

Part A. Personal Information

DATE	05/10/2023
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Surname(s)	MIGUELEZ GARRIDO	
Forename	MARIA HENAR	
Social Security, Passport, ID number		
Sex	FEMALE	
Age		
Researcher codes	WoS Researcher ID (*)	L-3097-2014
	SCOPUS Author ID(*)	8395517500
	Open Researcher and Contributor ID (ORCID)	0000-0001-5227-1425

(*) At least one of these is mandatory

A.1. Current position

Post/ Professional Category	PROFESSOR	
UNESCO Code	3313.12, 3313.14, 3313.17	
Key Words	Advanced manufacturing technologies, security technology	
Name of the University/Institution	UNIVERSITY CARLOS III OF MADRID	
	Department/Centre	Mechanical Engineering
	Full Address	Avda. Universidad 30, 28911 Leganes (Madrid)
	Email Address	mhmiguel@ing.uc3m.es
	Phone Number	648540133
Start date	26/11/2012	

A.2. Education (*title, institution, date*)

Year	University	Degree	Title
1994	Politechnical of Madrid	First degree + Master	Aeronautical Engineer
1998	Carlos III of Madrid	PhD	Industrial Engineering

A.3. Indicators of Quality in Scientific Production (*See the instructions*)

- a) Total number of citations (Scopus): 3000. Average number of citations during the last five years 150/year
- b) Total number of publications in JCR 80
- c) h-index 33 (Scopus)
- d) Thesis supervised: 10

Part B. Free Summary of CV (*Max. of 3.500 characters, including spaces*)

H. Miguélez is professor at the Department of Mechanical Engineering in University Carlos III of Madrid (since 2012). She is Aeronautical Engineer (UPM 1994) and PhD in Industrial Engineering (UC3M 1998), with 29 years of research and academic experience in advanced manufacturing technologies.

H. Miguélez has led the research Group in Manufacturing Technologies and Mechanical Design since the origin of the team in 2005. She has led 11 competitive research projects (7 national, 3 regional CAM, 1 international H2020). She has collaborated in several contracts with industry leading 4 industrial projects.

H. Miguélez has published about 80 articles in journals included in JCR in collaboration with national and international researchers. Most works have been focused in manufacturing technologies, including advanced machining and numerical modelling of cutting. Recently new research lines have been developed focused on biomechanical and design and testing of protections.

She has directed 10 PhD works, and is currently directing 3 more.

Main objective of the team led by H. Miguélez is the research in advanced manufacturing processes in coordination with other related topics such as the design and manufacture of personal protections and biomedical components.

Part C. Relevant accomplishments

C.1. Publications

10 articles in journals included in first quartile are listed:

Díaz-Álvarez, A., Díaz-Álvarez, J., Santiuste, C., Miguélez, M.H., Experimental and numerical analysis of the influence of drill point angle when drilling biocomposites, (2019) *Composite Structures*, 209, pp. 700-709.

Infante-García, D., Giner, E., Miguélez, H., Abdel Wahab, M., Numerical analysis of the influence of micro-voids on fretting fatigue crack initiation lifetime (2019) *Tribology International*, pp. 121-129.

Infante-García, D., Qian, G., Miguélez, H., Giner, E., Analysis of the effect of out-of-phase biaxial fatigue loads on crack paths in cruciform specimens using XFEM (2019) *International Journal of Fatigue*, 123, pp. 87-95.

Marco, M., Giner, E., Caeiro-Rey, J.R., Miguélez, M.H., Larraínzar-Garijo, R., Numerical modelling of hip fracture patterns in human femur, (2019) *Computer Methods and Programs in Biomedicine*, 173, pp. 67-75.

Díaz-Álvarez, A., Rodríguez-Millán, M., Díaz-Álvarez, J., Miguélez, M.H., Experimental analysis of drilling induced damage in aramid composites (2018) *Composite Structures*, 202, pp. 1136-1144.

J. Fernández Pérez, J.L. Cantero, J. Díaz Álvarez, M.H. Miguélez, Influence of cutting parameters on tool wear and hole quality in composite aerospace components drilling, *Composite Structures*, 178 (2017), 157-161

Ramírez P., F., Soldani, X., Loya, J., Miguélez, H., A new approach for time-space wear modeling applied to machining tool wear (2017) *Wear*, 390-391, pp. 125-134.

Díaz-Álvarez J, Tapetado A, Vázquez C, Miguélez H., Temperature Measurement and Numerical Prediction in Machining Inconel 718. (2017), *Sensors*; 17(7):1531,

Feito, N; Diaz-Alvarez, J; Lopez-Puente, J; Miguelez, MH, Numerical analysis of the influence of tool wear and special cutting geometry when drilling woven CFRPs, *Composite Structures*, 138, 285-294, 2016

Rodríguez-Millán, M., Ito, T., Loya, J.A., Olmedo, A., Miguélez, M.H., Development of numerical model for ballistic resistance evaluation of combat helmet and experimental validation (2016) *Materials and Design*, 110, pp. 391-403.

