



CURRICULUM VITAE (CVA)

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Part A. INFORMACIÓN PERSONAL

CV date

03/07/2024

Nombre:	JOSÉ ANTONIO		
Apellidos:	RODRÍGUEZ MARTÍNEZ		
e-mail			
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-9543-2839		

(*) Mandatory

A.1. Current position

Position	PROFESOR TITULAR DE UNIVERSIDAD		
Initial date	20/04/2016		
Institution	UNIVERSIDAD CARLOS III DE MADRID		
Department	MECÁNICA DE MEDIOS CONTINUOS Y TEORÍA DE ESTRUCTURAS		
País	España	Teleph. number	

A.2. Puestos anteriores

Periodo	Institución
01/06/2011 - 19/04/2016	VISITING PROFESSOR / UNIVERSIDAD CARLOS III DE MADRID / ESPAÑA
06/09/2010 - 31/05/2011	PROFESOR AYUDANTE DOCTOR / UNIVERSIDAD CARLOS III DE MADRID / ESPAÑA

A.3. Educación

Título	Universidad/País	Año
GRADUATE: INDUSTRIAL ENGINEERING	UNIVERSIDAD CARLOS III DE MADRID (ESPAÑA)	2007
MASTERS: ADVANCED STRUCTURAL MECHANICS	UNIVERSIDAD CARLOS III DE MADRID (ESPAÑA)	2008
PhD: MECHANICAL ENGINEERING	UNIVERSIDAD CARLOS III DE MADRID (ESPAÑA)	2010
PhD: MECHANICS OF MATERIALS	UNIVERSITY PAUL VERLAINE OF METZ (FRANCE)	2010

Parte C. MÉRITOS RELEVANTES

C.1. Publicaciones

- O. Cazacu, **J. A. Rodríguez-Martínez**, Effects of plastic anisotropy on localization in orthotropic materials: New explicit expressions for the orientation of localization bands in flat specimens subjected to uniaxial tension. *Journal of the Mechanics and Physics of Solids* 2019, 126: 272-284.
- A. Vaz-Romero, S. Mercier, **J. A. Rodríguez-Martínez**, Molinari. A comparative study of the dynamic fragmentation of non-linear elastic and elasto-plastic rings: The roles of stored elastic energy and plastic dissipation. *Mechanics of Materials* 2019, 132: 134–148.
- T. dos Santos, A. Vaz-Romero, **J. A. Rodríguez-Martínez**, Dynamic cylindrical cavity expansion in orthotropic porous ductile materials. *International Journal of Impact Engineering* 2019, 132, 103325.
- K. E. N'souglo, **J. A. Rodríguez-Martínez**, Cazacu. The effect of tension-compression asymmetry on the formation of dynamic necking instabilities under plane strain stretching *International Journal of Plasticity* 2020, 128: 102656.
- J. A. Rodríguez-Martínez**, Vaz-Romero, K. E. N'souglo, G. Vadillo. Dynamic shear instabilities in metallic sheets subjected to shear-compression loading *Journal of the Mechanics and Physics of Solids* 2020, 144: 104108.
- K. E. N'souglo, N. Jacques, **J. A. Rodríguez-Martínez**, Three-pronged approach to predict the effect of plastic orthotropy on the formability of thin sheets subjected to dynamic biaxial stretching. *Journal of the Mechanics and Physics of Solids* 2021, 146: 104189.



- P. Fernández-Pisón, **J. A. Rodríguez-Martínez**, I. Arcia-Tabarés, I. Avilés-Santillana, S. Sgobba. Flow and fracture of austenitic stainless steels at cryogenic temperatures. *Engineering Fracture Mechanics* 2021, 258, 108042.
- M. Marvi-Mashhadi, A. Vaz-Romero, F. Sket, **J. A. Rodríguez-Martínez**. Finite element analysis to determine the role of porosity in dynamic localization and fragmentation: Application to porous microstructures obtained from additively manufactured materials. *International Journal of Plasticity* 2021; 143, 102999.
- M. A. Kumar, K. E. N'souglu, **J. A. Rodríguez-Martínez**. A new analytical model to predict the formation of necking instabilities in porous plates subjected to dynamic biaxial loading. *International Journal of Fracture* 2021, 232: 181–198.
- J. C. Nieto-Fuentes, N. Jacques, M. Marvi-Mashhadi, K. E. N'souglu, **J. A. Rodríguez-Martínez**. Modeling dynamic formability of porous ductile sheets subjected to biaxial stretching: Actual porosity versus homogenized porosity. *International Journal of Plasticity* 2022, 158: 103418.
- A. R. Vishnu, M. Marvi-Mashhadi, J. C. Nieto-Fuentes, **J. A. Rodríguez-Martínez**. New insights into the role of porous microstructure on dynamic shear localization. *International Journal of Plasticity* 2022, 148: 103150.
- A. R. Vishnu, J. C. Nieto-Fuentes, **J. A. Rodríguez-Martínez**. Shear band formation in porous thin-walled tubes subjected to dynamic torsion. *International Journal of Solids and Structures* 2022, 252: 111837.
- J. C. Nieto-Fuentes, J. Espinoza, F. Sket, **J. A. Rodríguez-Martínez**. High-velocity impact fragmentation of additively-manufactured metallic tubes. *Journal of the Mechanics and Physics of Solids* 2023, 174: 105248.
- J. C. Nieto-Fuentes, T. Virazels, N. Jacques, **J. A. Rodríguez-Martínez**. Gun driven dynamic expansion of 3D-printed AlSi10Mg rings. *International Journal of Impact Engineering* 2023, 180: 104556.
- Z. Ghasemi, T. dos Santos, **J. A. Rodríguez-Martínez**, A. Sivastava. Inertial effect on dynamic hardness and apparent strain-rate sensitivity of ductile materials. *Journal of the Mechanics and Physics of Solids* 2023; 180: 105418.

