

<b>Part A. PERSONAL INFORMATION</b>		<b>CV date</b>	18/05/2021
First and Family name	NAIARA ORTEGA RODRÍGUEZ		
Social Security, Passport, ID number	30640116-E	Age	43
Researcher codes	Open Researcher and Contributor ID (ORCID**)	0000-0001-8283-847X	
	SCOPUS Author ID (*)		
	WoS Researcher ID (*)	K-6820-2014	

### A.1. Current position

Name of University/Institution	UNIVERSIDAD DEL PAÍS VASCO/EUSKAL HERRIKO UNIBERTSITATEA		
Department	Mechanical Engineering		
Address and Country	Torres Quevedo 1, 48013 – Bilbao (SPAIN)		
Phone number	946013929	E-mail	<a href="mailto:naiara.ortega@ehu.eus">naiara.ortega@ehu.eus</a>
Current position	Associate Professor	From	2011
Key words	Computerized Tomography, Dimensional Metrology, Abrasive Processes, Numerical Modeling, Manufacturing		

### A.2. Education

PhD, Licensed, Graduate	University	Year
Mechanical Engineering	UPV/EHU	2001
Doctor in Mech. Engineering	UPV/EHU	2005

### A.3. General indicators of quality of scientific production (see instructions)

Six-year research period: 2 (the last one obtained in 2017)

Six-year transfer period: 1

Director of PhD thesis: 3

Total cites: 892

High relevance scientific publications (Q1/Q2): 21

h-index: 17 (scopus)

### Part B. CV SUMMARY (max. 3500 characters, including spaces)

Naiara Ortega is an Associate Professor in the Department of Mechanical Engineering of the University of the Basque Country since 2011. She defended his Doctoral thesis in 2005 and, since 2007, she is part of the High Performance Manufacturing Group. From then on, she has been working closely with the aeronautics industry, specifically in the field of precision technologies (mainly on grinding and EDM). Since 2015 she also researches on a new research line on Dimensional Metrology and NDTs (Computerized Tomography-XRCT) applied to aeronautical components. She is member of the Technological Committee of the Aeronautics Advanced Manufacturing Centre (CFAA) where she mainly performs her research activity. She has directed numerous R&D projects and, as a result of this intense research activity, she has published numerous scientific papers and contributed to more than 30 national and international congresses. She has directed three theses on grinding field and she is currently supervising two more, one on Computerized Tomography and the second one on high speed grinding on aeronautical alloys.

### Part C. RELEVANT MERITS

#### C.1. Publications (most relevant are included)

N. Ortega, S. Plaza, A. Pascual, I. Holgado, A. Lamikiz. *A methodology to obtain traceability for internal and external measurements of Inconel 718 components by means of XRCT*. NDT and E International, 120, 102436 (2021) – **Q1**