C.2. Research Projects and Grants

The list include 7 competitive projects directed by H. Miguélez

Taladrado de componentes híbridos CFRPS/Ti y tolerancia al daño debido a mecanizado durante el comportamiento en servicio de uniones estructurales aeronauticas (DPI2017-89197-C2-1-R) Ministerio de Economía, Industria y Competitividad. 1/01/2018 hasta: 31/12/2020 (102.850,00 €) IP: H. Miguélez/J. Díaz

Enhanced Neutralisation of explosive Threats Reaching Across the Plot, H2020 Secure Societies programme (H2020-SEC-2016-2017-1), Responsable en Universidad Carlos III de Madrid, H. Miguélez, 1/01/2017 hasta: 31/12/2019, 197.000 €

Optimización de procesos de acabado de componentes críticos de aero-reactores (Ref. DPI2014-56137-C2-2-R). Ministerio de Economía, Industria y Competitividad. Enero 2015-Junio 2018. IP: M.H. Miguélez y J.L. Cantero (120.000€).

Diseño avanzado y fabricación de protecciones personales integrales de uso militar y para fuerzas y cuerpos de seguridad del Estado, (RTC-2015-3887-8) Ministerio de Economía y Competitividad. 1/01/2015 hasta: 31/12/2018 IP H. Miguélez. (329.023 €)

Modelización del proceso de taladrado de materiales compuestos de fibra de carbono. (DPI2011-25999), Ministerio de Economía y Competitividad, Enero 2012-Diciembre 2014, IP H. Miguélez. (130.680 €).

Modelización numérica e integridad superficial en el torneado en seco de Inconel 718, (DPI2008-06746/DPI), Ministerio de Educación y Ciencia, Enero 2009 - Diciembre 2011, IP H. Miguélez. (88.572 €).

Desarrollo y comportamiento en mecanizado de nuevos materiales de corte tipo CERMET con aglomerante base HSS. (DPI2005-08018), Ministerio de Educación y Ciencia, Enero 2006 - Diciembre 2008, IP H. Miguélez. (43.316 €)

C.3. Contracts

The list include 3 contracts directed by H. Miguélez and 3 collaborations in relevant contracts with aeronautical sector.

Drilling Processes Improvement for Multi Material CFRP-Al-Ti Stacks, Airbus Group Defence and Space S.A.U. Junio 2016-mayo 2019. Responsables: M.H. Miguélez y J.L. Cantero (129.036€).

Tratamiento criogénico para la producción integral sostenible de mecanizado de piezas metálicas endurecidas, APRIM (Alta Precisión Industrial Mecánica), en el marco de proyecto de investigación industrial CDTI, Enero 2012– Diciembre 2014. Responsable H. Miguélez (25.000 €)

Proyecto de diseño y construcción de los mecanismos de acoplamiento para el doble mando del simulador de vuelo del helicóptero AS-355-NP de la DGT, Especialidades Eléctricas, S.A., Marzo-Mayo 2009, Responsable H. Miguélez (14.992 €)

Proyecto de Sensorización del Simulador del Vuelo del Helicóptero SA-350-B2 de la DGT, Especialidades Eléctricas, S.A., Febrero-Junio 2006, Responsable H. Miguélez (9.450 €)
SUPERCALCULUS; AERNNOVA ENGINEERING SOLUTIONS, S.A.2011-2012, Responsable: José Antonio Loya Lorenzo (109.000€)

TARGET: Tecnologías Inteligentes y Medioambientales Sostenibles para la Generación de Estructuras en Materiales Compuestos, AERNNOVA ENGINEERING SOLUTIONS, S.A. 2010-2012, Responsable José Antonio Loya Lorenzo (60.000€)

Innovación en Composites Avanzados y Rear-End Optimizado (ICARO)- Proyecto CENITAERNNOVA ENGINEERING SOLUTIONS, S.A., 2008-2011, Responsable Jorge López Puente (300.000€)

C.4. Patents and other IPR

MARIA CARMEN VAZQUEZ GARCIA; ALBERTO TAPETADO MORALEDA; MARIA HENAR MIGUELEZ GARRIDO; JOSE DIAZ ALVAREZ, P201530546, Pirómetro de fibra óptica a dos colores, 22/04/2015, UNIVERSIDAD CARLOS III DE MADRID.

C.5, C.6, C.7... Other

Some recent contributions are listed:

J. Fernández-Pérez, J.L. Cantero, J. Díaz-Álvarez, M.H. Miguélez, Composite fiber reinforced plastic one-shoot drilling: Quality inspection assessment and tool wear evaluation, International Conference on Mechanics of Composites. Bologna, Italia, (2017).

J. Fernández-Pérez, J.L. Cantero, J. Díaz-Álvarez, M.H. Miguélez, Composite fiber reinforced plastic one-shoot drilling: Quality inspection assessment and tool wear evaluation, Manufacturing Engineering Society International Conference (MESIC 2017). Vigo, España, (2017).

D. Infante-García, E. Giner, M.H. Miguélez and J. Diaz-Álvarez, Numerical analysis of fretting fatigue crack propagation using xfem, 14th International Conference on Fracture (ICF 14). Rhodes, Grecia, (2017).

A. Tapetado, E. García, J. Díaz-Álvarez, M. H. Miguélez and C. Vazquez, Optical-fiber pyrometer positioning accuracy analysis, Sixth European Workshop on Optical Fibre Sensors, Limerik, Irlanda, (2016).

V. Muñoz, J.L. Cantero, J. Díaz-Álvarez, M.H. Miguélez, Mecanizado de alta velocidad de superaleaciones de base níquel con herramientas PCBN, XXI Congreso Nacional de Ingeniería Mecánica, Elche, España, (2016).

V. Muñoz, J.L. Cantero, J. Díaz-Álvarez, M.H. Miguélez, High speed machining of Nickel-based alloys (HRSA) with CBN tools, 13th High Speed Machining Conference, Metz, Francia, (2016).