

Part A. Personal Information

DATE	10/09/2018
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Surname(s)	Raquel	
Forename	Ibáñez	
Social Security, Passport, ID number	22729377H	
Sex	Female	
Age	52	
Researcher codes	WoS Researcher ID (*)	Author ID: 7005360919
	SCOPUS Author ID(*)	
	Open Researcher and Contributor ID (ORCID)	orcid.org/0000-0002-0432-1827

(*) At least one of these is mandatory

A.1. Current position

Post/ Professional Category	Full Professor	
UNESCO Code	3303 Chemical Technology and Engineering, 3308 Environmental Technology and Engineering	
Key Words	Environmental Technologies, membranes, AOPs	
Name of the University/Institution	Universidad de Cantabria	
	Department/Centre	
	Full Address	ETSIIyT, Avda. de los Castros s/n, 39005 Santander.
	Email Address	ibanezr@unican.es
	Phone Number	34-942201594
Start date	Chemical Engineering; Sustainable Engineering; Water	

A.2. Education (*title, institution, date*)

Year	University	Degree	Title
1992	Universidad del País Vasco	Licenciada	Licenciada en Ciencias (sección química)
1996	Universidad de Cantabria	PhD	Doctora en Ciencias Químicas

A.3. Indicators of Quality in Scientific Production (*See the instructions*)

Total number of citations:	1349 (Source Scopus)
Total number of publications (JCR):	65
Total number of publications in Q1:	51
Total number of publications in D1:	20
h-index:	21 (source Scopus)
Thesis supervised:	8
Research steps (sexenios):	3 (dated: January 2012)
Patents:	3
Research projects (IP):	15
Research Projects (researcher):	35
Research contracts (IP):	8
Research contracts (researcher):	25
Contributions in international Congresses:	116

Part B. Free Summary of CV (*Max. of 3.500 characters, including spaces*)

PhD thesis UPV-EHU-UC

After finishing the Degree in Chemistry at the Basque Country University (UPV-EHU) she was a predoctoral researcher starting the research activity under the supervision of Prof. I. Ortiz at the UPV-EHU. In 1992 she joined the “Chemical and Chemical Engineering Doctoral Program” at the University of Cantabria (UC) where she finished her PhD Thesis, being qualified as Excellent (apto cum laude). In this period she completed a predoctoral stay at the Universidad Pedagógica y Tecnológica de Tunja (Colombia) supported by a grant from the Spanish International Affairs Ministry.

Postdoctoral Research (1996-2002)

As associate professor in the UC, teaching and postdoctoral research activities were conducted in the Advanced Separation Processes (ASP) research group, headed by prof. Inmaculada Ortiz. In this period a research stay was completed at the Membrane Technology Group under the direct supervision of Prof. Matthias Wessling (Twente University, The Netherlands) supported by a grant from the program “*Programa de estancias para profesores de universidad y de escuelas universitarias en centros extranjeros y españoles*” (Dirección General de Universidades). Results were published in international journals and private and public funding was obtained for research projects.

Senior Research UC, Advanced Separation Processes (ASP) (2002-2012)

After her postdoctoral stay in Twente University, she started a new research line focused in electro-membrane processes. This technology has been the core of her research activity as PI in projects of the National R+D+i Program (CTM2017-87850-R; CTM2014-57833-R; CTM2011- 23912; CTQ2008-03225/PPQ) leading to 4 doctoral theses and other 2 in progress, scientific production in JCR journals as well as a patent (P201200758). Previously she had headed 2 projects belonging to PETRI calls of the Ministry of Science and Technology in direct collaboration with companies, (PTR95-0926-OP, PTR1995-0588-OP) that facilitated in part the realization of 2 doctoral theses in the field of application of advanced membrane technologies for the purification of raw materials in the polymer production industry. The application of new technologies for the decentralized treatment of water has been developed with the management of 2 projects financed by the Ministries of Environment and International Foreign Affairs (080 / RN08 / 03.2 and A / 025334/09), the latter in collaboration with the Al-Balqa Applied University (Jordan). The use of advanced oxidation technologies in environmental and process applications has also been a field of interest. The use of advanced oxidation processes for the treatment of landfill leachates and the use of electro-oxidation for water treatment and reuse in Recirculation Aquaculture systems (RAS) were the objectives of 2 doctoral thesis supervised, which led to published research papers.

Coordinator of Sustainable Processes Engineering Research Group (2013-ongoing)

Since 2013 she has been head of the research group Sustainable Processes Engineering (IPS). Her research interest has been focused in the developments and application of advanced oxidation processes, advanced membrane processes and risk assessment.

Besides the contributions in international journals, the dissemination of results has allowed more than 110 contributions in national and international well-known congresses in the fields of Chemical Engineering, Science and Membrane Technology, Water Treatment and related.

