

CURRICULUM VITAE ABREVIADO (CVA)

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

Part A. PERSONAL INFORMATION

First name	JOSÉ LUIS		
Family name	RODRIGUEZ AMENEDO		
Gender (*)	MALE	Birth date (dd/mm/yyyy)	04/02/1967
Social Security, Passport, ID number	03447245M		
e-mail	amenedo@ing.uc3m.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-0585-4596	

(*) Mandatory

A.1. Current position

Position	FULL- PROFESSOR		
Initial date	17/01/2023		
Institution	UNIVERSIDAD CARLOS III DE MADRID		
Department/Center	ELECTRICAL ENGINEERING		
Country	SPAIN	Teleph. number	+34.696715665
Key words	Grid Integration of Renewable Energy, Power System Control, Wind Energy, Photovoltaic, Battery Energy Storage System , Power Electronic Converters		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
2003-2022	ASSOCIATE PROFESSOR (Universidad Carlos III de Madrid)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Graduate Industrial Engineering	Universidad Politécnica de Madrid	1995
PhD Industrial Engineering	Universidad Carlos III de Madrid	2000

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

JOSÉ LUIS RODRÍGUEZ AMENEDO received the M.S degree in Industrial Engineering from Polytechnic University of Madrid in 1995 and the PhD degree in Industrial Engineering from Carlos III University of Madrid in 2000. From 1999 to 2000 he worked at IBERDROLA INGENIERÍA Y CONSULTORÍA as head of wind turbine technology and from 2002 to 2003 at IBERDROLA RENOVABLES as head of O&M of wind farms. In 2003 he joined the Department of Electrical Engineering of the University Carlos III of Madrid as Associate Professor. From 2008 to 2011 he requests an academic leave of absence to found the technology companies ENERGY TO QUALITY and WIND TO POWER SYSTEM. In 2016 he participates as a founding partner in the company INGENIA POWER SOLUTIONS (GRANSOLAR group). Since 2020 he is the director of the Department of Electrical Engineering and currently full-professor. He is the author of several textbooks including "Sistemas Eólicos de Producción de Energía Eléctrica" (2003), "Generadores Eléctricos I. Electronic Converters" (2021), "Electrical Generators II. Rotating Machines" (2022). He is the author of 37 articles in indexed journals, 8 in non-indexed journals, 46 contributions to conferences and 11 invited lectures. He is currently accredited with 3 six-year research periods and 1 six-year transfer period. He has participated in 24 research projects with European, national and regional public funding, being responsible

researcher in 7 of them and has supervised 6 doctoral theses. He has participated in 36 research projects with companies, being responsible researcher in 23 of them. He is the author of 10 patents in collaboration with different companies in the electricity sector. He regularly collaborates in R&D projects with REE, IBERDROLA, SIEMENS-GAMESA, HITACHI ENERGY (ABB) and INGLETEAM. He is a senior member of IEEE, member of the wind energy technology platform (REOLTEC), and participates in working groups of FUTURED and CIGRE. His priority lines of research are: 1) control of wind and photovoltaic generators, 2) integration of renewable generation in power systems, 3) control of offshore wind farms through HVDC links, 4) energy management systems with storage and 5) control of grid-forming converters.

