CVA--Filled:	12/12/2023

PERSONAL DATA

Affiliation			
Name	Antonio		
	Hernández Giménez		
Gender	Male	Born	12/10/1958
DNI	39318862V		
URL Web	http://www.smap.uva.es/index.html		
Address	Paseo de Belén 7		
Email	antonio.hernandez@uva.es		

Researcher data
Open Researcher and Contributor ID (ORCID): 0000-0002-2475-5681
Scopus Author ID: 25025897400
WOS ID: B-4622-2012
SciProfiles: 622514

Present professional status			
	Full Professor		
From	1995		
Institution	Universidad de Valladolid		
Department / Center	Física Aplicada / Facultad de Ciencias		
Country	España	Telephone	983423134

MAIN AREAS OF RESEARCH

- Membrane processes including microfiltration, ultrafiltration, nanofiltration, reverse and forward osmosis, distillation in membranes and pervaporation and gas separation.
- Structural elucidation of porous materials and membranes.
- Surface properties of both inorganic and polymeric materials.

I have directed 34 projects: European, national and regional since 1982. I have published 236 articles (ORCID) in international scientific journals and 12 in national research magazines. I have presented 250 communications to congresses, the vast majority of them international. I've also contributed to 29 international books one of them edited by me and 17 national books. I am the director of the SMAP, Associated CSIC Unity, Excellence Research Group of the JCyL, Consolidated Research Group of Castile and Leon and Recognized Research Group (GIR) of the University of Valladolid.
According to Google Scholar, my publications got 8205 citations giving and H index of 46 and a i10 index of 137. The Web of Science (WOS) gives 214 documents with an H index of 38 and 5008 citations.
Research Gate gives 230 documents with 5940 citations and an H index of 41 and a Research Interest Score of 2772.
Scopus have 200 docs with my name and 5398 citations and an H index of 40.

LIST OF THE MOST RELEVANT PUBLICATIONS

The ten most cited papers authored by A. Hernández

1. **Title: Steps of membrane blocking in flux decline during protein microfiltration**
   Author(s): Bowen, W. R.; Calvo, J. I.; Hernandez, A.
   Source: Journal of Membrane Science Volume: 101 Issue: 1-2 Pages: 153-165 Published: 1995
   Times Cited: 246
   DOI: 10.1016/0376-7388(94)00295-a
2. **Title: The effect of protein-protein and protein-membrane interactions on membrane fouling in ultrafiltration**
   Author(s): Huisman, I. H.; Pradanos, P.; Hernandez, A.
   Source: Journal of Membrane Science Volume: 179 Issue: 1-2 Pages: 79-90 Published: 2000
   Times Cited: 188
   DOI: 10.1016/s0376-7388(00)00501-9
3. **Title: Pore size distributions in microporous membranes. A critical analysis of the bubble point extended method**
   Author(s): Hernandez, A.; Calvo, J. I.; Pradanos, P.; Tejerina, F.
   Source: Journal of Membrane Science Volume: 112 Issue: 1 Pages: 1-12 Published: 1996
   Times Cited: 125
   DOI: 10.1016/0376-7388(95)00025-9
4. **Title: Fouling behaviour of polyethersulfone UF membranes made with different PVP**
   Author(s): Marchese, J.; Ponce, M.; Ochoa, N. A.; Pradanos, P; Palacio, L; Hernandez, A.
   Source: Journal of Membrane Science Volume: 211 Issue: 1 Pages: 1-11 Published: 2003
   Times Cited: 123
   DOI: 10.1016/s0376-7388(02)00260-0
5. **Title: Pore size distributions based on AFM imaging and retention of multidisperse polymer solutes - Characterisation of polyethersulfone UF membranes with dopes containing different PVP**