Part C. Relevant accomplishments

C.1. Publications

Ten recent publications selected from 65 contributions in JCR are presented:

1. Ortiz-Albo P, Torres.-Ortega S., Gonzalez-Prieto M., Urtiga A.M.; Ibáñez R. (2018) Techno-Economic Feasibility Analysis for Minor Elements Valorization from Desalination Concentrates Separation and Purification Reviews; doi.org/10.1080/15422119.2018.1470537 (Published online: 09 May 2018). Q1.
2. Herrero-Gonzalez, M.; Diaz-Guridi, P.; Dominguez-Ramos, A.; Ibáñez, R.; Irabien, A. (2018) Photovoltaic solar electrodialysis with bipolar membranes. *Desalination*, 433, 155–163. Q1.

3. Fernández-González, C., J. Kavanagh, Domínguez-Ramos, A., Ibáñez, R., Irabien, A Yongsheng C..H. Costner (2017) *Electrochemical Impedance spectroscopy of enhanced layered nanocomposite anion Exchange membranes*. Journal of Membrane Science 541, 611-620. Q1.
4. Fernández-González, C., B Zhang A, Domínguez-Ramos, A., Ibañez, R., Irabien, A Yongsheng C..(2017) *Enhancing fouling resistance of polyethylene anion Exchange membranes using carbón nanotubes and iron oxide nanoparticles*. Desalination 411, pp 19-27. Q1.
5. Fernández-González, C., Domínguez-Ramos, A., Ibañez, R., Yongsheng C.; Irabien, A.(2017) *Valorization of desalination brines by electrodialysis with bipolar membranes using nanocomposite anion exchange membranes* Desalination 406, pp 16-24. Q1.
6. Fernandez-Gonzalez, C., Dominguez-Ramos, A., Ibáñez, R., Irabien, A. (2015) *Sustainability assessment of electrodialysis powered by photovoltaic solar energy for freshwater production*. Renewable and Sustainable Energy Reviews 47, 4173, pp. 604-615 Q1.
7. Pinedo, C.V. García, A.A. D'Alessandro, R. Ibáñez, S. Tonelli, M.S. Díaz, Á. Irabien. (2016) *Microalgae Biorefinery Alternatives and Hazard Evaluation* Chemical Engineering Research and Design 107, pp. 117-125 Q2
8. Fernandez-Gonzalez, C., Dominguez-Ramos, A., Ibañez, R., Irabien, A. (2016) *Electrodialysis with bipolar membranes for valorization of desalination brines*. Separation and Purification Reviews 45,4, pp275-287 Q1
9. Pérez-González A., Ibáñez R., Gómez P., Urtiaga A., Ortiz I.; Irabien A. (2015) *Nanofiltration separation of polyvalent and monovalent anions in desalination brines*. Journal of Membrane Science, 473, pp 16-27 Q1.
10. Virginia Valiño, M^a Fresnedo San Román, Raquel Ibáñez, José M. Benito, Isabel Escudero, Inmaculada Ortiz. (2014) *Accurate determination of key surface properties that determine the efficient separation of bovine milk BSA and LF proteins*. Separation and Purification Technology, Vol 135, 145–157. Q1

C.2. Research Projects and Grants

Research projects obtained in competitive calls in which the author is acting as coordinator have been selected:

ImpulRAS: Hacia una mejora tecno-económica de ELOXIRAS®: control y minimización de subproductos (RTC-2017- 035-2) Founded by: Ministerio de Economía y Competitividad. Convocatoria Retos Colaboración 2017. Entidades participantes: Apria Systems (coordinador) Universidad de Cantabria. De: 01/01/2018 a 31/12/2021. IP: Pedro Gomez (Apria Systems). IP subproyecto de la UC (Raquel Ibáñez). N° Invtgs 7. (concesión provisional).

Tecnologías Ambientales sostenibles para el aprovechamiento energético de corrientes residuales. (CTM2017-87850-R). Founded by: Ministerio de Economía y Competitividad. Entidades participantes: Universidad de Cantabria. De: 01/01/2018 a 31/12/2020. IP: **Raquel Ibáñez**. Invtgs 6.

Estrategias de valorización de Salmueras (CTM2014-57833-R). Founded by: Ministerio de Economía y Competitividad. Entidades participantes: Universidad de Cantabria. De: 01/01/2015 a 31/12/2017. IP: **Raquel Ibáñez**. N° Invtgs 5.

GRADISAL: Aplicación en Cantabria de la tecnología EDR a la obtención de energía renovables marina mediante gradiente salino: fase I: viabilidad técnico-económica (RM16-XX-046 - SODERCAN/FEDER). Founded by: Sociedad para el desarrollo de Cantabria-Fondos Feder (SODERCAN-FEDER). Entidades participantes: Universidad de Cantabria. MARE, Apria Systems. Duración: 30/12/2016 a 29/12/2018 IP: Inmaculada Ortiz Uribe.