Part C. RELEVANT MERITS

C.1. Publications

1. A Peña, S Arnaltes, JL Rodriguez-Amenedo. **"Black-start capability of PV power plants through a grid-forming control based on reactive power synchronization."** International Journal of Electrical Power & Energy Systems 146 (2023): 108730. **Q1** (JCI) IF (5,659)
2. JL Rodríguez-Amenedo, S Arnaltes. **"Damping Low-Frequency Oscillations in Power Systems Using Grid-Forming Converters."** IEEE Access 9 (2021): 158984-158997. **Q1** (JCI) IF (3,367)
3. JL Rodríguez-Amenedo, S Arnaltes, JC Martínez, J Alonso-Martinez. **"Black-start capability of DFIG wind turbines through a grid-forming control based on the rotor flux orientation."** IEEE Access 9 (2021): 142910-142924. **Q1** (JCI) IF (3,367)
4. JL Rodríguez-Amenedo, S Arnaltes, J Alonso-Martinez, MG de Armas. **"Grid-Forming Converters Control Based on the Reactive Power Synchronization Method for Renewable Power Plants."** IEEE Access 9 (2021): 67989-68007. **Q1** (JCI) IF (3,367)
5. A Nami, JL Rodriguez-Amenedo, S Arnaltes, MA Cardiel-Alvarez, R Alves. **"Control of the Parallel Operation of DR-HVDC and VSC-HVDC for Offshore Wind Power Transmission."** IEEE Transactions on Power Delivery (2021). **Q1** (JIF) IF(4,131)
6. AP Asensio, S Arnaltes, JL Rodriguez-Amenedo, MA Cardiel-Álvarez. **"Decentralized frequency control for black start of full-converter wind turbines."** IEEE Transactions on Energy Conversion 36.1 (2020): 480-487. **Q1**(JIF) IF(4,312)
7. A Nami, JL Rodriguez-Amenedo, S Arnaltes, MA Cardiel-Alvarez, R Alves. **"Frequency control of offshore wind farm with Diode-Rectifier-based HVdc connection."** IEEE Transactions on Energy Conversion 35.1 (2019): 130-138. **Q1** (JIF) IF(4,510)
8. AP Asensio, S Arnaltes, JL Rodriguez-Amenedo, MA Cardiel-Álvarez. **"Reactive power synchronization method for voltage-sourced converters."** IEEE Transactions on Sustainable Energy 10.3 (2019): 1430-1438. **Q1** (JIF) IF(7,440)
9. JL Rodríguez-Amenedo, S Arnaltes, M Aragüés, O Gomis. **"Control of the parallel operation of VSC-HVDC links connected to an offshore wind farm."** IEEE Transactions on Power Delivery 34.1 (2018): 32-41. **Q1** (JIF) IF(4,415)
10. MA Cardiel-Alvarez, S Arnaltes, JL Rodriguez-Amenedo, A Nami. **"Decentralized control of offshore wind farms connected to diode-based HVDC links."** IEEE Transactions on Energy Conversion 33.3 (2018): 1233-1241. **Q1** (JIF) IF(4,614)
11. MA Cardiel-Alvarez, S Arnaltes, JL Rodriguez-Amenedo, M Montilla. **"Modeling and control of LCC rectifiers for offshore wind farms connected by HVDC links."** IEEE Transactions on Energy Conversion 32.4 (2017): 1284-1296. **Q1** (JIF) IF(3,767)

C.2. Congress

1. A Nami, JL Rodriguez-Amenedo, S Arnaltes, MA Cardiel-Alvarez, R Alves. "Hybrid HVDC system for offshore wind farms connection using series-connected diode rectifier units." 2019 21st European Conference on Power Electronics and Applications (EPE'19 ECCE Europe). IEEE, 2019.

2. A Nami, JL Rodriguez-Amenedo, S Arnaltes, MA Cardiel-Alvarez, R Alves. **"STATCOM operation and control for offshore wind farms with diode rectifier-based HVDC connection."** 2019 21st European Conference on Power Electronics and Applications (EPE'19 ECCE Europe). IEEE, 2019.
3. A Nami, JL Rodriguez-Amenedo, S Arnaltes, MA Cardiel-Alvarez, R Alves. **"Frequency control of offshore wind farms with series-connected diode rectifier units-based HVDC connection."** *IECON 2019-45th Annual Conference of the IEEE Industrial Electronics Society*. Vol. 1. IEEE, 2019.
4. JL Rodriguez-Amenedo, S Arnaltes, MA Cardiel-Alvarez, M Montilla-DJesus. **"Direct voltage and frequency control of an offshore wind farm connected through LCC-HVDC link."** 2017 19th European Conference on Power Electronics and Applications (EPE'17 ECCE Europe). IEEE, 2017.

