CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

CV date	16/05/2023

Part A. PERSONAL INFORMATION

First name	Carlos		
Family name	Santiuste		
e-mail	csantius@ing.uc3m.es	URL Web	
Open Research and Contributor ID (ORCID)(*)		0000-0002-2011-2769	

(*) Mandatory

A.1. Current position

Position	Professor		
Initial date	1/12/2021		
Institution	Universidad Carlos III de Madrid		
Departament/Center	Mecánica de Medios Continuos y Teoría de Estructuras		
Country	Spain	Teleph. number	916249920
Key words	Natural fibres, Composites, FEM, Impact, Joints		

A.2. Previous positions (research activity interruptions, art. 45.2.c))

Period	Position/Institution/Country/Interruption cause
2010-2021	Associate Professor/UC3M/Spain
2003-2010	Assistant Professor/UC3M/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Industrial Engineering	Universidad Carlos III de Madrid	2003
PhD Mechanical Engineering	Universidad Carlos III de Madrid	2007
Licensed in Philosophy	Universidad Nacional de Educación a Distancia	2013

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

Carlos Santiuste holds a degree in Industrial Engineering (2003) from the Universidad Carlos III de Madrid and a PhD in Industrial Engineering (2007) from the same university with the qualification of Excellent Cum Laude unanimously. He is full professor in the Department of Continuous Mechanics and Structural Analysis in the same institution since 2021. He has 3 periods of six-year research, and 3 periods of five-year teaching. He has been teaching and researching at the Universidad Carlos III de Madrid in the area of Continuum Mechanics and Structural Analysis since 2003.

His research has focused on the mechanical behaviour of composite structures. The results of his research have been published in 36 JCR papers, 29 of them in Q1 journals. He is a member of the Editorial Board of Composite Structures, which is a journal ranked in the first quartile of its JCR category. He is a frequent reviewer for 10 other JCR journals. He has an h-22 index and his works have received 1438 citations according to Scopus. In addition, he has published 4 book chapters by invitation and he has made 53 contributions to international conferences

and 9 to national conferences. In this works he has collaborated with researchers of Aalborg University (Denmark), Technion (Israel), RMIT University (Australia), Nanjing Tech University (China), and Universidade do Porto (Portugal). He did a six months postdoc in Aalborg University in 2009.

He has supervised 4 doctoral theses and he has been an evaluating member of doctoral theses at the University of Limerick and Universidade do Porto. He has coordinated 3 competitive projects with public funding and he has participated in 13 public projects. He has coordinated a technology transfer project in collaboration with AIRBUS and participated in other 10 projects funded by private companies. He was chairman of two international conferences: the “4th International Conference on Mechanics of Composites” in Madrid (2018) with 280 delegates from 47 countries, and the “24th International Conference on Composite Structures” in Porto (2021) with 300 delegates.

The main contributions of his research are the following:

- Impact on composites. Development of analytical and numerical models to predict the dynamic behaviour of composites beams. Analysis of bending after impact residual properties.
- Impact on sandwich structures. Study of the behaviour of honeycomb and foam cored sandwich structures under high and low velocity impacts with experimental tests and numerical models.
- Machining of composites. Prediction of induced damage during orthogonal cutting and drilling on composites using numerical models validated with experimental tests. These models included prediction of delaminations and thermal damage.
- Mechanical joints of composites. Development of analytical models to predict the stiffness and strength of composite mechanical joints including secondary bending. The study also included FEM models and experimental tests.
- Composite beams reinforced with graphene platelets. Analytical models to predict the buckling, vibration and dynamic behaviour of dielectric beams reinforced with graphene platelets.
- Biodegradable composites. This line of research includes manufacturing, experimental tests in dynamic and static conditions, analytical models to predict the visco-elasto-plastic behaviour of biocomposites reinforced with natural fibres and FEM models to predict their impact behaviour.

He has been Deputy Director of the Polytechnic School of UC3M and Director of the Bachelor Degree in Engineering in Industrial Technologies from 2014 to 2020. He has 15 years of experience teaching and coordinating undergraduate and graduate courses. He has coordinated two teaching innovation projects both to improve face-to-face teaching and to implement new online teaching tools. He has coordinated the creation of 4 MOOCs (Massive Open Online Course), one of them the first engineering course in Spanish on the edX platform and 3 SPOCs (Small Private Online Course). His teaching effort has been internationally recognized by the Open Education Consortium at the Open Education Awards for Excellence 2017.

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

- Peinado, J., Jiao-Wang, L., Olmedo, Á., & Santiuste, C. (2021). Use of Artificial Neural Networks to Optimize Stacking Sequence in UHMWPE Protections. Polymers, 13(7), 1012.

