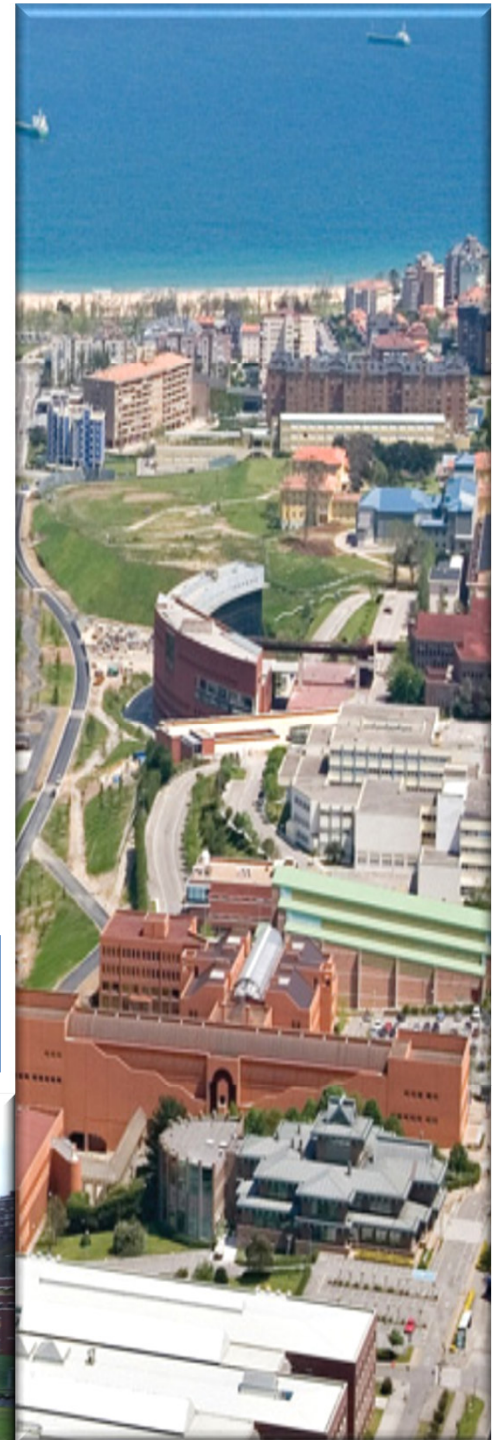


RESEARCH TEAM FOR SUSTAINABLE PRODUCTION IN CANTABRIA

2014 ACTIVITY





**Department of Chemical and
Biomolecular Engineering
(SPAIN)**



**Sustainable Production in Cantabria
Department of Chemical and Biomolecular Engineering**

**ETSIIyT, Universidad de Cantabria
Av. Los Castros s/n 39005 - Santander - Cantabria
Spain**

Tel.: +34 942 201585 / FAX: +34 942 201591



SOSPROCAN TEAM

HUMAN RESOURCES

RESEARCH TOPICS

TRANSFER OF KNOWLEDGE

- Academy
- Advanced Seminars
- Doctoral Thesis
- Events

R & D

- Mobility
- Awards and Partipation in National and International Organisms
- Projects
- Publications
- Book chapters
- Patents
- Congress and Conference Contributions

ANALYTICAL SERVICES

OTHER EVENTS

SOPROCAN

TEAM



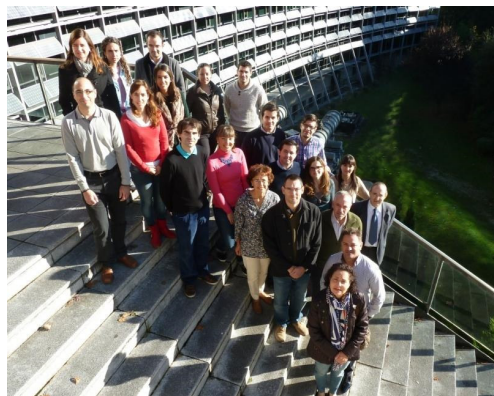
The SOSPROCAN team hosts a large number of researchers of the University of Cantabria with background in the analysis, design and optimization of environmental and production processes.

The mission of this team is to develop cutting-edge research to advance the sustainability and innovation of environmental and production processes.

The members of SOSPROCAN team belong to the research groups:

DePRO

Development of Environmental
and Production Processes



PAS

Advanced Separation
Processes



TAB

Environmental Technologies
and Bioprocesses



<http://www.unican.es/Departamentos/ingquimica/>
<http://grupos.unican.es/pasep/>
<http://grupos.unican.es/depro/>



<https://www.facebook.com/IngenieriaQuimicayBiomolecular>

HUMAN

RESOURCES



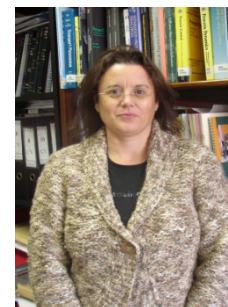
UNIVERSITY PROFESSORS



Prof. Angel Irabien
Head of the research group
DEPRO
irabienj@unican.es



Prof. Inmaculada Ortiz
Head of the research group
PAS
ortizi@unican.es



Prof. Ane M. Urtiaga
Head of the research group
TAB
urtiaga@unican.es

ASSOCIATE PROFESSORS



Rubén Aldaco
aldacor@unican.es



Roberto Arce
arcer@unican.es



Ignacio Fernández
fernandi@unican.es



Aurora Garea
gareaa@unican.es



Daniel Gorri
gorrie@unican.es



Raquel Ibáñez
ibañezr@unican.es



María José Rivero
riveromj@unican.es



María Fresnedo San Román
sanromm@unican.es

ASSISTANT PROFESSORS, PhD



Manuel Álvarez

alvarezgm@unican.es



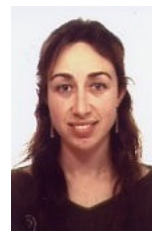
Enrique Álvarez

alvarezge@unican.es



Eugenio Bringas

bringase@unican.es



Nazely Diban

dibann@unican.es



Antonio Dominguez

domingueza@unican.es



Alfredo Ortiz

ortizal@unican.es

PART TIME PROFESSORS



Julián Díaz

diazju@unican.es



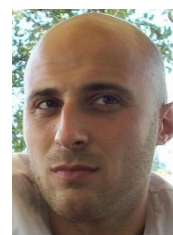
Jose Antonio Fernández

fernandezfja@unican.es



Pedro Manuel Gómez

gomezrp@unican.es



Axel Arruti

arrutia@unican.es



Javier Pinedo

pinedoj@unican.es



Henar Samaniego

samaniegoh@unican.es

RAMÓN Y CAJAL AND JUAN DE LA CIERVA POST-DOC RESEARCHERS



Clara Casado

casadoc@unican.es



Verónica García

garciapv@unican.es



Beatriz Arce

arceb@unican.es



Sonia Gómez

gomez@sunican.es



Gema Pérez

perezg@unican.es



Oscar Primo

primoo@unican.es

TECHNICAL STAFF

PhD STUDENTS



Andrés del Castillo

castilloa@unican.es



Mariana Díaz

diazvm@unican.es



Sara Domínguez

dominguezs@unican.es



Carlos Javier Escudero

[Carlos-](#)