C.2. Congresos

Type of lecture: Invited

Author: **José A. Rodríguez Martínez**

Title: Random distributions of material defects trigger regular necking patterns at high strain rates

Conference: **EUROMECH Colloquium 601 - Micromechanics of Defects in Crystalline Solids and Metals**

Place and date: Seville (Spain). June 2018

Type of lecture: Invited

Author: **José A. Rodríguez Martínez**

Title: Dynamic spherical cavity expansion in Gurson materials with uniform and non-uniform distributions of porosity

Conference: **XV International Conference on Computational Plasticity**

Place and date: Barcelona (Spain). September 2019

Type of lecture: Invited

Author: **José A. Rodríguez Martínez**

Title: The Effect of Actual Porous Microstructure on the Formation of Dynamic Necks, Adiabatic Shear Bands and Plastic Shock Waves

Conference: **Symposium on Perspective on Fracture and Failure Mechanics - IMECE 2019**

Place and date: Salk Lake City - Utah (USA). November 2019

Type of lecture: Invited

Author: **José A. Rodríguez Martínez**

Title: The interplay between porosity and inertia on the dynamic fragmentation of ductile metals

Conference: **IUTAM Symposium on Enhancing material performance by exploiting instabilities and damage evolution**

Place and date: Warsaw (Poland). June 2022

C.3. Proyectos de investigación

Title: **Opening a new route in solid mechanics: Printed protective structures (PURPOS)**

Project ID: 758056

Funding agency: [European Union – Horizon 2020 – ERC-STG-2017](#)

Participants: Universidad Carlos III de Madrid

Duration: 01/03/2018-31/08/2024

Principal investigator: **José A. Rodríguez Martínez**

Total funding: 1.497.506,87 €

Title: **The outstanding challenge in Solid Mechanics: engineering structures subjected to extreme loading conditions (OUTCOME)**

Project ID: 675602

Funding agency: [European Union – Horizon 2020 – MSCA-ITN-ETN-2015](#)

Participants: Universidad Carlos III de Madrid, [University of Lorraine](#) (France), [Technion](#) (Israel), [Cimulec](#) (SME – France), [Aerosertec](#) (SME – Spain), [Airbus Space & Defence](#) (Spain) and [RAFAEL](#) (Israel).

Duration: 01/01/2016-31/12/2019

Principal investigator / Coordinator of the consortium: **José A. Rodríguez Martínez**

Total funding: 2.052.846,72 €

Title: **Unraveling the role of anisotropy in material failure (QUANTIFY)**

Project ID: 777896

Funding agency: [European Union – Horizon 2020 – MSCA-RISE-2017](#)

Participants: Universidad Carlos III de Madrid, [University of Lorraine](#) (France), [Technion](#) (Israel), [Institute of Fundamental Technological Research](#) (Poland), [Columbia University in the City of New York](#) (USA), [University of Florida](#) (USA), [Texas A&M University](#) (USA) and [Pacific Northwestern National Laboratory](#) (USA).

Duration: 01/01/2018-30/06/2023

Principal investigator / Coordinator of the consortium: **José A. Rodríguez Martínez**

Total funding: 153.000 €

Title: **The mechanics and physics of dynamic localization and fracture in heterogeneous ductile materials (THEOREM)**

Project ID: FA8655-21-1-7011

Funding agency: [USAF, AFRL, AF Office of Scientific Research](#)

Participants: Universidad Carlos III de Madrid and [Technion](#) (Israel)

Duration: 15/02/2021-14/02/2024

Principal investigator: **José A. Rodríguez Martínez**

Total funding: 179.128 \$

Title: **Identification of the role of microinertia on spall fracture of printed porous materials (MIRROR)**

Project: IN[21]_ING_ING_0052

Funding agency: [BBVA foundation](#) [Peca Leonardo](#)

Participants: University Carlos III of Madrid

From 30/06/2021 to 31/08/2023

Principal investigator: **José A. Rodríguez Martínez**

Total funding: 40.000 €

Title: **Uncovering microstructural heterogeneity effects of metal-matrix composites on dynamic instabilities and plastic shocks (UNCLOAK)**

Project: PID2022-137559NB-I00

Funding agency: [Ministry of Science and Innovation of Spain](#)

Participants: University Carlos III of Madrid

From 01/09/2023 to 31/08/2027

Principal investigator: **José A. Rodríguez Martínez**

Total funding: 205.000 € + 1 PhD scholarship