- Díaz-Álvarez, A., Díaz-Álvarez, J., Feito, N., & Santiuste, C. (2021). Drilling of biocomposite materials: Modelling and experimental validation. Simulation Modelling Practice and Theory, 106, 102203.
- Díaz-Álvarez, A., Wang, L. J., Feng, C., & Santiuste, C. (2020). Energy Absorption and Residual Bending Behaviour of Biocomposites Bumper Beams. Composite Structures, 112343.
- Díaz-Álvarez, A., Díaz-Álvarez, J., Cantero, J. L., & Santiuste, C. (2020). Analysis of orthogonal cutting of biocomposites. Composite Structures, 234, 111734.
- Wang, Y., Feng, C., Santiuste, C., Zhao, Z., & Yang, J. (2019). Buckling and postbuckling of dielectric composite beam reinforced with Graphene Platelets (GPLs). Aerospace Science and Technology, 91, 208-218.
- Díaz-Álvarez, A., Díaz-Álvarez, J., Santiuste, C., & Miguelez, M. H. (2019). Experimental and numerical analysis of the influence of drill point angle when drilling biocomposites. Composite Structures, 209, 700-709.
- Díaz-Álvarez, A., Rubio-López, Á., Santiuste, C., & Miguélez, M. H. (2018). Experimental analysis of drilling induced damage in biocomposites. Textile Research Journal, 88(22), 2544-2558.
- Rubio-López, A., Olmedo, A., Díaz-Álvarez, A., & Santiuste, C. (2015). Manufacture of compression moulded PLA based biocomposites: A parametric study. Composite Structures, 131, 995-1000.
- Rubio-López, A., Artero-Guerrero, J., Pernas-Sánchez, J., & Santiuste, C. (2017). Compression after impact of flax/PLA biodegradable composites. Polymer Testing, 59, 127-135.
- Rubio-López, A., Hoang, T., & Santiuste, C. (2016). Constitutive model to predict the viscoplastic behaviour of natural fibres based composites. Composite Structures, 155, 8-18.

C.2. Congress

To date, his scientific results have been disseminated in 53 international conferences, 2 keynotes, and 9 national conferences.

C.3. Research projects

- Desarrollo de blindajes multilaminares ligeros autoportantes de base metálica reforzado con fibras avanzadas. PID2020-118946RB-I00. PI: Carlos Santiuste y José Antonio Loya. Funded by Ministerio de Economía y Competitividad of Spain. 98.200 €. From 01/09/2021 to 31/08/2024. Principal Investigator.
- BEDYN: Development of a methodology (test, measurement, analysis) to characterize the BEhaviour of composite structures under DYNamic loading. H2020-CS2-CFP10-2019-01 (RTD). PI: José Alfonso Artero Guerrero. Funded by European Commission Research Executive Agency. From 01/07/2020 to 30/06/2023.
- Optimización del diseño de protecciones personales mediante el empleo de modelos numéricos. IND2017/IND-7762. PI: Carlos Santiuste. Funded by CAM. Consejería de

Educación e Investigación. 120.400 €. From 06/03/2018 to 06/03/2021. Principal Investigator.

- Science is coming: la ciencia que está creando tu futuro. FCT-17-12336. PI: Carlos Santiuste. Funded by Ministerio de Economía, Industria y Competitividad of Spain. 13.000 €. From 01/01/2018 to 31/03/2019. Principal Investigator.
- Diseño avanzado de protecciones personales y su interacción con el cuerpo humano. DPI2017-88166-R. PI: Marcos Rodríguez Millán. Funded by Ministerio de Economía y Competitividad of Spain. 96.800 €. From 01/01/2018 to 31/12/2020. Participant.
- Diseño avanzado y fabricación de protecciones personales integrales de uso militar y para Fuerzas y Cuerpos de Seguridad del Estado (PROTEC_DAF). RTC-2015-3887-8. PI: María Henar Miguélez. Funded by Ministerio de Economía y Competitividad of Spain. 329.023 €. From 25/02/2015 to 31/12/2018. Participant.
- Análisis experimental y numérico del comportamiento mecánico en condiciones dinámicas de elementos estructurales fabricados con materiales compuestos biodegradables. DPI2013-43994-R. PI: Carlos Santiuste. Funded by Ministerio de Economía, Industria y Competitividad of Spain. 43.560 €. From 01/01/2014 to 31/12/2017. Principal Investigator.
- Análisis de comportamiento de laminados carbono/epoxi sometidos a impactos de fragmentos de hielo. DPI2010-15123. PI: Jorge López Puente. Funded by Ministerio de Ciencia e Innovación of Spain. 94.380 €. From 01/01/2011 to 31/12/2013. Participant.
- Desarrollo de un modelo multi-escala para el comportamiento frente a impacto de laminados carbono/epoxi con arquitectura de tejido. CCG10-UC3M/DPI-4694. PI: Jorge López Puente. Funded by Comunidad Autónoma de Madrid. 15.200 €. From 01/01/2011 to 31/12/2011. Participant.

C.4. Contracts, technological or transfer merits

- Simulation capabilities for Impact predictive models and blade impact damage characterization. PI: Jorge López Puente. Funded by AIRBUS OPERATIONS, S.L. 69.600 €. From 7/07/2011 to 30/06/2012. Participant.
- Soft mounts modelling rules in dynamic analysis. PI: Carlos Santiuste. Funded by AIRBUS OPERATIONS, S.L. 35.000 €. From 21/12/2010 to 20/12/2011. Principal Investigator.
- TARGET: Tecnologías Inteligentes y Medioambientales Sostenibles para la Generación de Estructuras en Materiales Compuestos. PI: José Antonio Loya Lorenzo. Funded by AERNNOVA ENGINEERING SOLUTIONS IBERICA, S.A. 60.000€. From 09/12/2010 to 08/12/2012. Participant.
- Trabajos de investigación sobre impactos de hielo en materiales compuestos. PI: Jorge López Puente. Funded by FUNDACION IMDEA MATERIALES. 50.000 €. From 8/04/2010 to 30/09/2011. Participant.