javier.escudero@alumnos.unican.es



Pablo Fernández

fcastrop@unican.es



Carolina Fernández

fernandezgoc@unican.es



Isabel García

garciahmi@unican.es



Lucía Gómez

gomezcomal@unican.es



Ana Fernández

fbarquina@unican.es



Jenifer Gómez

gomezjp@unican.es



Beatriz Gómez

gomezrb@unican.es



Ana María Hernández

hernandezam@unican.es



Jara Laso

lasoj@unican.es



María Margallo

margallom@unican.es



Juan Martínez

martinezpj@unican.es

PhD STUDENTS



Iván Merino

merinoi@unican.es



Adham Norkobilov

adham.norkobilov@alumnos.unican.es



Isabel Ortiz

ortizgi@unican.es



Antía Pérez

perezga@unican.es



Paula Ribao

ribaop@unican.es



Sara Ruiz

ruizas@unican.es



Juan Saiz

saizci@unican.es



Germán Santos

santosg@unican.es



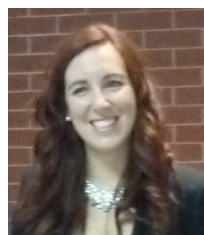
Esther Santos

santosse@unican.es



Rubén Sanz

sanzgr@unican.es



Virginia Valiño

valinov@unican.es



Marta Vallejo

vallejomm@unican.es



Gabriel Zarca

zarcag@unican.es



Raúl Zarca

zarcar@unican.es

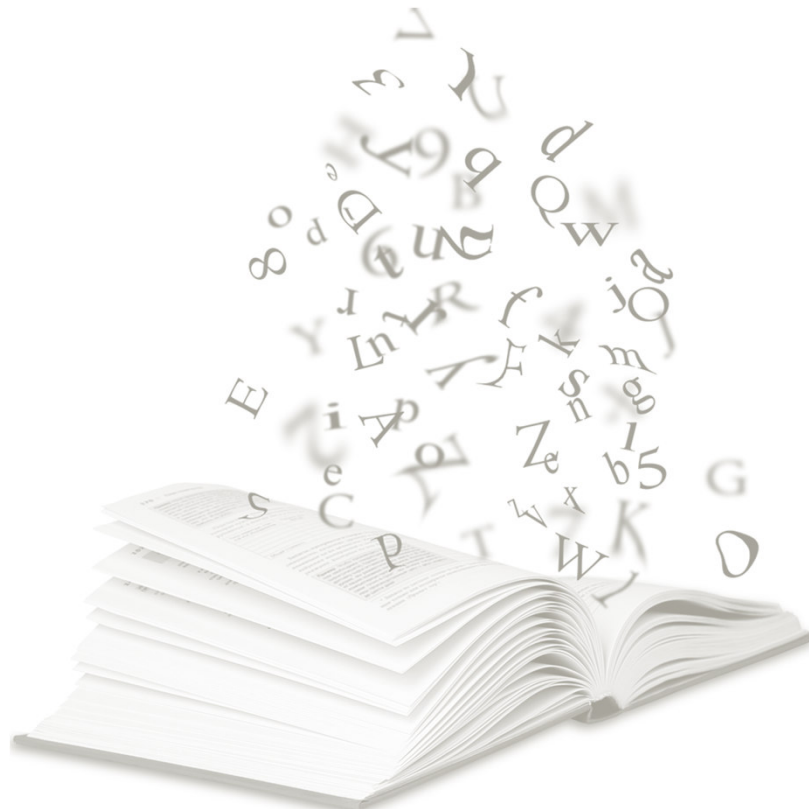


**RESEARCH
TOPICS**

Research Topics



TRANSFER OF KNOWLEDGE



✓ Official Master in Chemical Engineering

The Official Master in Chemical Engineering is jointly taught with the University of the Basque Country promoting an excellent training program with highly specialized Academics. The degree follows up the previous edition of the Master in Chemical Engineering “Sustainable Production and Consumption” of the University of Cantabria and the Master in Chemical Process Engineering and Sustainable Development of the University of the Basque Country, both taught since 2007.

The master endorses the guidelines recorded in **BOE A-2009-12977**, June 8th, 2009.

✓ Doctoral Studies in Chemical and Process Engineering

Preliminary Excellence Award MEE2011-0031

- Positive Evaluation of the Doctorate Studies by the Spanish “Consejo de Coordinación Universitaria, October 5th, 2009.

✓ International Academic Exchange Socrates-Erasmus Programmes.


Másteres Oficiales de la Universidad de Cantabria



Máster Universitario en Ingeniería Química

Es un Máster Oficial Interuniversitario entre la Universidad de Cantabria (UC) y la Universidad del País Vasco (UPV/EHU) que se imparte por primera vez el curso 2014-2015 y surge como continuidad del Máster en Ingeniería Química “Producción y Consumo Sostenible” de la Universidad de Cantabria y del Máster en Ingeniería de Procesos Químicos y Desarrollo Sostenible de la UPV/EHU, ambos impartidos desde 2007. El Máster en Ingeniería Química recoge las directrices de la resolución de 8 de junio de 2009 de la Secretaría General de Universidades acerca de la Profesión del Ingeniero Químico.

Información
Área de conocimiento: Ingeniería y Arquitectura
Lugar de impartición: UC y UPV/EHU
Instituciones participantes: UC y UPV/EHU
Duración: 1,5 cursos académicos (3 cuatrimestres)
90 créditos ECTS 60 ETCS teóricos 30 ETCS prácticos (incluyendo el Trabajo Fin de Máster)
Idioma: Español
Tipo de docencia: 100% presencial
Doctorados de la Universidad de Cantabria a los que da acceso: - Programa de Doctorado en Ingeniería Química, de la Energía y de Procesos
Precio matrícula (curso 2013-2014): Se impartirá por primera vez en el curso 2014-15
Contacto: etsit@unican.es gestion.academica@unican.es

Finalidad
El objetivo fundamental del Máster en Ingeniería Química es formar profesionales que sean capaces de aplicar métodos científicos y técnicos para plantear y resolver problemas de investigación, desarrollo y aplicación industrial en el campo de la industria química y de procesos. También podrán desarrollar su actividad en el campo de la investigación ya que una vez cursado este Máster podrán acceder al Programa de Doctorado en Ingeniería Química, de la Energía y de Procesos de la UC, o a su equivalente en la UPV-EHU.

Perfil del alumnado
El perfil de ingreso idóneo de los estudiantes del presente Máster es el de aquellos alumnos que acrediten las competencias correspondientes al

Grado de Ingeniería Química. Corresponden a estas competencias los Graduados en Ingeniería Química o Graduados en Ingeniería Química Industrial, los Titulados en Ingeniería Química, así como los titulados en Ingeniería Industrial (especialidad de Química Industrial) o titulados en Ingeniería Técnica Industrial (especialidad de Química Industrial).

Para el resto de las titulaciones la Comisión Académica del Máster estudiará cada caso particular y propondrá la realización de complementos formativos.

Salidas profesionales
El Ingeniero Químico es un profesional versátil, capacitado para trabajar en gran variedad de sectores industriales, de servicios y Administración, y desempeñar muy diversas funciones profesio-

nales. La sociedad actual demanda este tipo de profesionales con una formación específica en Ingeniería Química, capacitados para desarrollar, mejorar y optimizar procesos, operar plantas de producción, etc., en la Industria Química y de Procesos. Algunas de las áreas para desarrollar su labor profesional serían: diseño e ingeniería de proceso, producción e ingeniería de producto, I+D+i, gerencia y dirección, o ventas y marketing.