- A. Pascual; N. Ortega; S. Plaza; I. Holgado; JI Arrizubieta. *A re methodology to achieve accurate polygon models and nurbs surfaces by applying different data processing techniques*. *Metals*, 10(11), 1-20 (2020) – **Q1**
- S. Martínez; N. Ortega; D. Celentano; AJ Sánchez Egea; E. Ukar; A. Lamikiz. *Analysis of the part distortions for inconel 718 SLM: A case study on the NIST test artifact*. *Materials*, 13(22) (2020) – **Q1**
- N. Ortega, V. Martynenko, D. Perez, D. Martinez, L.N. López de Lacalle, E. Ukar. *Abrasive Disc Performance in Dry-Cutting of Medium-Carbon Steel*. *Metals*, 10(4) , 538 (2020) – **Q1**
- G. Vidal, N. Ortega, H. Bravo 2, M. Dubar, H. González. *An Analysis of Electroplated cBN Grinding Wheel Wear and Conditioning during Creep Feed Grinding of Aeronautical Alloys*. *Metals*, 8, 350 (2018) - **Q1**.
- H. González, A. Calleja, O. Pereira, N. Ortega, L. N. López de Lacalle, M. Barton. *Super Abrasive Machining of Integral Rotary Components Using Grinding Flank Tools*. *Metals*, 8 (24) (2018) – **Q1**
- Á. Álvarez, A. Calleja, N. Ortega, L. N. López de Lacalle. *Five-Axis Milling of Large Spiral Bevel Gears: Toolpath Definition, Finishing, and Shape Errors*. *Metals*, 8, 353 (2018) – **Q1**
- I. Ayesta, B.Izquierdo, J.A.Sanchez, J.M.Ramos, S.Plaza, I.Pombo, N.Ortega. *Optimum electrode path generation for EDM manufacturing of aerospace components*. *Robotics and Computer-Integrated Manufacturing*, 37, 273-281 (2016) - **Q1**
- J.L. Osa, J.A. Sánchez, N. Ortega, I. Iordanoff, J.L. Charles. *Discrete-element modelling of the grinding contact length combining the wheel-body structure and the surface-topography models*. *International Journal of Machine Tools and Manufacture*, 110, 43-54 (2016) - **Q1**
- U. Alonso, N. Ortega, J.A. Sánchez, I. Pombo, B. Izquierdo, S. Plaza. *Hardness control of grind-hardening and finishing grinding by means of area-based specific energy*. *International Journal of Machine Tools & Manufacture*, 88, 24-33 (2015) – **Q1**
- N. Ortega, U. Alonso, J.A. Sánchez, I. Pombo, S. Plaza, B. Izquierdo. *Modelling of the hardening and finishing stages of grind-hardened workpieces*. *International Journal of Advanced Manufacturing Technology*, 82 (1-4), 435-449 (2015) – **Q2**
- U. Alonso, N. Ortega, J.A. Sánchez, I. Pombo, S. Plaza, B. Izquierdo. *In-process prediction of the hardened layer in cylindrical traverse grind-hardening*. *International Journal of Advanced Manufacturing Technology*, 71, 101-108 (2014) – **Q2**
- S. Plaza, J. A. Sanchez, E. Perez, R. Gil, B. Izquierdo, N. Ortega, I.Pombo. *Experimental study on micro EDM-drilling of Ti6Al4V using helical electrode*. *Precision Engineering*, 38, 821-827 (2014) – **Q1**
- J. Alvarez, M. Zatarain, D. Barrenetxea, N. Ortega, I. Gallego. *Semidiscretization for Stability Analysis of Infeed Cylindrical Grinding with Continuous Workpiece Speed Variation*. *International Journal of Advanced Manufacturing Technology*, 69, 113-120 (2013) – **Q2**
- E. García, J. A. Sánchez, I. Pombo, N. Ortega, B. Izquierdo, S. Plaza, J. I. Marquínez, C. Heinzl, D. Mourek. *Reduction Of Oil And Gas Consumption In Grinding Technology Using High Pour-Point Lubricants*. *Journal of Cleaner Production*, 51, 99-108 (2013) – **Q1**
- B. Izquierdo; S. Plaza, JA Sánchez, I. Pombo, N. Ortega. *Numerical prediction of heat affected layer in the EDM of aeronautical alloys*. *Applied Surface Science* , 259, 780-790 (2012) – **Q1**
- R. Alberdi, JA Sanchez, I. Pombo, N. Ortega, B. Izquierdo, S. Plaza, D. Barrenetxea. *Strategies for optimal use of fluids in grinding*. *International Journal of Machine Tools and Manufacture*, 51 (6), 491-499 (2011) – **Q1**



I. Pombo, JA Sanchez, N. Ortega, JI Marquinez, B. Izquierdo, S. Plaza. Contact length estimation in grinding using thermocouple measurement and numerical simulation. *International Journal of Advance Manufacturing Technology*, 59, 83-91 (2011) – Q2

B. Izquierdo, JA Sánchez, S. Plaza, I. Pombo, N. Ortega. *A numerical model of the EDM process considering the effect of multiple discharges*. *International Journal of Machine Tools and Manufacture*, 49, 220-229 (2009) – Q1

JA Sánchez, S. Plaza, N. Ortega, M. Marcos, J. Albizuri. *Experimental and numerical study of angular error in wire-EDM taper-cutting*. *International Journal of Machine Tools & Manufacture*, 48, 1420-1428 (2008) – Q1

## C.2. Research projects

**Project:** Combinación de modelos científicos y sensorización avanzada de máquinas-herramienta para el mecanizado eficiente de componentes de precisión de turbinas de baja presión

Founded by: MINECO (Convocatoria Proyectos de Investigación Fundamental no Orientada –DPI- 2017). Code: DPI2017-82239-P

