

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	Ana María		
Family name	Méndez Lázaro		
Gender (*)	Female	Birth date (dd/mm/yyyy)	19/01/1973
Social Security, Passport, ID number	10090386X		
e-mail	anamaria.mendez@upm.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*): 0000-0001-9642-0875			

(*) Mandatory

A.1. Current position

Position	Professor		
Initial date	30/09/2019		
Institution	Universidad Politécnica de Madrid		
Department/Center	Mining and Geological Engineering	Mines and Energy School	
Country	Spain	Teleph. number	910674168
Key words	Hydrometallurgy, metal, recycling, carbon materials		

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

Period	Position/Institution/Country/Interruption cause
30/12/2005-29/09/2019	Associate professor/Spain/Universidad Politécnica de Madrid
01/10/2002-29/12/2005	Asistant professor/Spain/Universidad Católica de Ávila
01/11/2001-30/09/2002	Post doctoral research/Portugal/University of Porto,
01/12/1997-30/10/2001	Pre doctoral research/Spain/INCAR-CSIC

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD Chemical Sciences	Oviedo University/Spain	2001
Licensed Chemistry	Oviedo University/Spain	1996

(Include all the necessary rows)

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

Ana M^a Méndez is doctor in Chemical Sciences from the University of Oviedo since 2001. She works as a Professor of Extractive Metallurgy in the Mining and Energy School, Department of Mining and Geological Engineering (Universidad Politécnica de Madrid) and as researcher of the research group "Valorisation of resources". She is author of 91 included in JCR journals in the area of carbon materials (activated carbon, catalysts, biochar, carbon composites and nanotubes) and recovery of metals from minerals and wastes. Hers h index is 42 and the h10 is 73 (academic google). At the date, its publications have been cited 5827 times (4175 since 2018). Indeed, Professor Ana Méndez is in the the world's top 2% most widely cited in the scientific field of environmental engineer according to the new ranking 2023 from Stanford University considered the most prestigious worldwide. This ranking, compiled using Scopus

citation information, classified the researchers according to the number of citations. Ana M^a Méndez has 3 (six-year) period of research activity until 2022 and 3 (five-years) period of academic activity. Also, she is co-author of 4 book chapters and Editor of book "Engineered Biochar: Fundamentals, Preparation, Characterization and Applications" published by Springer (2022), more than 150 national/international congress presentations and 3 patents. She has done research stays at University of Porto (Portugal), the RMIT University (Melbourne, Australia), the University of Louvain La Neuve (Belgium), CNRS (France) and more recently in 2018 she carried out a 3-month research stay at the Faculty of Sciences at the University of Lisbon (Portugal) financed by the Ministry of Education, Culture and Sport (Spain) within the call for stays of professors and senior researchers in foreign centers for the development of the project "New extractants derived from diamides for the recovery of metals from the platinide group by leaching via waste chloride". In 2019 she obtained the first prize for the creation of the Start up "Mining mobile" in the XVI Actuaupm edition based on the recovery of metals from spent mobiles using advanced processes for the separation of materials components (based on patent ES2739880). In the last years, the research of Ana M^a Méndez has been focused in two lines:

- Hydrometallurgical recovery of metals from waste materials and refractory minerals.
- The development of hydrometallurgical processes for the recovery of metals from electronic wastes, batteries and catalysts.

Indeed, Dr Méndez is actually main researcher of the projects:

- Green leaching systems based on aminoacids for the development of eco-friendly technologies for metal recovery from wastes and the contribution to a sustainable agriculture (TED2021-131199B-I00). Proyectos de Transición Ecológica y Digital 2021.
- Research in advanced recycling technologies to obtain strategic metals from electric vehicle batteries (MIG-20221014). Programa Misiones de Ciencia e Innovación del año 2022.
- Recovery of metals from mining wastes: Study of the behaviour of biomass-derived activated carbons as catalyst for metal sulphide leaching processes. REC-MET (RTI2018-096695-B-C31). Ministerio de Ciencia, Innovación y Universidad.

Finally, it should be pointed that she has been director of 8 PhD thesis and more than 40 master theses of students from Mines, Materials, Agronomy and Environmental degrees. Currently, she is supervising 3 PhD thesis about mine tailings valorisation and the recovery of metals from lead slags.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

Dr Méndez has published 91 paper in JCR journals.