Author(s): Ochoa, N. A.; Pradanos, P.; Palacio, L.; Pagliero, C; Marchese, J; Hernandez, A.
   Source: Journal of Membrane Science Volume: 187 Issue: 1-2 Pages: 227-237 Published: 2001
   Times Cited: 121
   DOI: 10.1016/s0376-7388(01)00348-9
6. **Title: Contact angles and external protein adsorption onto UF membranes**
   Author(s): Palacio, L.; Calvo, J. I.; Pradanos, P.; Hernandez, A; Vaisanen, P; Nystrom, M.
   Source: Journal of Membrane Science Volume: 152 Issue: 2 Pages: 189-201 Published: 1999
   Times Cited: 83
   DOI: 10.1016/s0376-7388(98)00203-8
7. **Title: Three independent ways to obtain information on pore size distributions of nanofiltration membranes**
   Author(s): Otero, J. A.; Mazarrasa, O.; Villasante, J.; Silva, V. ; Pradanos, P.; Calvo, J.I.; Hernandez, A.
   Source: Journal of Membrane Science Volume: 309 Issue: 1-2 Pages: 17-27 Published: 2008
   Times Cited: 76
   DOI: 10.1016/j.memsci.2007.09.065
8. **Title: Porosity measurements by a gas penetration method and other techniques applied to membrane characterization**
   Author(s): Palacio, L.; Pradanos, P.; Calvo, J. I.; Hernandez, A.
   Source: Thin Solid Films Volume: 348 Issue: 1-2 Pages: 22-29 Published: 1999
   Times Cited: 74
   DOI: 10.1016/s0040-6090(99)00197-2
9. **Title: Characterisation of three hydrophobic porous membranes used in membrane distillation - Modelling and evaluation of their water vapour permeabilities**
   Author(s): Martinez, L.; Florido-Diaz, F. J.; Hernandez, A.; Pradanos, P.
   Source: Journal of Membrane Science Volume: 203 Issue: 1-2 Pages: 15-27 Published: 2002
   Times Cited: 67
   DOI: 10.1016/s0376-7388(01)00719-0
10. **Title: Comparison of liquid-liquid displacement porosimetry and scanning electron microscopy image analysis to characterise ultrafiltration track-etched membranes**
    Author(s): Calvo, J. I.; Bottino, A.; Capannelli, G.; Hernandez, A.

Source: Journal of Membrane Science Volume: 239 Issue: 2 Pages: 189-197 Published: 2004 Times Cited: 61
DOI: 10.1016/j.memsci.2004.02.038