<http://www.unican.es/Centros/etsit/postgrado/Master+IQ.htm>

ADVANCED SEMINAR “Topics in Chemical and Process Engineering”

- **“Las patentes. Vía para proteger la innovación y fuente de información”**, lectured by Ms. Esther Arias Perez-Illzarbe, Patent Examiner of the Department of patents and technological information, Oficina Española de Patentes y Marcas.
- **“Desarrollo de membranas poliméricas para la producción de energía, las separaciones iónicas y la emulación de la captación biológica de metales por microorganismos”**, given by Dr. Eduardo Rodríguez de San Miguel Guerrero, Head of the Department of Analytical Chemistry, Universidad Nacional Autónoma de Mexico.
- **“Acumuladores redox para un futuro energético más sostenible”**, given by Prof. Dr. Antonio Aldaz, University of Alicante.
- **“Electrocatalisis con nanoparticulas: casos de éxito y retos futuros”**, given by Dr. Jose Solla Gullón, Senior Researcher, Electrochemical Institute, University of Alicante.
- **“New horizons in inorganic membranes”** and **“High performance membranes: from polyimide to nanoporous membranes”**, taught by Dr. Izumi Kumakiri and Prof. Hidetoshi Kita, respectively, Department of Environmental Science and Engineering, Graduate School of Science and Engineering, Yamaguchi University, Japan.
- **“Gestión sostenible de residuos peligrosos”**, given by Prof. Juan José Rodríguez Jiménez, Universidad Autónoma de Madrid.
- **“Investigación y desarrollo: puentes entre el mundo académico y el mundo empresarial”**, given by Dra. Lourdes F. Vega, Directora de MATGAS y Directora de I+D de Carburos Metálicos.



Transfer of knowledge – Doctorate Thesis

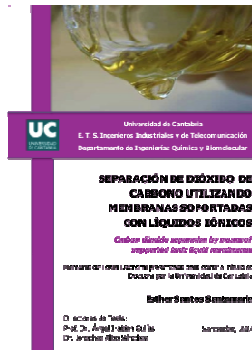
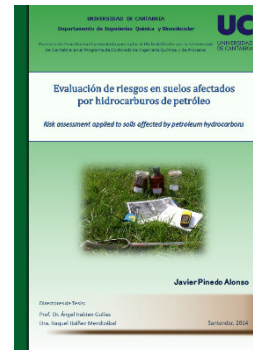
February 21st, 2014

Javier Pinedo's PhD Dissertation: **"Risk assessment applied to soils affected by petroleum hydrocarbons"**.

Supervisors: Prof. Ángel Irabien and Dr. Raquel Ibáñez.

Esther Santos' PhD Dissertation: **"Carbon dioxide separation by means of supported ionic liquid membranes"**.

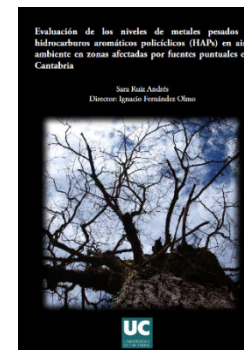
Supervisors: Prof. Angel Irabien and Dr. Jonathan Albo



May 23th, 2014

Sara Ruiz's PhD Dissertation: **"Evaluación de los niveles de metales pesados e hidrocarburos aromáticos policíclicos (PAHs) en aire ambiente en zonas afectadas por fuentes puntuales en Cantabria"**.

Supervisors: Prof. Ángel Irabien and Dr. Ignacio Fernández Olmo

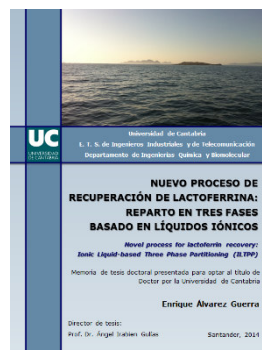


Transfer of knowledge – Doctorate Thesis

July 24th, 2014

Enrique Álvarez's PhD Dissertation: **"Novel process for lactoferrin recovery: Ionic Liquid-based Three Phase Partitioning (ILTPP)"**.

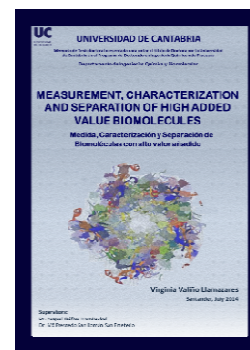
Supervisor: Prof. Ángel Irabien.



July 29th, 2014

Virginia Valiño's PhD Dissertation: **"Measurement, characterization and separation of high added value molecules"**.

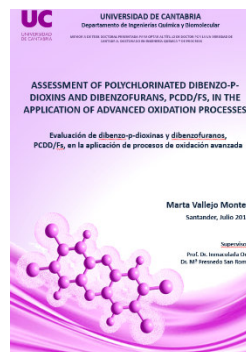
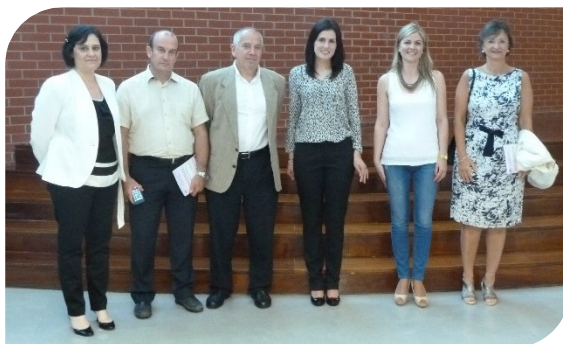
Supervisor: Dr. Raquel Ibáñez and Dr. María Fresnedo San Román.



July 30th, 2014

Marta Vallejo's PhD Dissertation: **"Assessment of polychlorinated dibenzo-p-dioxins and dibenzofurans, PCDD/Fs, in the application of advanced oxidation processes"**.

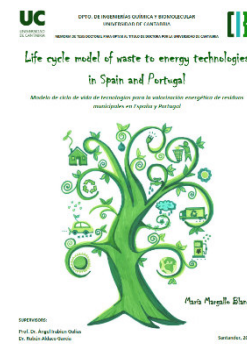
Supervisor: Prof. Inmaculada Ortiz and Dr. María Fresnedo San Román.



December 15th, 2014

María Margallo's PhD Dissertation: **"Life cycle model of waste to energy technologies in Spain and Portugal"**.

Supervisor: Prof. Angel Irabien and Dr. Rubén Aldaco.



January 20th, 2014

Prof. Inmaculada Ortiz was appointed to the position of **Head of the Department of Chemical and Biomolecular Engineering**, in a ceremony chaired by the UC Chancellor D. José Carlos Gómez Sal, who welcomed Inmaculada Ortiz to the coming period of the Department.



February 21st, 2014

The School of Engineering welcomed the regional level “**Chemistry Olympiad for Secondary School Students**”. 59 students from 12 secondary schools took part in the competition. During the afternoon the students had the opportunity to demonstrate their knowledge in two sessions, test questions and four problems. Furthermore, owing to the interest of the participants about chemistry, members of the Department of Chemical and Biomolecular Engineering introduced the fundamentals and structure of the Chemical Engineering degree offered at the University of Cantabria. This edition was the first one organized by Association of Chemistry and Chemical Engineering of Cantabria (AQUIQÁN), who organized the award ceremony of the local phase on April 29th, 2014.