1. A.A. Burbano, G.A. Medina, F.H. Sánchez, V.L. Llassalle, M.F. Horst, G. Gascó, **A. Méndez**. 2022. Influence of post-pyrolysis treatment on physicochemical properties and acid medium stability of magnetic carbon nanocomposites. *Biomass Conversion and Biorefinery*. <https://doi.org/10.1007/s13399-022-03517-7>.
2. A.A. Burbano, G. Gascó, J. Paz-Ferreiro, **A. Méndez**. 2022. Catalytic activity of carbon materials in the oxidation of minerals. *Catalysts* 12 (8): 918.
3. S.P. Barragán-Mantilla, S. Ramola, **A. Méndez**. 2022. Engineered Biochar as a Catalyst. In: Ramola, S., Mohan, D., Masek, O., Méndez, A., Tsubota, T. (eds) Engineered Biochar. Springer, Singapore. https://doi.org/10.1007/978-981-19-2488-0_15. ISBN: 978-981-19-2488-0
4. **A. Méndez**, M.L. Álvarez, J.M. Fidalgo, C. Di Stasi, J.J. Manyà, G. Gascó. 2022. Biomass-derived activated carbon as catalyst in the leaching of metals from a copper sulfide concentrate. *Minerals Engineering* 183: 107594.
5. M.L. Álvarez, G. Gascó, R. Rodríguez-Pacheco, J. Paz-Ferreiro, **A. Méndez**. 2022. Recovery of Metals from Mine Wastes: The Effect of Biochar-Fe Composites in the Immobilization of Arsenic. *Journal of Sustainable Metallurgy* 8 (1): 419-429.

6. M.L. Álvarez, J.M. Fidalgo, G. Gascó, **A. Méndez**. 2021. Hydrometallurgical recovery of Cu and Zn from a complex sulfide mineral by $\text{Fe}^{3+}/\text{H}_2\text{SO}_4$ leaching in the presence of carbon-based materials. *Metals* 11 (2): 286.
7. M.L. Álvarez, **A. Méndez**, R. Rodríguez-Pacheco, J. Paz-Ferreiro, G. Gascó. 2021. Recovery of zinc and copper from mine tailings by acid leaching solutions combined with carbon-based materials. *Applied Sciences* 11 (11): 5166.
8. G. Žibret, B. Lemiere, **A. Mendez**, C. Cormio, D. Sinnett, P. Cleall, K. Szabo, T. Carvalho. 2020. National mineral waste databases as an information source for assessing material recovery potential from mine waste, tailings and metallurgical waste. *Minerals* 10, 446.
9. L. Delgado-Moreno, S. Bazhari, G. Gascó, **A. Méndez**, M. El Azzouzi, E. Romero. 2021. New insights into the efficient removal of emerging contaminants by biochars and hydrochars derived from olive oil wastes. *Science of The Total Environment* 755: 142430.
10. M.L. Álvarez, G. Gascó, T. Palacios, J. Paz-Ferreiro, **A. Méndez**. 2020. Fe oxides-biochar composites produced by hydrothermal carbonization and pyrolysis of biomass waste. *Journal of Analytical and Applied Pyrolysis* 151: 104893.

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

Dr Méndez has done more than 150 congress presentations.

1. A.A. Burbano, G. Gascó, F. Horst, V. Lassalle, **A. Méndez**. Functionalized carbon materials as catalysts in the oxidative leaching of copper and zinc sulphides. *8th EuChemS Chemistry Congress*. 28 August- 1 September, 2022. Lisbon, Portugal. Poster.
2. S. Patricia Barragán, **A. Méndez**, G. Gascó. Cu/Zn leaching with commercial activated carbons and waste-biomass biochars. *8th EuChemS Chemistry Congress*. 28 August- 1 September, 2022. Lisbon, Portugal. Poster.
3. S. González-Aguza, A.A. Burbano, **A. Méndez**, G. Gascó. Adsorption of copper and zinc using carbonaceous materials obtained from lignocellulosic wastes. *8th EuChemS Chemistry Congress*. 28 August- 1 September, 2022. Lisbon, Portugal. Poster.
4. A.A. Burbano, V. Lassalle, F. Horst, **A. Méndez**, G. Gascó. Adsorption of arsenite onto magnetic carbonaceous materials obtained from lignocellulosic waste. *WasteEng2022 Conference*. 27-30 June, 2022. Copenhagen, Denmark. Oral.
5. D. Davoise, A.A. Burbano, S. Barragán, **A. Méndez**. Recovery of secondary raw materials present in an abandoned tailings dam in the southwest of Spain. *WasteEng2022 Conference*. 27-30 June, 2022. Copenhagen, Denmark. Oral.
6. S.P. Barragán, G. Gascó, **A. Méndez**. Application of biochar-based catalysts to improve copper leaching. *WasteEng2022 Conference*. 27-30 June, 2022. Copenhagen, Denmark. Oral.
7. M.L. Álvarez, G. Gascó, **A. Méndez**. Acid leaching of multi-elements from a copper sulfide concentrate assisted by six carbon materials. *International Conference on Sustainable Technology and Development*. 31 October-2 November, 2021. Shenzhen, China. Oral.
8. D. Huber, M.L. Álvarez, **A. Méndez**, G. Gascó. Recovery of zinc from two mine tailing through alternative leaching processes. *International Conference on Sustainable Technology and Development*. 31 October-2 November, 2021. Shenzhen, China. Oral.
9. **A. Méndez**, J.M. Fidalgo, M.L. Álvarez, J. Manyá, G. Gascó. Copper leaching from sulphide ores: The effect of carbon-based materials as catalyst. *13th International Conference on Process Hydrometallurgy. Hydroprocess 2021*. 4-6 August 2021. Santiago. Chile. Oral.
10. M.L. Álvarez, G. Gascó, J. Paz-Ferreiro, **A. Méndez**. The use of magnetic biochars as catalysts in the lixiviation of metals from mining tailings. *International Symposium on Functional Biomass-derived Carbon Materials. Green Carbon 2020*. 09-12 March 2021. Zaragoza, Spain.