Most relevant publications in "peer review" scientific journals from 2020

1. Rivera, F.; Sepúlveda-Muñoz, C.A.; Prádanos, P.; Hernández, A.; Palacio, L.; Muñoz, R., **2023**, Influence of pH on the performance of anaerobic piggery wastewater treatment coupled with membrane-based NH3 extraction, Journal of Water Process Engineering, 55, 104226 https://doi.org/10.1016/j.jwpe.2023.104226
2. Rivera, F.; Akpan, J.; Prádanos, P.; Hernández, A.; Palacio, L.; Muñoz, R., **2023**, Side-stream membrane-based NH3 extraction to improve the anaerobic digestion of poultry manure, Journal of Water Process Engineering, 54, 103990 https://doi.org/10.1016/j.jwpe.2023.103990
3. Salamanca, M.; Palacio, L.; Hernández, A.; Peña, M.; Prádanos, P. **2023**. Evaluation of Forward Osmosis and Low-Pressure Reverse Osmosis with a Tubular Membrane for the Concentration of Municipal Wastewater and the Production of Biogas, Membranes (Basel), 13(3), 266. https://doi.org/10.3390/membranes13030266
4. Salamanca, M.; Peña, M.; Hernandez, A. ; Prádanos, P.; Palacio, L., **2023**. Forward Osmosis Application for the Removal of Emerging Contaminants from Municipal Wastewater: A Review, Membranes, 13(7), 655 https://doi.org/I10.3390/membranes13070655
5. Soto, C.; Cicuttina, N.; Carmona, F.J.; de la Viuda, M.; Tena, A.,; Lozano, A.E.; Hernández, A.; Palacio, L.; Prádanos, P., **2023**. Gas adsorption isotherm, pore size distribution, and free volume fraction of polymer-polymer mixed matrix membranes before and after thermal rearrangement, J. Membrane Sci., 683, 121841 https://doi.org/10.1016/j.memsci.2023.121841
6. Pérez, M.A.; Gallego, S.; Palacio, L.; Hernández, A.; Prádanos, P.; Carmona, F.J., **2023**. Saline Retention and Permeability of Nanofiltration Membranes Versus Resistance and Capacitance as Obtained from Impedance Spectroscopy under a Concentration Gradient, Membranes (Basel), 13(6), 608 https://doi.org/10.3390/membranes13060608
7. Soto, C.; Comesaña-Gándara, B.; Marcos, A.; Cuadrado, P.; Palacio, L.; Lozano, A.E.; Alvarez, C.; Pradanos, P.; Hernández, A. .**2022**,Thermally Rearranged Mixed Matrix Membranes from Copoly(o-hydroxyamide)s and Copoly(o-hydroxyamide-amide)s with a Porous Polymer Network as a Filler-A Comparison of Their Gas Separation Performances, Membranes (Basel), 12(10),998. https://doi.org/10.3390/membranes12100998
8. Calvo, Jose Ignacio; Asensio, Jaime; Sainz, Daniel; Zapatero, Rubén; Carracedo, Daniel; Fernández-Fernández, Encarnación; Prádanos, Pedro; Palacio, Laura; Hernández, Antonio. **2022**. Membrane Dialysis for Partial Dealcoholization of White Wines, *Membranes* (Basel), *12*(5), 468. https://doi.org/10.3390/membranes12050468
9. Soto, C.; Palacio, L.; Muñoz, R.; Prádanos, P., Hernández, A., **2022**, Recent Advances in Membrane-Based Biogas and Biohydrogen Upgrading, Processes, 10(10), 1918; https://doi.org/10.3390/pr10101918
10. Rivera, F.; Villarreal; L., Prádanos; P., Hernández, A; Palacio, L.; Muñoz, R. **2022**, Enhancement of swine manure anaerobic digestion using membrane-based NH3 extraction, Bioresource Technology, 362, 127829. https://doi.org/10.1016/j.biortech.2022.127829
11. Soto, C.; Carmona, J.; Freeman, B.D.; Palacio, L.; González-Ortega, A.; Prádanos, P.; Lozano, A.E.; Hernández, A. **2022**, Free Volume and Permeability of Mixed Matrix Membranes Made from a Terbutil-M-terphenyl Polyamide and a Porous Polymer Network, Polymers, 14(15), 3176. https://doi.org/10.3390/polym14153176
12. Rico-Martínez, S. ; Alvarez, C.; Hernández, A.; Miguel, J.A. ; Lozano, A.E. 2022, Mixed Matrix Membranes Loaded with a Porous Organic Polymer Having Bipyridine Moieties, *Membranes* (Basel), *12*(6), 547. https://doi.org/10.3390/membranes12060547
13. Matesanz-Niño, Laura; Aguilar-Lugo, Carla; Prádanos, Pedro; et al; de la Campa, Jose G.**2022**. Gas separation membranes obtained by partial pyrolysis of polyimides exhibiting polyethylene oxide moieties. Polymer, 247, 124789. https://doi.org/10.1016/j.polymer.2022.124789
14. Soto, Cenit; Torres-Cuevas, Edwin S.; Palacio, Laura; Prádanos, Pedro; Freeman, Benny D.; Lozano, Angel E.; Hernández, Antonio; Comesana-Gandara, Bibiana. **2022**. Gas Permeability, Fractional Free Volume and Molecular Kinetic Diameters: The Effect of Thermal Rearrangement on ortho-hydroxy Polyamide Membranes Loaded with a Porous Polymer Network Membranes (Basel), 12(2):200. https://doi.org/ 10.3390/membranes12020200
15. Rivera, Fanny; Muñoz, Raúl; Prádanos, Pedro; Hernández, Antonio; Palacio, Laura. **2022**. A Systematic Study of Ammonia Recovery from Anaerobic Digestate Using Membrane-Based Separation Membranes (Basel) 24;12(1)19. https://doi.org/10.3390/membranes12010019
16. Salamanca, M.; López-Serna, R., Palacio, L.; Hernández, A., Prádanos, P.; Peña, M. **2022**, Ecological Risk Evaluation and Removal of Emerging Pollutants in Urban Wastewater by a Hollow Fiber Forward Osmosis Membrane, Membranes 2022, 12(3), 293. https://doi.org/10.3390/membranes12030293
17. Calvo, J.I.; Casado-Coterillo, C.; Hernández, A., **2021**, Past, Present and Future of Membrane Technology in Spain, *Membranes* (Basel), *11*(11), 808.

https://doi.org/10.3390/membranes11110808

18 Soto, Cenit; Torres-Cuevas, Edwin S.; González-Ortega, Alfonso; Palacio, Laura; Prádanos, Pedro; Freeman, Benny D.; Lozano, Ángel E.; Hernández, Antonio. **2021**. Hydrogen Recovery by Mixed Matrix Membranes Made from 6FCl-APAF HPA with Different Contents of a Porous Polymer Network and Their Thermal Rearrangement. *Polymers* **2021**, *13*(24), 4343. https://doi.org/10.3390/polym13244343

19 Salamanca, Mónica; López-Serna, Rebeca; Palacio, L.; Hernández, A.; Prádanos, P.; Peña, Mar. **2021**. Study of the rejection of contaminants of emerging concern by a biomimetic aquaporin hollow fiber forward osmosis membrane. Journal of Water Process Engineering, 7(40), 101914. https://doi.org/10.1016/j.jwpe.2021.101914

