RESEARCH TOPICS
The research is aimed to the development and integration of new separation
technologies based on selective liquid membranes, pervaporation, ultrafiltration,
reverse osmosis, membrane distillation and gas separation membranes. Applications
in the fields of metals recovery, separation of organic compounds, treatment and
purification of industrial effluents and landfill leachates, solvents dehydration, water
reuse and hydrogen recovery from gas mixtures have been developed. An important
part of the research is dedicated to the development of mathematical models that
describe the new processes, as well as the study of the factors influencing the scale-up.
The integration of advanced oxidation processes, electrooxidation, Fenton,
electrodisinfection, complement the separation capacity of membranes with the final
elimination of compounds that cannot be recovered, generating zero-discharge
processes.

PUBLICATIONS (5 years)

- Anglada, A., Ibáñez, R., Urtiaga, A., Ortiz, I. Electrochemical oxidation of saline
- G. Pérez, P. Gómez, R. Ibáñez, I. Ortiz, A.M. Urtiaga, Electrochemical
disinfection of secondary wastewater treatment  plant (WWTP) effluent, Wat. Sci.
- G. Pérez, A. Fernández de Alba, A.M. Urtiaga, I. Ortiz, Electrooxidation of
  reverse osmosis concentrates generated in tertiary water treatment, Water
- Urtiaga, A., Bringas, E., Mediavilla, R., Ortiz, I., J. The role of liquid membranes
  in the selective separation and recovery of zinc for the regeneration of Cr
- Dibán, A.M. Urtiaga, M.I. Ortiz, Zinc recovery and waste sludge minimization
  from chromium passivation baths, Journal of Hazardous Materials, 192 (2):801-7,
  2011.
- C. David, D. Gorri, I. Ortiz, A.M. Urtiaga, Dual-sorption model for H2/CO2 for
  permeation in glassy polymeric Matrimid Membrane, Desal. Wat. Treat. 27,
  31-36, 2011.
- O. Voinea, D. Gorri, I. Ortiz, A.M. Urtiaga, Mixed gas separation study for the
  hydrogen recovery from H2/CO/N2/CO2 post combustion mixtures using a
- Anglada, A. Urtiaga, I. Ortiz, D. Mantzavinos, E. Diamadopoulos, Treatment of
municipal landfill leachate by catalytic wet air oxidation: Assessment of the role of operating parameters by factorial design, Waste Management 31, 1833–1840, 2011.


- Gutiérrez, R., Urtiaga, A., Ortiz, I., Separation of phenol and formaldehyde from industrial wastes. Modelling of the phenol extraction equilibrium, JCTB, 85(9), 1215-1222, 2010.


- Diban, N., Urtiaga, A.M., Ortiz, I., Bilbao, J., Aguayo, A. Influence of the membrane properties on the catalytic production of dimethyl ether with in situ


• Zarca, G., Urtiaga, A., Ortiz, I., Cañizares, P., Rodrigo, M. Electrochemical determination of copper mass transport properties in basic 1-hexyl-3-methylimidazolium chlorocuprate(I) ionic liquid. Separation and Purification Technology 141, 31-37, 2015.


• Zarca, G., Ortiz, I., Urtiaga, A.M. Behaviour of 1-hexyl-3-methylimidazolium chloride supported ionic liquid membranes in the permeation of CO2, H2, CO and N2 single and mixed gases. Desalination and Water Treatment 56, 3640-3646, 2015.


R&D PROJECTS

Title: Towards and Innovative Galvanic Industry (TIGI, 218390-2)
VII EU Framework programme
Duration, since 2008 to 2011
Main researcher: Ane Urtiaga

Title: Use of boron-doped diamond electrodes for treatment of perfluorinated compounds (AFCEEBA-11-002-69).
Air Force Center for Engineering and the Environment (EE.UU.).
Duration, since 2011 to 2013
Main researcher: Ane Urtiaga
Coordinator Shaw Environmental, Inc.
Participants: Colorado School of Mines; Universidad de Cantabria

Title: Use of Boron-Doped Diamond Electrodes for Water Treatment (NESDI #487),
Navy's Environmental Sustainability Development to Integration program, U.S. Navy (EE.UU.)
Duration, since 2013 to 2014
Main researcher: Ane Urtiaga
Coordinador: Shaw Environmental, Inc.
Participantes: Duke University; Universidad de Cantabria

Title: Investigating Electrocatalytic and Catalytic Approaches for in situ Treatment of Perfluoroalkyl Contaminants in Groundwater (14 ER02-030 / ER-2424).
Coordinator: CB&I Federal Services.
Participants: University of Illinois at Urbana-Campaign, Duke University; Universidad de Cantabria
Duration, since 2014 to 2016
Main researcher: Ane Urtiaga

Title: Desarrollo de Tecnologías Innovadoras para el tratamiento de contaminantes perfluorados en aguas (CTM2013-44081-R).
Ministerio de Economía y Competitividad
Coordinator: Universidad de Cantabria.
Participants: Universidad del País Vasco; Centro Tecnológico de Componentes
Duration, since 2014 to 2017
Main researcher: Ane Urtiaga

Title: Desarrollo y caracterización de filmes multicapas extruidos en base polimérica aplicando tratamiento de entrecruzamiento mediante radiación ionizante
Programa de ayudas para el desarrollo de doctorados industriales 2014, de la Universidad de Cantabria
Company: Grupo Armando Alvarez,
PhD. Student: J.A. Alvarez Ballesteros.
Duration, since 2015 to 2017
Main researcher: Ane Urtiaga

Title: Nuevos nanomateriales funcionalizados basados en grafeno como soportes para la regeneración de tejido nervioso.
Convocatoria Cantabria Explora del Parlamento de Cantabria y de la Universidad de Cantabria.
Duration, since 2015 to 2017
Main researcher: Ane Urtiaga

PATENTS


OTHER RESULTS

- Supervision of 11 PhD. Thesis
• H index = 17
• Vice-Dean of the School of Engineering (ETSII), University of Cantabria, 1999-2007.
• Coordinator of academic exchanges (Erasmus, Séneca, bilateral agreements) 1999-2008.
• Expertise in academic and scientific evaluation, participation in national and International committees: ANECA, ANEP, framework programme EU, Regional governments, FECYT, etc.
• Member of the European Membrane Society and European Membrane House.