C.3. Research projects,

1. Project Title: **"iSTENTORE: innovative Energy Storage TEchnologies Towards increased Renewables integration and Efficient Operation"**. Granted by: EUROPEAN COMMISSION. HORIZON-CL5-2022-D3-01-11 (IA). From: 1-1-2023 Until: 01-01-2026. Principal researcher: José Luis Rodríguez Amenedo. Grant (UC3M): 421.000 €.
2. Project: Title: **"Proof of Concept of Grid-Forming Converters providing Power System Restoration Services (PdC-GFM)"**. Granted by: MINISTERIO DE CIENCIA E INNOVACIÓN. From: 01/01/2023 Until: 01/01/2025. Principal researcher: José Luis Rodríguez Amenedo. Grant (UC3M): 127.000 €. REF: PDC2022-133349-I00 (proyecto de origen PID2019-106028RB-I00).
3. Project: Title: **"Contribution of grid forming converters to power systems stability and operability with high penetration of renewable energy sources"**. Granted by: MINISTERIO DE CIENCIA E INNOVACIÓN. PROYECTOS DE TRANSICIÓN ECOLÓGICA Y TRANSICIÓN DIGITAL 2021 From: 01/01/2023 Until: 01/01/2024. Principal researcher: José Luis Rodríguez Amenedo. Grant (UC3M): 152.400 €. REF: TED2021-130468B-I00.
4. Project title: **"Contribución de las energías renovables al servicio de reposición del sistema eléctrico. Aplicación al caso Español"**. Granted by: AGENCIA ESTATAL DE INVESTIGACIÓN. From: 1-1-2020 Until: 31-03-2023. Principal researcher: José Luis Rodríguez Amenedo & Santiago Arnaltes. Grant: 154.880 €. Ref: PID2019-106028RB-I00
5. Project title: **"Programa de Redes Eléctricas Inteligentes de la Comunidad de Madrid II"**. Granted by: CONSEJERIA DE EDUCACIÓN DE LA COMUNIDAD DE MADRID. From: 1-1-2019 Until: 31-12-2022. Principal researcher: Santiago Arnaltes. Grant: 142.000 €. Ref: S2018/EMT-4366
6. Project title: **"GREENH2CM. Posicionamiento estratégico de la Comunidad de Madrid en I+D+I del hidrógeno verde y las pilas de combustible dentro del Plan Complementario de Energía e Hidrógeno Renovable: línea 1"** Granted by: CONSEJERIA DE EDUCACIÓN DE LA COMUNIDAD DE MADRID. From: 1-1-2021 Until: 31-12-2024. Principal researcher: Santiago Arnaltes. Grant: 69.000 €.
7. Project title: **"La Plataforma Fotovoltaica Total - LPT. Proyecto para dotar a las plantas fotovoltaicas de una plataforma que permite el máximo de gestionabilidad de las mismas"**. Granted by: MINISTERIO DE ECONOMÍA INDUSTRIA Y COMPETITIVIDAD. From: 1-3-2015 Until: 31-5-2018. Principal researcher: Santiago Arnaltes. Grant: 133.104 €. Ref: RTC-2015-4153-3-P01.
8. Project title: **"Programa de Redes Eléctricas Inteligentes de la Comunidad de Madrid"**. Granted by: CONSEJERIA DE EDUCACIÓN DE LA COMUNIDAD DE MADRID. From: 1-

10-2014 Until: 31-12-2018. Principal researcher: Santiago Arnaltes. Grant: 103.500 €. Ref: S2013/ICE-2933.

9. Project title: **“Integración de la Energía Eólica Marina en el Sistema Eléctrico Español mediante Enlaces de Corriente Continua Multiterminal”**. Granted by: MINISTERIO DE ECONOMÍA INDUSTRIA Y COMPETITIVIDAD. From: 1-1-2014 Until: 31-12-2016. Principal researcher: José Luis Rodríguez Amenedo & Santiago Arnaltes. Grant: 151.250 € Ref: ENE2013-47296-C2-1-R.