Duration: 2017-2020

IP: Borja Izquierdo Aramburu

Funding: 115.250,00 €

**Project:** Optimización de procesos de acabado para componentes críticos de aerorreactores.

Founded by: MINECO (Convocatoria Proyectos de Investigación Fundamental no Orientada –DPI- 2014). Code: DPI2014-56137-C2-1-R

Duration: 2015-2018

IP: Naiara Ortega Rodríguez

Funding: 145.500,00€

**Project:** Integración de modelos numéricos y técnicas experimentales para el aumento del valor añadido en el rectificado de componentes de precisión (MODELGRIND)

Founded by: MICINN (Convocatoria Proyectos de Investigación Fundamental no Orientada – DPI- 2010). Code: DPI2010-21652-C02-01

Duration: 2011-2014

IP: Naiara Ortega Rodríguez

Funding: 170.489,00€

**Project:** Interlinked Process, Product and Data Quality framework for Zero-Defects Manufacturing (InterQ)

Founded by: European Union (H2020-NMBP-TR-IND-2020-singlestage)

IP: LN López de Lacalle

Coordinator: Ideko S. Coop. (IK-4)

Funding: € 8.988.450 (global funding)

**Project:** Development of highly efficient and environmentally friendly grinding technology through a minimum coolant approach (CAMEL-CMG)

Founded by: European Union (7th Fram. Progr.SP4-Capacities). Code: FP7-SME-2010-1

Duration: 2010-2012

IP: José Antonio Sánchez

Funding: 1,363,689.00€ (global funding)

**Project:** Un enfoque de las inspecciones de uniones críticas y defectos por métodos robustos y automatizables (INSPECTA)

Founded by: Departamento de Desarrollo Económico e Infraestructuras del Gobierno Vasco (Elkartek 2020 – Proy. de Investigación con Alto Potencial Industrial). Code: KK-2020/00094

Duration: 2020- 2021

IP: Naiara Ortega Rodríguez

Partners: IDEKO (líder), Tecnalia Research and Innovation, CEIT, Lortek, IKERLAN, UPV/EHU, MGEP-MU, Innovalia

Funding: 85.761,00 € (UPV/EHU)



### C.3. Contracts, technological or transfer merits

**Project:** Investigación de nuevas Tecnologías y Procesos productivos de la red de fabricación aeronáutica vasca para las futuras Turbinas de Alta Velocidad (TAV) FAKTORIA - Subcontratación EIBAR PRECISION CASTING, S. L.

Company: EIBAR PRECISION CASTING, S. L.

Duration: 30/06/2020 - 31/12/2022

IP: Naiara Ortega Rodríguez

Amount: 51.000,00 €

**Project:** Investigación de nuevas Tecnologías y Procesos productivos de la red de fabricación aeronáutica vasca para las futuras Turbinas de Alta Velocidad (TAV) FAKTORIA - Subcontratación METROLOGIA SARIKI

Company: METROLOGIA SARIKI

Duration: 30/06/2020 - 31/12/2022

IP: Naiara Ortega Rodríguez

Budget: 84.000,00 €

**Project:** Desarrollo de una nueva familia de máquinas multitarea con capacidades de rectificado y funcionalidades de inspección y control adaptativo de trayectorias para fabricar piezas de alto valor añadido

Company: Ibarria

Duration: 21/12/2018 - 20/12/2019

IP: Naiara Ortega Rodríguez

Budget: 19.980,00 €

**Project:** Turbinas de alta velocidad: desarrollo de tecnologías de fabricación avanzada-Taldea-Trimek

Company: Trimek S.A.

Duration: 01/04/2017 - 31/12/2019

IP: Naiara Ortega Rodríguez

Budget: 113.391,00 €

**Project:** CENIT FUTUvalve 2016

Company: Metrología Sariki S.A.

Duration: 04/05/2015-01/06/2019

IP: Naiara Ortega Rodríguez

Budget: 60.500 €

**Project:** Plataforma integral para el control y optimización de la producción continua de componentes de alta precisión y elevado valor añadido (STRESCON)

Company: Diviprec S.A.

Duration: 01/01/2012-31/12/2014

IP: Naiara Ortega Rodríguez

Budget: 104.140 €

**Project:** Título del contrato: solución integral para la fabricación de coronas Hirth sin estrés (NO-STRESS)

Empresa financiadora: Diviprec S.A.

