

CURRICULUM VITAE (updated June-08)

Personal Data Last name: Pina Iritia Name: María Pilar Date of birth: 26/12/1977 Sex: Female
Actual Position Associate Professor with tenure. Faculty: Facultad de Ciencias. Departamento de Ingeniería Química y Tecnologías del Medio Ambiente. Universidad de Zaragoza. Member of the Institute of Nanoscience of Aragon, INA.
Academic Qualifications Bachelor in Chemistry University of Zaragoza. July 1994 Ph D. in Chemistry. University of Zaragoza. July 1998
Previous Academic Positions December 98-October 07 Assistant professor Universidad de Zaragoza. November 01- May 02 Research associate University of Zaragoza (EU project) August 02- October 03 Research associate University of Zaragoza (EU project)
Current Research interests: <ul style="list-style-type: none">- Synthesis and characterization of zeolite layers over different supports: silicon wafers, interdigital capacitors, Si-based resonators, track-etched membranes, polymeric structures, stainless steel grids, carbon electrodes, tubular ceramics...- Application of zeolitic films and particles for gas sensing. Development of chemocapacitors and mass sensors based on zeolites.- Micropatterning of zeolite layers for advanced applications: microreactors, micromembranes, MEMS and NEMS.- Development of MEAs for HT PEMFCs based on zeolites and ionic liquids.- Catalytic membrane reactors for VOCs removal from gas and aqueous waste streams.
Participation in research projects (last 5 years) "Synthesis of zeolite layers over porous substrates and development of applications in different fields" Spain, Ministry of Education DGI Participants: Universidad de Zaragoza From: January 04 To: January 2007 "Evaluation of microporous zeolite materials for its use in chemical gas sensors: characterization and preliminary design" Spain, Department of Science, Technology and University, Aragón, DGA. Participants: Universidad de Zaragoza, Universidad Politécnica de Cataluña. From: October 04 To: October 2006 "Zeolite synthesis over microreactors" Spanish Ministry of Education. Integrated Action Plan Participants: Universidad de Zaragoza - Institut für Mikrotechnik Mainz (Germany) From: January 05 To: December 2006 "Microcantilevers modified with nanostructured materials for early detection of explosives" Spain, CTP, Aragón. Participants: Universidad de Zaragoza, Bourdeaux Universite, Sallén Electrónica, S.L. From: October 05 To: October 2007

Participation in research projects (last 5 years)

"Development of microsystems with zeolite films: mass sensors and microreactors"

Spain, Ministry of Education DGI DGI, Ref: CTQ2006 7159/PPQ

Participants: Universidad de Zaragoza

From: December 06 To: December 2009

"Preparation and Characterization of Nanoporous Microcantilevers for early detection of explosives"

Spain, Department of Science, Technology and University, Aragón, DGA.

Participants: Universidad de Zaragoza, Universidad Autónoma de Barcelona.

From: October 07 To: October 2009

"Encapsulation of ionic liquids in zeolite matrix for MEAS development in HT PEMFCs.

Spain, University of Zaragoza.

Participants: Universidad de Zaragoza.

From: January 2007. To: December 2007

"Development of efficient components for direct methanol PEMFCs"

Spain, Department of Science, Technology and University, Aragón, DGA.

Participants: Universidad de Zaragoza, LITEC, Instituto de Carboquímica.

From: October 07 To: October 2009

"Synthesis and Application of Mn, Fe, Cu catalysts supported on pillared clays for VOCs removal"

AECI. Spain.

Participants: Universidad de Zaragoza, Universidad Nacional de Ingeniería (Lima), Universidad Católica del Perú.

From: January 07 To: December 2008

"Synthesis and Application of Al and Ti pillared clays for VOCs removal"

CONCYTEC. Perú.

Participants: Universidad de Zaragoza, Universidad Nacional de Ingeniería (Lima), Universidad Católica del Perú.

From: January 08 To: December 2008

"Nanostructured electrolyte membranes based on polymer/ ionic liquids / zeolite composites for HT PEMFCs"

UE.

Participants: Universidad de Zaragoza, CIDETEC, FORTH-ICE/HT, CR FIAT, SOLVIONIC, CEGASA, University of Twente.

From: January 08 To: December 2010

Research papers (last 5 years)

1. "Total combustion of methyl-ethyl ketone over Fe₂O₃ based catalytic membrane reactors". Applied Catalysis B Environmental, **46**, 133-143, (2003)
2. "Kinetic study of the combustion of methyl-ethyl ketone over α -hematite catalyst". Chemical Engineering Journal, **102**, 107-117, (2004).
3. "A semi-continuous method for the synthesis of NaA zeolite membranes on tubular supports". Journal of Membrane Science, **244**, 141-150, (2004).
4. "Development of pd zeolite composite membranes for hydrogen production by membrane reactor". In "The CO₂ capture and storage project (CCP) for carbon dioxide storage in deep geological formations for climate change mitigation". Volume 1 – Capture and separation of carbon dioxide from combustion sources. Section 2: Pre-combustion de-carbonization technology. Elsevier Ltd. Vol. 1 (2), 341- 364, (2005).
5. "Evaluation of optical and dielectrical properties of the zeolites". Desalination, **200** (1-3), 601-603, (2006).
6. "Preparation and Characterization of Ce-Zr, Ce-Mn based oxides for n-hexane combustion: application to catalytic membrane reactors". Chemical Engineering Journal, **126**, 119-130, (2007).
7. "An optochemical humidity sensor based on immobilized nile red in Y zeolite". Industrial and Engineering Chemistry Research, **46** (8), 2335-2341, (2007).
8. "Developments in zeolite membrane applications". Handbook of membrane separations: chemical, pharmaceutical and biotechnological applications. Marcel Dekker, Inc. Editors: Anil K. Pabby, Ana María

Sastre, and Syed S. H. Rizvi. In press. 2007. Review.

9. "Development of microstructured zeolite films as highly accessible catalytic coatings for microreactors". *Journal of Catalysis*, 250 (1), 190-194, (2007).
10. "Conductivity in zeolite-polymer composite membranes for PEMFCs". *Journal of Power Sources*, 169 (1), 92-97, (2007).
11. "Zeolites and zeotype materials as efficient barriers for methanol cross-over in DMFCs". *Microporous and Mesoporous Materials*, In Press, (2008).
12. "Development of etching processes for the micropatterning of silicalite films" *Microporous and Mesoporous Materials*, 104, 110-120 (2008).
13. "Gas Sensing with Silicon based Nanoporous Solids" IN "Ordered Porous Solids: recent advances and prospects". Elsevier Ed. Editors: W. Valtchev, S. Mintova and M. Tsapatsis. In press. 2008. Review.

Conference Contributions (last 5 years)

During last five years more than 35 communications has been presented in national and international conferences.

Ph D supervisor

Title: "Catalytic Membrane Reactors based on Mixed Oxides for VOCs combustion. Kinetic Study and Simulation".

Student: Gino Italo Picasso Escobar. Ph D defense: 01/14/05 Grade: Sobresaliente "cum laude"

Universidad de Zaragoza (Facultad de Ciencias)

Title: "Catalytic Wet Air Oxidation of Phenol using Catalytic Membrane Reactors".

Student: Mirella Gutiérrez Arsaluz. Ph D defense: 07/27/07 Grade: Sobresaliente "cum laude"

Universidad de Zaragoza (Facultad de Ciencias)

Title: "Microsystems based on zeolites: sensors and other applications".

Student: Miguel Angel Urbiztondo Castro Ph D defense: 06/18/08 Grade: Sobresaliente "cum laude"

Universidad de Zaragoza (Facultad de Ciencias)