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

1. Green leaching systems based on aminoacids for the development of eco-friendly technologies for metal recovery from wastes and the contribution to a sustainable agriculture (TED2021-131199B-I00). Proyectos de Transición Ecológica y Digital 2021. Main researcher: **A. Méndez**. Ministerio de Ciencia, Innovación y Universidad. 138.000 €. 01/12/2022 - 30/10/2024.
2. Research in advanced recycling technologies to obtain strategic metals from electric vehicle batteries (MIG-20221014). Programa Misiones de Ciencia e Innovación 2022. Main

- researcher: SACYR CONCESIONES SL. Main researchers. Subcontract UPM: **A. Méndez**. Ministerio de Ciencia, Innovación y Universidad. 3.599.420,64. 01/01/2023- 01/06/2024.
3. Recovery of metals from mining wastes: Study of the behaviour of biomass-derived activated carbons as catalyst for metal sulphide leaching processes. REC-MET. (RTI2018-096695-B-C31). **A. Méndez**. Ministerio de Ciencia, Innovación y Universidad. 163,350 €. 26/08/2019-31/12/2022.
4. Cost action Mining the European Anthroposphere (CA15115). Main researcher: K. Ulrich. European Union. 04/03/2016-03/03/2020. Member of committee management
5. Remediation of metal polluted soils by phytoremediation combined with biochar addition. FITOBIO (CGL2014-58322-R). Main researcher: **A. Méndez**. Ministerio de Economía y Competitividad. 96,800 €. 01/01/2015-31/12/2018.
6. Recovery of the organic fraction of urban waste for use as biochar. REFORBIO. RTC-2014-1806-5. Main researcher: G. Gascó. Ministerio de Economía y Competitividad. 73,705 €. 24/01/2014-31/12/2016.
7. Recycling of strategic metals from waste generated in MSW energy recovery processes (FARM). Main researcher: D. Gómez-Limón. Ministerio de Economía y Competitividad. 48,842 €. 24/01/2014-31/12/2016.
8. Converting solid waste from abattoirs into Hydrochar. Main researcher: J. Paz-Ferreiro. Financing Entity: Australian meat processor corporation LTD (AMPC) M. 53,088 €. 01/12/2015- 30/11/2016.
9. Hysol: Innovative configuration for a fully renewable hybrid CSP plant. Main researcher: G. San-Miguel. Financing Entity: FP7-ENERGY-2012-1-2STAGE. Financing Entity: 2 424 902,18 €. Perios: 01/05/2013-31/07/2016.
- C.4. Contracts, technological or transfer merits**, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any
- Patents
- **A. Méndez**, I. Sánchez, J.M. Fidalgo. Method for recycling of printed circuit boards (ES2739880) 04/02/2020. Spain
 - **A. Méndez**, G. Gascó, J. Paz-Ferreiro. Agglomeration method of carbonaceous materials (ES2282056). 08/05/2012. Spain
- Technical evaluations
- Aenor International S.A. "Collaboration as experts in the certification of R+D+I projects". Data: 04/07/2020. Number (FGUPM): 43824815037
 - DNV GL Business Assurance España SLU. "Collaboration as experts in the certification of R+D+I projects". Data: 01/06/2021. Number (FGUPM): 43824815046
- Contracts with industries
- Mining Hill S.S. "Sulfide Flotation Report" Data: 15/11/2021. Number (FGUPM): 43824815052
 - Mining Hill S.S. Data: 15/11/2021. "Report characterization of mineralurgical testing samples". Number (FGUPM): 43824815053
 - Urbaser. "Stabilization tests and qualitative improvement of MSW incineration ash". Main researcherr: D. Gómez-Limón. Data: From 03/03/2014 to 01/11/2014
 - Urbaser. "Research for the classification as non-hazardous waste of the solid resulting from the aqueous leaching of MSW incineration ashes". Main researcher: D. Gómez-Limón. Data: From 10/01/2013 to 01/01/2014
- Transfer to society
- Collaboration in the organization of course "Basic seminar on stainless Steel" by CEDINOX (Association for the Research and Development of Stainless Steel) in the Mines and Energy School. Universidad Politécnica de Madrid. Data 20/04/2021.
 - Collaboration as mentor in the STEM TALENT GIRL association
 - Participation in the Community of Madrid Science Week (2012 edition) with the conference "Valorisation of organic waste"
 - Member of the Accreditation Commission C9. ANECA. Chemical, Materials and Environmental Engineering. Teacher. From 01/02/2016 to 31/12/2018.
 - Co-convener. EGU 2020 Session. Biomass and waste valorization within a circular economy: from urban mining to soil amendments. 5 May 2020. Viena (Austria)