20 Soto, Cenit; Torres-Cuevas, Edwin S; González-Ortega, Alfonso; Palacio, Laura; Lozano, Angel E; Freeman, Benny D; Pradanos, Pedro; Hernández, Antonio. **2021**. Gas Separation by Mixed Matrix Membranes with Porous Organic Polymer Inclusions within o-Hydroxypolyamides Containing m-Terphenyl Moieties.Polymers. Polymers, 13(6), 931. https://doi.org/10.3390/polym13060931

21 Tanis-Kanbur, M.B.; Peinador, R.I.; Calvo, J.I.; Hernández, A.; Chew, J.W. **2021**. Porosimetric membrane characterization techniques: A review, Journal of Membrane Science, 619, 118750. https://doi.org/10.1016/j.memsci.2020.118750

22 Soto, C.; Lugo, C. Aguilar; Rodríguez, S.; Palacio, L.; Lozano, A.E.; Pradanos, P.; Hernández, A.**2020**. Enhancement of CO2/CH4 permselectivity via thermal rearrangement of mixed matrix membranes made from an o-hydroxy polyamide with an optimal load of a porous polymer network Separation and Purification Technology, 247, 116895. https://doi.org/10.1016/j.seppur.2020.116895

23 Alvarez-Quintana, Sara; Javier Carmona, Francisco; Palacio, Laura; Hernández, Antonio; Pradanos, Pedro. **2020**. Water viscosity in confined nanoporous media and flow through nanofiltration membranes, Microporous and Mesoporous Materials, 303, 110289. https://doi.org/10.1016/j.micromeso.2020.110289

24 Otero-Fernández, A.; Diaz, P.; Otero, J. A.; Ibáñez, R.; Maroto-Valiente, A-; Palacio, L.; Carmona, F.J.; Hernández, A. **2020**. Morphological, chemical and electrical characterization of a family of commercial nanofiltration polyvinyl alcohol coated polypiperazineamide membranes, European Polymer Journal, 126, 109544. https://doi.org/10.1016/j.eurpolymj.2020.109544

Research Projecs. From 2013 (ten years).

■ TED2021-131170A-I00 *Membranas innovadoras para la producción de biometano de alta calidad*, (AEI-Conv. Proy. Est. Orientados a la Transición Ecológica y T.D.-2021) IP: Bibiana Comesaña, (UVa) 01/12/2022 -30/11/2024; 150400 € (*Contribution:* Member of research team)

■ PID2019-109403RB-C21 *Procesos de membrana en biogás y separación de olefina/parafina*, (AEI-Conv. Retos Orientados-2019, coordinado con PID2019-109403RB-C22) **IP: Laura Palacio** (UVa) 01/06/2020 - 31/05/2023; 100914 € (*Contribution:Co* IP)

■ EQC2019-006481-P, *Adquisición de equipo de adsorción-desorción de gases para caracterización de micro y mesoporos y superficie activa*, (MICIU-Conv. Equipamiento Científico-2019) **IP: Laura Palacio** (UVa) 15/12/2019 -31/12/2020; 125400 € (*Contribution:* : Member of research team)

■ MAT2016-76413-C2-1-R *Nuevos materiales para permeación en fase gaseosa*, (MICINN- Conv. Retos Orientados-2016, coordinado con MAT2016-76413-C2-2-R) **IP: Laura Palacio** (UVa) 30/12/2016 - 29/12/2019; 157300 € (*Contribution:* Co IP)

■ Enriquecimiento de Biogás mediante Membranas Poliméricas de alta Eficiencia. Junta de Castilla y León. (Universidad de Valladolid). 2019-2021. 12.000€. IP: Antonio Hernández (Contribución IP)

■ VA248U13 *Nuevos materiales poliméricos compuestos de matriz mixta para la separación y captura de CO2*, (Junta de Castilla y León-Conv. Proyectos Investigación-2013), IP: Antonio Hernández (UVa); 1/01/2014-31/12/2016; 34980 € (*Contribution:* IP)

■ CTQ2012-31076 *Reducción de azúcar y recuperación de aromas en mostos mediante nanofiltración y pervaporación,* (MICINN- Conv. Retos Orientados-2012) IP: Pedro Prádanos (UVa) 01/1/2013-31/12/2015; 84.000€ (*Contribution:* Member of research team)

■ MAT 2011-25513 *Aplicaciones medioambientales y energéticas de la separación de CO2 mediante nuevos materiales de membrana*, (MICINN- Conv. Retos Orientados-2011) IP: Antonio Hernández (UVa) 01/1/2012-31/12/2014; 107438 € (*Contribution:* IP)

Firmado digitalmente por HERNANDEZ GIMENEZ ANTONIO - 39318862V
Fecha: 2023.12.12 16:35:08 +01'00'