The winners of the gold, silver and bronze medal were Sergio Gutiérrez (IES Marqués de Santillana, Torrelavega), Carlota Guati (IES Santa Clara, Santander) and Ana Gallego (Calasanz School, Santander), respectively. They were promoted to the national stage, held at the University of Oviedo on April 25-27th, 2014. The finalists in the national phase were able to access the international Olympiads, the 46th International Chemistry Olympiad, held in Hanoi (Vietnam) in July and to the *Iberoamerican Chemistry Olimpiad*, held in Montevideo (Uruguay).



THE APPLICATION OF GREEN TECHNOLOGIES FOR SUSTAINABLE WATER PURIFICATION AND REUSE (GREENTECH), NEW INDIGO ERA-NET NPP2

April 10-17th, 2014 - Visit of Verónica García to the University of Oulu

Dr. Verónica García (Juan de la Cierva researcher) visited the Mass and Heat Transfer Process Laboratory, Department of Process and Environmental Engineering, University of Oulu, Oulu, Finland in April 10th- 17th. The visit was conducted as part of the Greentech project “The application of green technologies for sustainable water purification and reuse” (New Indigo Programme, EU). During the visit, progress of the project and the planning of future collaborations were addressed. Furthermore, Dr. García taught two lectures on the topics of “Membrane Technology for the Recovery of Valuable Compounds from Acid Mine Drainage” and “The Use of Liquid Membranes Based Processes for the Minimization of Wastewater Generation in the Electroplating Sector”.

The Greentech project is financed by the New Indigo Initiative, the platform for Indo-European research and innovation cooperation of the European Union. Three partners are involved in the Greentech project: The University of Cantabria, which is the coordinator, the Institute of Chemical Technology (India) and the University of Oulu (Finland).



THE APPLICATION OF GREEN TECHNOLOGIES FOR SUSTAINABLE WATER PURIFICATION AND REUSE (GREENTECH), NEW INDIGO ERA-NET NPP2

April 21-25th, 2014 - Visit to the Institute of Chemical Technology (ICT) in Mumbai, India

In the frame of the Greentech project “The application of green technologies for sustainable water purification and reuse”, Dr. Alfredo Ortiz and Dr. Gema Pérez visited the Institute of Chemical Technology, Mumbai, India, last April 21-25, 2014. During the stage they had the opportunity to visit the ICT campus and discuss with the Indian delegates, Prof. Ganapati D. Yadav, Prof. Virendra K. Rathod, Prof. Kumudini V. Marathe, and the PhD. Students Chandrakanth Gadipelly and Sachin Jadhav, the progress of the project and the opportunities for future collaborations.

Besides, on Monday 21st, Dr. Alfredo Ortiz delivered a lecture on “The importance of ionic liquids for attaining sustainable process intensification”. The lecture was chaired by Dr. Sunil S. Bhagwat, Professor and Head of the Department of Chemical Engineering at the ICT, and was attended by the faculty and students of the ICT.



April 30th, 2014

Dr. Eugenio Bringas was promoted to **Associate Professor in the Department of Chemical and Biomolecular Engineering** (University of Cantabria). The assessment committee was constituted by Prof. Jose Angel Irabien, Prof. Ane Urtiaga and Dr. Raquel Ibáñez. During one hour the candidate presented his Curriculum Vitae and Teaching and Research Projects, a summary of his academic activity since 2001.





**IX IBERO-AMERICAN CONGRESS ON MEMBRANE SCIENCE
AND TECHNOLOGY**

May 25 to May 28, 2014. Santander, Spain

IX Ibero American Congress on Membrane Science and Technology – CITEM 2014

The research group Advanced Separation Processes (Department of Chemical and Biomolecular Engineering, University of Cantabria) hosted the **IX Ibero-American Congress on Membrane Science and Technology – CITEM 2014**, attended by more than 170 experts, mainly from Brazil, Argentina, Colombia, Mexico, Spain and Portugal, and also from other European countries, like Italy, Belgium, Germany, Turkey, Denmark or Finland.

The congress took place in Hotel Chiqui (Santander) and was opened by the Vice-chancellor for Research and Knowledge Transfer, Mr. Ángel Pazos, Mr. Alfonso Tomé Díaz de Terán, city councilor, the president of the European Membrane Society, Prof. Bart van der Bruggen, Prof. Claudio Alberto Habert on behalf of the Brazilian Society of Membrane Processes, and Dr. Alfredo Ortiz Sainz de Aja, from the Department of Chemical and Biomolecular Engineering and president of the organizing committee.



IX Ibero American Congress on Membrane Science and Technology – CITEM 2014

Several thematic areas of membrane science and technology were covered, such as the application of electro-dialysis processes for sustainable production and recycling, new applications in the fuel field, water treatment, CO₂ capture, biomedical applications, etc. The program covered more than 100 oral lectures and almost 115 poster presentations, from students and from senior scientists in the field as well, giving an overview of the past and future developments in that specific fields. Moreover, a workshop on Membrane Technologies for Water Treatment took place as part of CITEM 2014. Plenary sessions were taught by the following international renowned experts: Prof. Bart van der Bruggen, president of the European Membrane Society and professor of Chemical Engineering at Catholic University of Lovaina (KU Leuven) in Belgium, Alberto Claudio Habert, professor of Chemical Engineering at Escola Politécnica da Universidad de São Paulo (Brazil), founder member of the Brazilian Society of Membrane Processes, Joao Crespo, professor of Chemical Engineering at Universidade Nova de Lisboa and Vice-rector of the Portuguese Foundation of Science and Technology, and Angel Irabien, professor of Chemical Engineering at University of Cantabria and board member of the European Federation of Chemical Engineering.



July 7 - 9th, 2014

Antía Pérez, Sara Domínguez, Carolina Fernández and Jara Laso, PhD students, attended the summer course “Agua y energía, un binomio vital”, held in the International University of Andalucia, from July 7th to 9th, 2014. The course took place in Málaga (Spain) and was chaired by Prof. Juan José Rodríguez Jimenez (Universidad Autónoma de Madrid).



http://cursosdeverano.unia.es/item/agua-y-energia-un-binomio-vital.html?category_id=17

**CURSOS
VERANO**

UNIA 2014

July 11th, 2014

Students of the Official Master in Chemical Engineering “Sustainable Production and Consumption”, presented their master’s degree final project.

This postgraduate programme will be continued in the frame of the new University Master in Chemical Engineering in collaboration with The University of Basque Country.