Valorización sostenible de concentrados de procesos de desalación (EUIN2013-50956). Founded by: Ministerio de Economía y Competitividad. Entidades participantes: Universidad de Cantabria. De: 01/10/2013 -13/10/2016. IP: **Raquel Ibáñez** N° Invtgs:7.

Mejoras técnicas y energéticas en la tecnología EDBM. Recuperación de ácidos y bases de concentrados de OI como caso de estudio (CTM2011-23912). financiación: Ministerio de Ciencia e Innovación. Entidades participantes: Universidad de Cantabria. De: 01/01/2011 a 31/12/2014 IP: **Raquel Ibáñez**. N° Invtgs: 6.

Integración de energías renovables en sistemas de tratamiento de aguas para pequeñas comunidades-renovación 2011 (A/033269/109) financiación: AECID. Ministerio de Asuntos Exteriores y Cooperación. Participantes: Universidad de Cantabria-Blaqa Applied University (Jordania) Duración: 01/01/2011 a 31/12/2011. IP: **Raquel Ibáñez**. N° Invtgs: 8

I+D de EDBM. Fraccionamiento de Proteínas lácteas como caso de estudio (CTQ2008-03225/PPQ). Financiación: Ministerio de Ciencia e Innovación. participantes: Universidad de Cantabria. De: 01/01/2009 a 31/12/2011. IP: **Raquel Ibáñez**. N° Invtgs.: 8.

C.3. Contracts

Apoyo técnico al estudio de viabilidad técnico-económica de producción de cauchos hidrogenados con propiedades ópticas. Founded by: Dynasol Elastomeros (desde 01/06/2015 hasta 01/01/07/2016). Investigadora.

Estudio de la estabilización de cenizas volantes de incineración mediante carbonatación.. Founded by: SADER (31/03/2015 to 01/02/2016). Investigadora.

Apoyo técnico al desarrollo de un proceso de oxidación avanzada para el tratamiento de aguas residuales con alta carga orgánica refractaria. Founded by: Dynasol Elastomeros (01/06/2015 to 01/01/07/2016). Investigadora.

Desalcoholización Parcial de Vino mediante contactores de membrana en planta piloto. Modelado y optimización. (founded by FUNDACIÓN PARC TECNOLÒGIC DEL VI (VITEC), 27/02/2012 to 26/08/2012. Investigadora.

C.4. Patents and other IPR

1. Inventores (p.o. de firma): Ortiz I, Galán B., **Ibáñez R.** **Título:** *Método para la extracción y concentración simultaneas de compuestos de fases líquidas utilizando membranas microporosas* N. de solicitud: ES 2 187 311 B2. País de prioridad: España. Entidad titular: Universidad de Cantabria Países a los que se ha extendido: España.

2. Inventores (p.o. de firma): Ortiz I, Urtiaga A.M.; **Ibáñez R.**, Perez-Gonzalez Antia **Título:** *Proceso de Conversión de Salmueras en ácidos y Bases y productos obtenidos* N. de solicitud: P201200758. País de prioridad: España. Entidad titular: Universidad de Cantabria Países a los que se ha extendido: España.

3. Inventores (p.o. de firma): Valiño V, Valiente R., San Román M.F., **Ibáñez R.**, Ortiz I **Título:** *Método espectroscópico para la determinación de proteínas en medios complejos*. N. de solicitud: ES2464440 A1 País de prioridad: España. Fecha de prioridad: (02.06.2014). Entidad titular: Universidad de Cantabria. Países a los que se ha extendido: España

C.5, Thesis Supervision.

Novel Nanocomposite Membranes for a sustainable desalination. Carolina Fernández Gonzalez. (mención internacional: si).

Medida, Caracterización y Separación de Biomoléculas con Alto Valor Añadido. Virginia Valiño Llamazares (mención internacional: si).

Contribution to landfill leachate treatment of municipal solid waste by Advanced Oxidation Process. Elia Alonso Solana.

Reuse of seawater in intensive aquaculture systems based on electrochemical oxidation. Vanesa Díaz Gómez

Contribución a la investigación y desarrollo de la tecnología electrodiálisis con membranas bipolares. Pilar Mier López (mención europea: si).

Síntesis, Análisis y Optimización de Procesos de Pervaporación. Pedro Gómez Rodríguez (mención europea: si).

Diseño del Proceso de Purificación de estireno mediante adsorción en Alumina. M^a José Rivero Martínez

Evaluación de riesgos en suelos afectados por hidrocarburos del petróleo. Javier Pinedo Alonso (mención internacional: si).