polimèrics per aplicacions en dispositius biomèdics. Universitat de Girona (UdG). Ines Ferrer Real; F. Xavier Xifro Collsamata. (Universitat de Girona (UdG)). 01/01/2016-31/12/2018. 75.000 €.
6. **Project DPI2012-36042**, ADIFAP Avances en la Deformación Incremental para su aplicación en la Fabricación de Prótesis Poliméricas Biocompatibles. Ministerio de Economía y Competitividad. Maria Luisa Garcia-Romeu de Luna. (Universitat de Girona (UdG)). 01/01/2013-30/09/2016. 46.800 €.
7. **Project Fp7-People-Irses 247476**, International research Exchange for Biomedical Devices Design and prototyping. DG Research and Innovation. European Commission (RTD). Joaquim de Ciurana Gay. (Universitat de Girona (UdG)). 01/05/2010-30/04/2014. 322.344 €.

C.4. Contracts, technological or transfer merits

1. **Contract** Formació en la fabricació additiva aplicada a l'artesania dels sector ceramic i assessorament per propostes de futur d'aquesta tecnologia Ajuntament de La Bisbal d'Empordà. Maria Luisa Garcia-Romeu de Luna. (Universitat de Girona (UdG)). 12/06/2019-29/11/2019.
2. **Contract** Framework for collaboration in the areas of research and education in the field of biomanufacturing and biomaterials Universidade Federal de Campina Grande (UFCG). Joaquim de Ciurana Gay. (Universitat de Girona (UdG)). 11/03/2014-11/03/2016.