Master universitario*
Ingeniería Química
“Producción y Consumo Sostenible”
7ª edición
curso 2013-2014

* Verificado positivamente por el Consejo de Coordinación Universitaria el 30 de julio de 2009.
Autorizado por la Comunidad Autónoma de Cantabria (BOC 199 de 14 de octubre 2009)

Programa de Doctorado*
en Ingeniería Química y de Procesos

* Programa de Doctorado verificado positivamente por el Consejo de Coordinación Universitaria el 5 de octubre de 2009

Preinscripción: (1ª Fase) 1 al 12 de julio 2013
(2ª Fase) 2 al 20 de septiembre de 2013
Matriculación: (1ª Fase) 23 al 26 de julio a 3 de 2013
(2ª Fase) 2 al 4 de octubre de 2013

Información:
Tfno.: 34 942 206765 Fax: 34 942 201591
<http://departamentos.unican.es/quimica/>
<http://www.unican.es/Infoacademica>
<http://www.unican.es/Centros/etsit/postgrado/>

ESCUELA TÉCNICA SUPERIOR DE INGENIEROS INDUSTRIALES Y TELECOMUNICACIÓN
Departamento de Ingeniería Química y Química Inorgánica
Avda. los Castros s/n 39005 Santander, Cantabria, SPAIN



<http://www.unican.es/Centros/etsit/postgrado/Master+IQ.htm>

July 22nd, 2014

Students of the European Project Semester (EPS) programme, last year of the Degree in Chemical Engineering, presented their Final Degree Projects.

This programme, was attended by students of the universities of Cantabria, Graz (Austria) and Technical University of Dresden (Germany).



Transfer of knowledge – Events

September 30th – October 3rd, 2014

Alberto Romero, Ignacio Nilo Ruiz, Raquel Barbadillo and Marta Romay, students of the Degree in Chemical Engineering and members of the Cantabria University Student Chapter of AIChE, have participated in the **CHEM-UP program** during the celebration of “Expoquimia The International Chemistry Event” in Barcelona. This program wants to be the meeting point of European researchers and chemical companies to promote innovative business in the chemical sector.

Furthermore, during those days the undergraduate students had the opportunity of attending the plenary conferences held during the 13th Mediterranean Congress of Chemical Engineering.



November 9 – 10th, 2014

Prof. Hidetoshi Kita and Dr. Izumi Kumakiri visited the Department of Chemical and Biomolecular Engineering of the University of Cantabria.

A full programme of activities was performed with the aim of establishing academic and research collaborations between the UC and the University of Yamaguchi in the area of Chemical Engineering. The agenda started with a meeting in the Office of International Relations, about the progress in the bilateral agreement for exchange of students and faculty staff. During the visit Prof. Hidetoshi Kita and Dr. Izumi Kumakiri taught two conferences and two seminars were developed in order to present and discuss the activities of the research units of the Department of Chemical and Biomolecular Engineering of the UC, Development of Chemical Processes and Pollution Control, Advanced Separation Processes and Environmental Technologies and Bioprocesses. After the conferences, a visit to the laboratories and experimental facilities was organized.



November, 2014

The Department of Chemical and Biomolecular Engineering participated in the **Science Week** organized by the University of Cantabria. From November 3th to 21st, 2014, students from different high schools in the region had the opportunity to approach the scientific topics developed by experts of the research community of Cantabria.



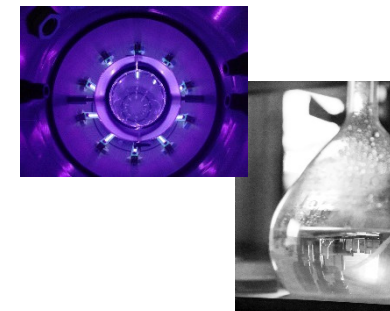
During those days the University opened its doors to receive students. On behalf of the Department of Chemical and Biomolecular Engineering, Dr. Manuel Álvarez, Dr. Enrique Álvarez, Dr. Clara Casado Dr. Antonio Domínguez and PhD were actively involved. The student Andrés del Castillo prepared a visit to the facilities where the visitors could learn practical aspects about Chemical Engineering, and the main outcomes of the experimental work developed in the department.



20th ANNIVERSARY OF CHEMICAL ENGINEERING IN CANTABRIA

November 10 – 14, 2014

Photo contest



Visits to Chemical Companies



Conferences



Distinguished Alumni



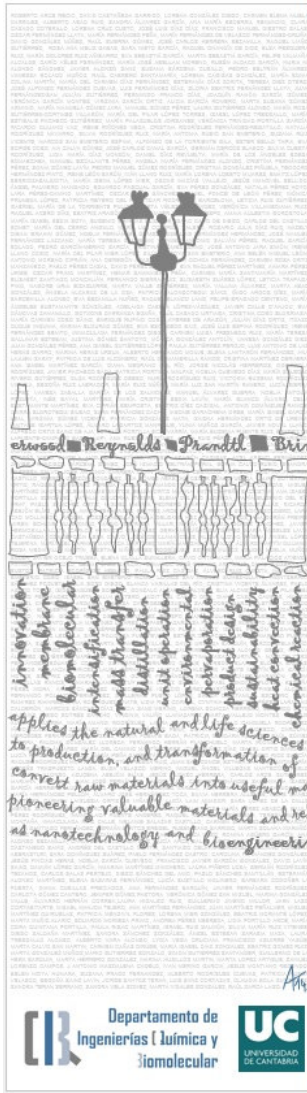
Meeting - Cocktail



Ingeniería
Química
Cantabria

1994
2014

20 años
construyendo
un futuro
sostenible



Dissemination Workshop

A dissemination workshop aimed at high school students was organized by the Department of Chemical and Biomolecular Engineering. Under the slogan “Encuentros con la Ingeniería Química” this activity provides students with practical information about Chemical Engineering, including their employment sectors, both in the region and around the world. Moreover, it is an opportunity to introduce students to the Chemical Engineering degree offered at the University of Cantabria.



R + D



Research mobility of post-graduate students.



Isabel Ortiz, Antía Pérez and Juan Saiz
Environmental and Chemical
Engineering Research Group –
University of Oulu - Finland



Gabriel Zarca
Chemical and Biological
Department, University of Alabama -
Tuscaloosa, USA



Isabel García
Department of Chemical Engineering –
School of Chemical Engineering and
Analytical Science – University of
Manchester – United Kingdom



Lucía Gómez
Université de Toulouse, Université Paul
Sabatier III, France.

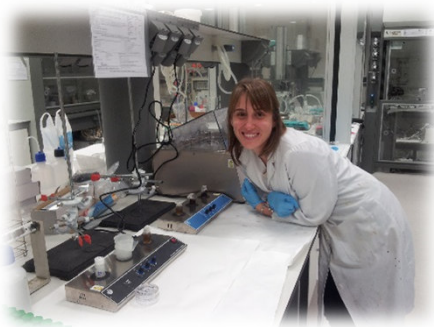


Andrés del Castillo
Research group of Applied
Electrochemistry and Electrocatalysis -
University of Alicante



Incoming students at University of Cantabria

Predoctoral Research Stay



Leticia García
Institute of Electrochemistry
University of Alicante

PhD. Students



Carlos Javier Escudero
Master in Water Science -Universidad de
Guanajuato - Mexico



Adham Norkobilov
Tashkent Chemical-Technological Institute
Uzbekistan

Research mobility of the academic and research staff



Dr. Javier Pinedo made a postdoc internship at the Pilot Plant of Chemical Engineering (PLAPIQUI-UNS CONICET) from August 25th to October 31st.



Dr. Jonathan Albo made an internship at the Institute of Electrochemistry – University of Alicante from 27/06/2014 to: 27/07/2014



The XXXIV Biennial Meeting of the Spanish Royal Society of Chemistry received the 2014 Award OPCE.