C.4. Contracts, technological or transfer merits,

1. Contract title: **“Contrato Marco Red Eléctrica de España con Universidad Carlos III de Madrid: Anexo Técnico Específico: Interconexión Península Baleares”**. Financed by: RED ELÉCTRICA DE ESPAÑA. From: 30-7-2021 Until: 29-07-2025. Principal researcher: Jose Luis Rodríguez Amenedo Grant: 428.000 €
2. Contract title: **“Control de convertidores electrónicos de potencia en modo grid forming”**. Financed by: INGETEAM R&D EUROPE SL. From: 01-3-2021 Until: 28-09-2022. Principal researcher: Jose Luis Rodríguez Amenedo . Grant: 45.000 €
3. Contract title: **“Controles avanzados en HVDC y convertidores para operación en el sistema eléctrico como Grid Forming Converters (GFC)”**. Financed by: RED ELÉCTRICA DE ESPAÑA S.A. From: 24-11-2020 Until: 23-11-2022. Principal researcher: Jose Luis Rodríguez Amenedo Grant: 72.000 €
4. Contract title: **“Control de generadores asíncronos doblemente alimentados en aplicaciones de Grid Forming”**. Financed by: IBERDROLA RENOVABLES ENERGÍA S.L. From: 07-05-2020 Until: 07-05-2021. Principal researcher: Jose Luis Rodríguez Amenedo & Santiago Arnaltes Grant: 29.000 €
5. Contract title: **“Estudio del Amortiguamiento de las oscilaciones de potencia en redes eléctricas mediante convertidores electrónicos”**. Financed by: IBERDROLA RENOVABLES ENERGÍA S.L. From: 01-2-2021 Until: 31-01-2022. Principal researcher: Jose Luis Rodríguez Amenedo Grant: 28.000 €
6. Contract title: **“Desarrollo y validación de aplicaciones de gestión de energía para sistemas de almacenamiento de energía en baterías”**. Financed by: INGENIA POWER SOLUTIONS S.L. From: 01-1-2020 Until: 31-12-2021. Principal researcher: Santiago Arnaltes & Jose Luis Rodríguez Amenedo Grant: 108.000 €
7. Contract title: **“PSC Technology Development Projects for Power Plant Control”**. Financed by: SIEMENS-GAMESA. From: 11-3-2019 Until: 10-3-2023. Principal researcher: Santiago Arnaltes & Jose Luis Rodríguez Amenedo. Grant: 204.610 €
8. Contract title: **“Análisis y definición de la emulación de inercia por parte de convertidores electrónicos”**. Financed by: RED ELÉCTRICA DE ESPAÑA S.A. From: 21-9-2017 Until: 21-9-2019. Principal researcher: Jose Luis Rodríguez Amenedo & Santiago Arnaltes. Grant: 70.000 €
9. Contract title: **“HVDC Interconnection Systems for Offshore Windfarms”**. Financed by: ABB CORPORATE RESEARCH. From: 15-7-2017 Until: 15-7-2019. Principal researcher: Santiago Arnaltes Gómez & José Luis Rodríguez Amenedo. Grant: 40.000 €

Patents

1. **“Método para el control distribuido de la frecuencia de un parque eólico offshore”** J.L. Rodríguez Amenedo, S. Arnaltes, Miguel. A Cardiel Álvarez PCT/ES2017/31257, 25/10/2017, España, UNIVERSIDAD CARLOS III DE MADRID
2. **“Sistema y procedimiento para controlar un generador asíncrono doblemente alimentado”** J.L. Rodríguez Amenedo, S. Arnaltes, P202131204, (23/12/2021), Spain, UNIVERSIDAD CARLOS III DE MADRID