Duration: 01/01/2015 - 31/12/2017

IP: Naiara Ortega Rodríguez

Budget: 64.000 €

### C.4. International conferences and seminars

N. Ortega, S. Plaza, A. Pascual, I. Holgado, L.N. López de Lacalle. Study of the influence of filter material on the roughness evaluation by means of CT. Proceedings of the 20th International Conference of the European Society for Precision Engineering and Nanotechnology, EUSPEN 2020 – Oral presentation (on-line)

L. Barrenetxea, R. Minguez, O. Etxaniz, N. Ortega, S. Plaza. Inspection of 3D Printing and Advanced Manufacturing Processes Using Hybrid 3D Metrological Technologies. 29th



International conference on the Digital Transformation in the Graphic Engineering, INGEGRAF 2019 – Oral presentation (Logroño – España)

N. Ortega, G. Vidal, H. Bravo, S. Plaza, J.L. Osa. Analysis of the wear flat of CBN wheels on the grinding performance of Inconel 718. 8th Manufacturing Engineering Society International Conference (MESIC 2019) – Oral presentation (Madrid – España)

S. Plaza, N. Ortega, R. Minguez, L. Barrenetxea, A. Gonzalez. A proposal for the metrology tomography computerized of Inconel 718. 8th Manufacturing Engineering Society International Conference (MESIC 2019) – Oral presentation (Madrid – España)

H. González, A. Calleja, O. Pereira, N. Ortega, M. Barton, L.N. López de Lacalle. Global approach to IBR manufacturing process with Super Abrasive Machining. High Speed Machining (HSM) International Congress (2018) – Oral presentation (San Sebastián - España)

N. Ortega, S. Martínez, I. Cerrillo, A. Lamikiz, E. Ukar. Computed tomography approach to quality control of the Inconel 718 components obtained by additive manufacturing (SLM). 7th Manufacturing Engineering Society International Conference (MESIC 2017) – Oral presentation (Vigo - España)

G. Vidal, N. Ortega, H. Bravo, M. Dubar. Characterization of Single-Layer CBN Wheel Wear during Grinding C1023 NGV. International Symposium on Advance in Abrasive Technologies (ISAAT 2016) – Oral presentation (Escolmo – Suecia)

#### **Invited as speaker in industrial conferences and seminars**

**Title:** "El rectificado del futuro"

Industrial conference: ¿Qué y cómo se va a mecanizar en 2015? (Organized by IMHE (2013))

**Title:** "Aplicaciones de las tecnologías de rectificado en la industria aeronáutica"

Industrial conference: I Jornadas en Ingeniería en Fabricación Aeronáutica organized by Cátedra Externa Tecnalia de la Universidad de Cádiz (2014)

**Title:** "Metrology tendencies in Aeronautics"

Industrial conference: 13ª edición de la Conferencia Internacional de Metrología Dimensional: Metromeet Organized by Innovalia Group (2017).

**Title:** "La necesidad de medirlo todo, desde la punta de la herramienta a la punta del álabe"

Industrial conference: organized by Aeronautic Cluster (HEGAN). More than 60 companies assisted: ITP AERO, Aciturri, CTA, Sariki, Renishaw, Matrici, Batz S. Coop., etc.

Año: Diciembre de 2018

#### **C.5. Supervised doctoral thesis**

**Title:** Metodología para el control del temple y el acabado de componentes de precisión endurecidos mediante grind-Hardening. PhD Student: Unai Alonso Pinillos

Supervisor: Naiara Ortega. Defence date: 2015

**Title:** On the numerical modeling on the contact in grinding. PhD student: Juan Luis Osa

Almibia. Supervisor: Naiara Ortega & José Antonio Sánchez. Defence date: 2017

International Thesis

**Title:** Characterization of CBN wheel wear and modelling of its effect on NGV grinding. PhD

Studente: Gorka Vidal Irusta. Supervisor: Naiara Ortega (UPV/EHU) & Mirentxu Dubar (University of Valenciennes – Francia). Defence date: 2020.

#### **C.6. Other merits**

Scientific collaborator of **ANEP** and member of expert panel for the **evaluation of Six-Years Transfer period**