Prof. Inmaculada Ortiz was awarded with the Prize for Invention and Research on Applied Chemistry "Professor Martínez Moreno"

Dr. Jonathan Albo received the Award to distinguished PhD thesis in the field of Engineering.



Saint Joseph's Day, March 21st, 2014

After a conference regarding cybersecurity, the different diplomas awarding those students who have obtained the best marks after graduation were given. In the chemical engineering area, Jenifer Gómez Pastora and Sara Domínguez Suárez obtained the award from Chemical Engineering and Master studies, with the works "Equilibrium and kinetics of arsenic removal onto functionalized magnetic nanoadsorbents" and "Mineralisation of bisphenol A with advanced oxidation processes", respectively.

The AIChE students chapter of the University of Cantabria, that was sponsorshipped this year by Columbian Carbon Spain (Aditya Birla), handed the poster awards over to the winners:

1st Prize: Fernando Ramírez, Marta Romay, Elena Fuente, Araceli Avellano, for the poster "Development of a more efficient photocatalyzer Graphene-TiO₂ nanocomposite"

2nd Prize: Enrique Fuentes, Carlos Álvarez, Carlos López, for the poster "MEA: A solution to the green house problem"

3rd Prize: Lucía Sierra, Regina M^a Rodríguez for the poster "Chemical engineering and sustainable development: Water"

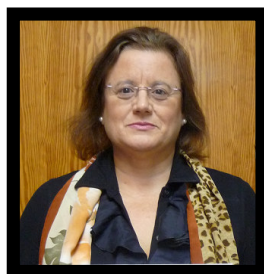
Accesit: Alberto Romero, YiRan Chen, Paula Mantecón for the poster "Treatment of dairy industry wastewater using UASB anaerobic system"





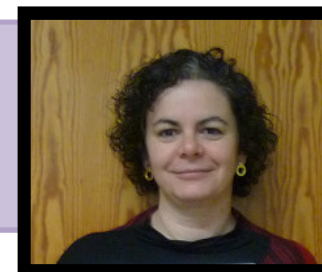
**President of the Section “Environmental Protection and Sustainability”
of the European Federation of Chemical Engineering (EFCE) 2011-2014**

**Secretary of the Assessment Committee “Engineering and Architecture” of
UNIBASQ**
**Member of the Evaluation Committee of Post-doctoral research grants of the
Irish Research Council for Science, Engineering and Technology.**



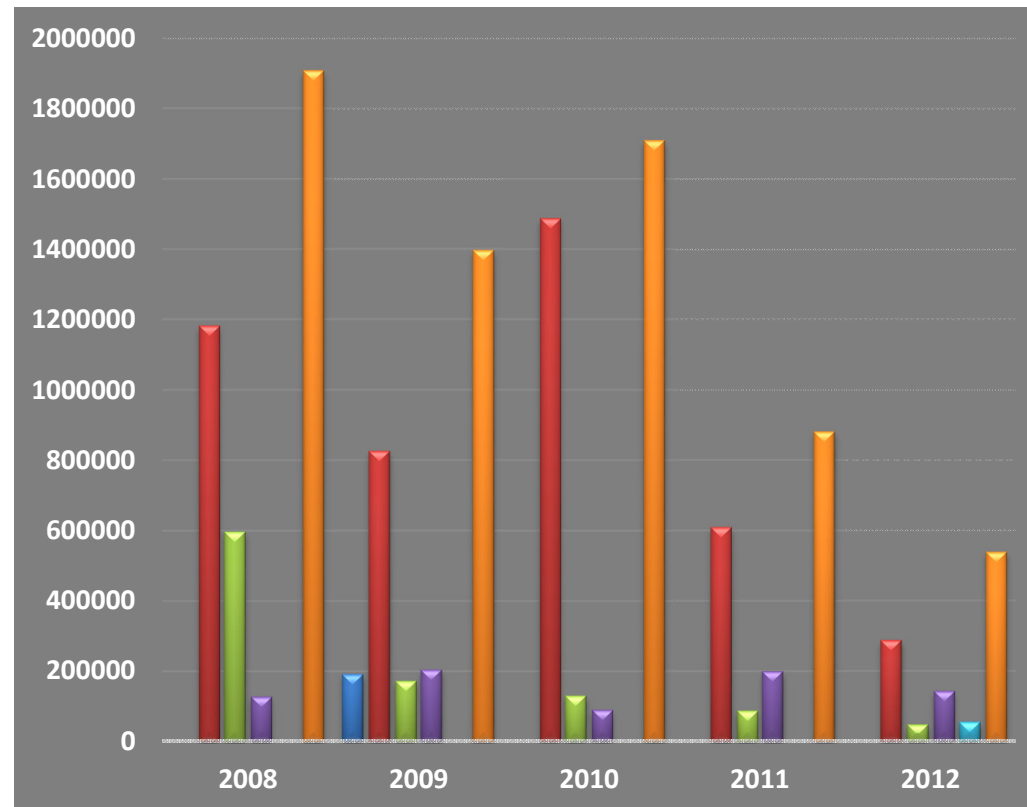
**Scientific Coordinator of Chemical Technology at the National
Assesment Agency (ANEP)**

**Scientific Assessor in Chemical and Environmental Technology R&D
programs of the Ministry of Economy and Competitiveness-Department
of Research Projects**



R&D - Projects

The research groups of SOSPROCAN team are active and competitive R&D groups. Below there is a summary of the projects income, and competitive grant programs funded by various agencies and private companies over the past five years.



■ EU ■ National ■ Regional ■ Private Companies ■ PAR ■ Total

R&D INCOME FROM 2008 TO 2012



Title: Sostenibilidad de la producción de Cantabria

Financial support: Universidad de Cantabria

Main Researcher: : Prof. Ángel Irabien Gulías

Dates: 10/01/2012 – 09/01/2016

Title: Desarrollo de un proceso de captura y reciclado de CO2 (ENE2010-14828)

Financial support: Universidad de Cantabria, Ministerio de Educación y Ciencia

Main Researcher: : Prof. Ángel Irabien Gulías

Dates: 01/01/2011 – 31/12/2014

Title: Estudio de caracterización y análisis del tratamiento de estabilización de las cenizas de combustión de la incineradora de Zabalgarbi para su posterior vertido y/o valorización

Financial support: SA DE DESCONTAMINACION Y ELIMINACION DE RESIDUOS (SADER)

Main Researcher: Ángel Irabien Gulías

Dates: 30/12/2013 – 31/12/2014

Title: Colaboración como experto en la certificación de proyectos I+D+i

Financial support: AENOR ASOC.ESPAÑOLA DE NORMALIZACION Y CERTIFICACIÓN

Main Researcher: Prof. Ángel Irabiel Gulías

Dates: 02/09/2014 – 31/12/2014

Title: Ensayos Sosprocan: Ensayos e informes de caracterización de muestras sólidas y líquidas mediante ensayos físico-químicos

Participant entities: Universidad de Cantabria, Convenio FLTQ

Main Researcher: Prof. Ángel Irabien Gulías

Dates: 02/2008 –

Title: **Desarrollo e integración de procesos con membranas para la captura y valorización de dióxido de carbono (CTQ2013-48280-C3-1-R)**

Financial support: MINISTERIO DE ECONOMIA Y COMPETITIVIDAD

Main Researcher: Prof. Ángel Irabien Gulías

Dates: 01/01/2014 – 31/12/2016

Title: **Valorización química sostenible de dióxido de carbono (CTQ2014-55716-REDT)**

Financial support: MINISTERIO DE ECONOMIA Y COMPETITIVIDAD

Main Researcher: Prof. Ángel Irabien Gulías

Dates: 01/01/2014 – 31/12/2016

Title: **The application of green technologies for sustainable water purification and reuse, INDIGO-DST1-017.**

Financial support: EUROPEAN UNION

Main research: Prof. Inmaculada Ortiz Uribe

Date: 01/06/2012 – 01/06/2014

Title: **Nuevos procesos de separación con control cinético basados en la utilización de materiales funcionalizados (cofinanciado con fondos FEDER) CTQ2012-31639.**

Financial support: Ministerio de Economía y Competitividad

Main Researcher: Prof. Inmaculada Ortiz Uribe

Dates: 01/01/2013 – 31/12/2015

Title: **Colaboración como experto en la certificación de proyectos (evaluación AENOR)**

Financial support: AENOR ASOC. ESPAÑOLA DE NORMALIZACION Y CERTIFICACIÓN

Main researcher: Prof. Inmaculada Ortiz Uribe

Date: 11/08/2014 – 31/12/2014

Title: Evaluación de Proyectos

Financial support: EQA CERTIFICADOS I+D+I, S.L.U.

Main Researcher: Prof. Inmaculada Ortiz Uribe

Dates: 27/07/2014 – 31/12/2017

Title: Líneas de investigación del grupo procesos avanzados de separación

Financial support: UNIVERSIDAD DE CANTABRIA

Main Researcher: Prof. Inmaculada Ortiz Uribe

Dates: 27/07/2012 – 26/07/2016

Title: Promoción de la investigación

Main Researcher: Prof. Inmaculada Ortiz Uribe

Title: Reparación y mantenimiento de equipos

Main researcher: Prof. Inmaculada Ortiz Uribe

Title: Procesos de separación con membranas aplicados a la valorización energética de gases residuales de la industria de proceso: recuperación de hidrógeno y monóxido de carbono.

Financial support: Ministerio de Ciencia e Innovación

Main Researcher: Prof. Ana María Urtiaga Mendía

Dates: 01/01/2011 – 31/12/2014

Title: Desarrollo de tecnologías innovadoras para el tratamiento de contaminantes perfluorados en aguas (CTM2013-44081-R)

Financial support: MINISTERIO DE ECONOMIA Y COMPETITIVIDAD

Main researcher: Prof. Ana María Urtiaga Mendía

Date: 01/01/2014 – 31/12/2016

Title: **Investigación en tecnología avanzadas para el tratamiento de contaminantes emergentes en aguas**

Financial support: UNIVERSIDAD DE CANTABRIA

Main Researcher: Prof. Ana María Urtiaga Mendía

Dates: 17/03/2014 – 16/03/2015

Title: **Use of boron-doped diamond electrodes for water treatment**

Financial support: SHAW ENVIRONMENTAL & INFRASTRUCTURE, INC.

Main researcher: Prof. Ana María Urtiaga Mendía

Date: 28/05/2013 – 15/01/2014

Title: **Cromatógrafo de gases (GC) con detector de captura de electrones (ECD) y espectrómetro de masas (MS)**

Financial support: MINISTERIO DE ECONOMIA Y COMPETITIVIDAD

Main researcher: Prof. Ana María Urtiaga Mendía

Date: 01/01/2010 – 31/12/2015

Title: **Líneas de investigación del grupo tecnologías ambientales y bioprocesos**

Financial support: UNIVERSIDAD DE CANTABRIA

Main researcher: Prof. Ana María Urtiaga Mendía

Date: 08/09/2014 – 07/09/2016

Title: **Mejoras técnicas y energéticas en la tecnología EDBM. Recuperación de ácidos y bases de concentrados de OI como caso de estudio.**

Financial support: Ministerio de Ciencia e Innovación

Main Researcher: Dra. Raquel Ibáñez Mendizábal

Dates: 01/01/2012 – 31/12/2014

Title: **Valorización sostenible de concentrados de procesos de desalación**

Financial support: MINISTERIO DE ECONOMIA Y COMPETITIVIDAD - SECRETARIA DE ESTADO DE INVESTIGACION, DESARROLLO E INNOVACION

Main researcher: Raquel Ibáñez Mendizábal

Date: 14/10/2013 – 13/10/2016

Title: **Gestión sostenible de la anchoa del cantábrico: estrategias locales para un desarrollo global (CTM2013-43539-R)**

Financial support: MINISTERIO DE ECONOMIA Y COMPETITIVIDAD

Main Researcher: Rubén Alcardo García

Dates: 01/01/2014 – 31/12/2016

Title: **Desarrollo y aplicación de herramientas para la gestión ambiental de procesos y productos bajo una perspectiva de ciclo de vida**

Financial support: UNIVERSIDAD DE CANTABRIA

Main Researcher: Rubén Alcardo García

Dates: 24/11/2014 – 23/11/2016

Title: **Estudio de alternativas de mejora en el diseño de quemadores para encimeras de gas**

Financial support: BSH ELECTRODOMESTICOS ESPAÑA, S.A.

Main Researcher: Eugenio Bringas Elizalde

Dates: 24/11/2014 – 23/11/2015

Title: **Synthesis, characterization and technological viability of new membranes for gas separation (RYC2011-08550)**

Financial support: MINECO – Ramón y Cajal Programme, Universidad de Cantabria

Main Researcher: Dr. Clara Casado Coterillo

Dates: 02/01/2012 – 01/01/2014

Title: Production of electricity from fossil fuels with virtually zero air pollution

Financial support: ELIOT S. GERBER

Main Researcher: Clara Casado Coterillo

Dates: 12/02/2014 – 11/05/2015

Title: Nuevas membranas selectivas para la separación de CO2 (CTQ2012-31229)

Financial support: Universidad de Cantabria

Main Researcher: Dr. Clara Casado Coterillo

Dates: 01/01/2013 – 31/12/2015

Title: Herramientas para la evaluación de la concentración y depósito de metales pesados y compuestos inorgánicos persistentes (COPs) en aire ambiente a escala local/regional

Financial support: Ministerio de Economía y Competitividad

Main Researcher: Dr. Ignacio Fernández Olmo

Dates: 01/01/2011 – 31/12/2014

Title: Manganeso en aire urbano: niveles de concentración y depósito, caracterización físico-química y modelización mediante modelos de dispersión (CTM2013-43904-R)

Financial support: Ministerio de Economía y Competitividad

Main Researcher: Ignacio Fernández Olmo

Dates: 01/01/2014 – 31/12/2016

Title: Ultrapurificación de productos químicos basada en la tecnología de membranas para alcanzar la calidad de grado electrónico.

Financial support: Ministerio de Economía y Competitividad (CTQ2010-16608)

Main Researcher: Dra. Aurora Garea Vázquez

Dates: 01/01/2011 – 31/12/2014

Title: **IX Ibero-american conference on membrane science and technology, CITEM 2014**

Financial support: VICERRECTORADO DE INVESTIGACION

Main Researcher: Eugenio Daniel Gorri Cirella

Dates: 18/02/2014 – 31/08/2014

Title: **Mejoras en el tratamiento de lixiviados de vertedero mediante tecnologías de oxidación avanzada (cofinanciado con fondos FEDER) CTM2012-33917**

Financial support: Ministerio de Economía y Competitividad

Main Researcher: Dr. María José Rivero Martínez

Dates: 01/01/2013 – 31/12/2015

Title: **Evolución de la concentración de PCDD/FS en los tratamientos de oxidación avanzada de lixiviados de vertedero.**

Financial support: Ministerio de Ciencia e Innovación (CTQ2011-25262)

Main researcher: Dra. M^a Fresnedo San Román San Emeterio

Date: 01/01/2012 – 31/12/2014

The results of our research activity are published in international journals after their peer review evaluation by specialized referees who support the quality of our research.

Journal

AICHe Journal

BioMed Research International

Catalysis B: Environmental

Chemical Engineering Journal

Chemical Engineering Research and Design

Chemical Engineering Transactions

Chemosphere

Clean Technologies and Environmental Policy

Current Topics in Medicinal Chemistry

Desalination and Water Treatment

Environmental Monitoring and Assessment

Fluid Phase Equilibria

Human and Ecological Risk Assessment: An International Journal



R&D - Publications

The results of our research activity are published in international journals after their peer review evaluation by specialized referees who support the quality of our research.

Journal

Industrial & Engineering Chemistry Research

International Journal of Hydrogen Energy

Journal of Chemical Engineering Research Studies

Journal of Chemical Technology and Biotechnology

Journal of Hazardous Materials

Journal of Membrane Science

Macromolecules

Membranes

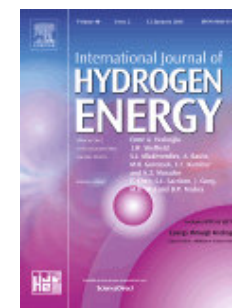
Resources, Conservation and Recycling

RSC Advances

Separation and Purification Technology

Separation Science & Technology

Waste Management & Research



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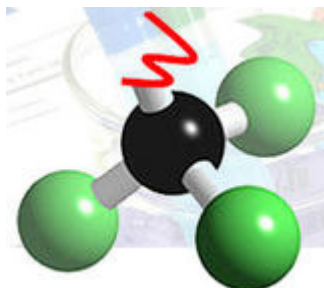
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Title: : **METODO ESPECTROSCOPICO PARA LA DETERMINACION DE PROTEINAS EN MEDIOS COMPLEJOS.**

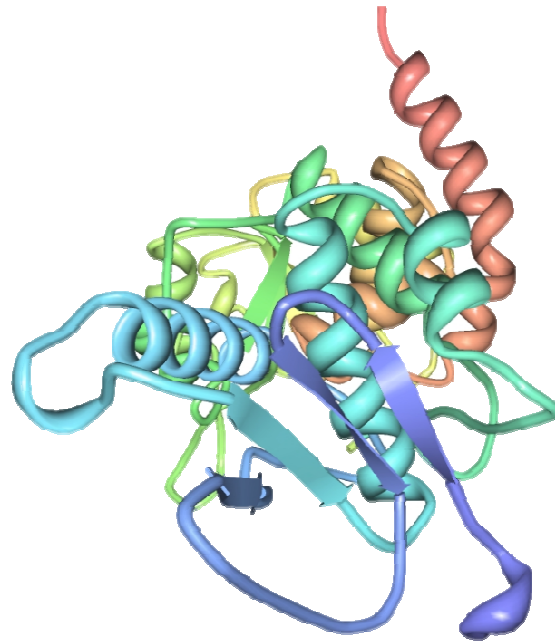
Inventors: V. Valiño, R. Valiente, M.F. San Román, R. Ibañez, I. Ortiz

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Entity: Universidad de Cantabria



R&D – Congress and Conference Contributions

The main progress achieved during our research activity is internationally disseminated through scientific congresses.



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ANALYTICAL SERVICES



Analytical Services

Some of the **Analytical Services** provided by SOSPROCAN team are summarized next:

Metal content in solid and/or liquid samples

Determination by AA and optical ICP of mg/L metallic concentrations and ICP-MS for $\mu\text{g/L}$ concentrations.

Determination of Total Petroleum Hydrocarbons (TPHs) in soil

Determination by gas chromatography-FID

Analysis of organic priority pollutants and emerging pollutants

Determination of organic compounds by liquid and gas chromatography (micropollutants, PAHs, VOCs, ...)

Determination of environmental parameters

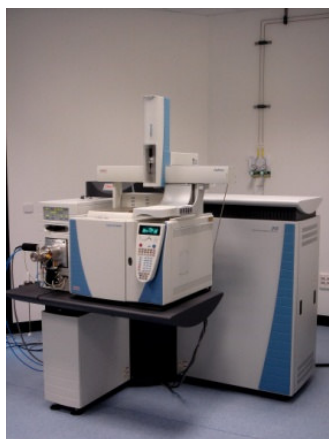
Determination of DOC, COD, BOD, Ecotoxicity, etc. in water.

Analysis of dissolved anions

Ion chromatography (F^- , Cl^- , NO_3^- ; SO_4^{2-} , Na^+ , Ca^{2+} ...)

MORE INFO:

http://www.unican.es/Departamentos/ingquimica/informacion_general/servicios+analiticos.htm



12th September 2014

After a life dedicated to Chemical Engineering, our colleague Roberto Arce got retired. In appreciation for his whole career, the department of Chemical and Biomolecular Engineering organized an emotional tribute, where he was accompanied by his family, colleagues and friends.

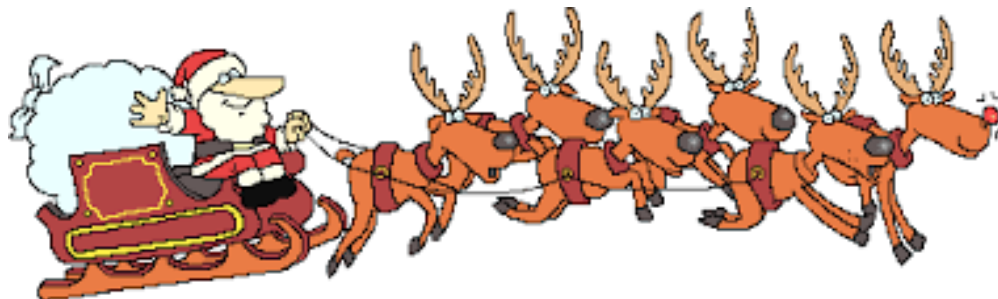


Christmas Party

19th December 2014

Annual lunch of the Department of Chemical and Biomolecular Engineering with the assistance of 62 people that are part of the faculty, research, administration and services staff.

After lunch the organizing committee prepared a thematic party about Christmas, where all the audience exhibited their costumes and complements. Finally everybody danced and celebrated the success of the ending year.





**Department of Chemical and
Biomolecular Engineering
(SPAIN)**



**Sustainable Production in Cantabria
Department of Chemical and Biomolecular Engineering**

**ETSIIyT, Universidad de Cantabria
Av. Los Castros s/n 39005 - Santander - Cantabria
Spain**

Tel.: +34 942 201585 / FAX: +34 942 201591





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<http://grupos.unican.es/pasep/>

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