CV date	2023/01/15

Part A. PERSONAL INFORMATION

First name	Enrique		
Family name	Sastre de Andrés		
Gender (*)	Male	Birth date (dd/mm/yyyy)	15/01/1962
Social Security, Passport, ID number	03430924Z		
e-mail	esastre@icp.csic.es	URL Web	https://icp.csic.es
Open Researcher and Contributor ID (ORCID) (*)	0000-0003-4921-1549		

(*) Mandatory

A.1. Current position

Position	Director Institute A		
Initial date	09/03/2018		
Institution	Consejo Superior de Investigaciones Científicas (CSIC)		
Department/Center	Instituto de Catálisis y Petroleoquímica (ICP)		
Country	Spain	Teleph. number	(34) 915 854 795
Key words	Porous Materials; Heterogeneous Catalysis; MTH		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
2007-	Scientific Researcher. OPIs/CSIC/Spain/
1992-1993	Associate Researcher. Texas A&M/USA/
1991-2007	Tenured Scientist. OPIs/CSIC/Spain/
1990-1991	Postdoctoral Researcher. CSIC/Spain/
1986-1989	Predoctoral Researcher (FPI)/CSIC/Spain/

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Degree in Chemistry	Universidad Autónoma de Madrid/Spain	1984
PhD Chemistry	Universidad Complutense de Madrid/Spain	1989

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

I obtained my Degree in Chemistry from the UAM -Madrid- in 1984, receiving the "*San Alberto Magno*" Award from the National Association of Chemists of Spain to the recent graduate of the UAM. Between 1986 and 1989, with an FPI Predoctoral Fellowship, I did my PhD Thesis at the Institute of Catalysis and Petrochemistry (ICP) of the CSIC, under the supervision of Prof. A. Corma, receiving Title of Doctor of Science from the UCM -Madrid- in December 1989. During this period, I made two short stays in two centres of recognized national and international prestige: UPV Valencia and ENSC Montpellier. After enjoying a postdoctoral fellowship from the CSIC, in March 1991 I obtained a position as Tenured Researcher at the CSIC with destination at the ICP. One year later, 1992, I moved to the USA (Texas A&M University), where I made a stay as an Associate Researcher, under the direction of Prof. J.H. Lunsford in the period 1992-1993. After returning to the ICP, in 1993, together with Prof. Joaquín Pérez Pariente we created the *Molecular Sieves Group* of the ICP. During the past 30 years our Group has become a national and international reference in the field of microporous and mesoporous materials and their use in catalytic applications. At this moment our Group at ICP is formed by 7 staff researchers and close to 40 Doctors -Spanish and foreigners- have been formed in our laboratories. In May 2007 I obtained the position of Scientific Researcher of the CSIC.

The research lines I have developed in the Molecular Sieves Group have been focused on the study of micro and mesoporous materials both from the point of view of their preparation, post-synthesis modification and characterization, as well as their applications, especially in the field of catalysis. Among the most relevant achievements it can be mentioned those related with functionalized mesoporous materials and their use in esterification reactions and, more

recently, the research line related to the process of transformation of methanol into hydrocarbons. Related with this latter topic, MTH, I have been supervisor of 3 PhD Thesis and co-author of more than 25 JCR papers and close to 35 contributions to national or international congresses and it has allowed us to collaborate with different Groups from Spain (Bilbao, Zaragoza, Valencia, Madrid) or abroad (Norway, Italy, Mexico, France).
Our research work has been always in close contact with different national and international companies (Petrobras -Brazil-, IMP -México-, UBE Chemicals, Betaquímica, DMG S.A. or CEPSA). In this latter case, I have collaborated in the development of improved catalysts for a cleaner production of biodegradable detergents, in the framework of a four years and more than 360 k€ contract which finally result in a patent and three contributions to congresses.
I have participated in different management activities at national level, in the CSIC: Member of the CTQ Area Commission of the CSIC, Head of Department, Deputy Director of the ICP; in national Organization: Secretary of the Spanish Catalysis Society and the Spanish Group of Zeolites or International Organizations: Vice-President of the Iberoamerican Federation of Catalysis Societies. I have also participated in the Organizing Committees of the most important International Congresses celebrated in Spain related with Catalysis and Zeolites: the ICC (International, Granada 2000), the SICat (Iberoamerican, Málaga 2008), the EuropaCat (Salamanca 2009), the FEZA Conference (European, Valencia 2011) and the IZC (International, Valencia 2022)
Since March 2018, I am Director of the Institute of Catalysis and Petrochemistry of the CSIC. Under my direction, during these five years, the ICP, in addition to its excellent scientific work, has dedicated a very special effort to other activities related to gender equality - an Equality Commission has been created in the Institute - or with dissemination – with a notable increase in the number of activities-.
As a resume of my activity, I am co-author of 7 patents and more than 125 scientific or technical publications with peer review, more than 75 of them collected in ISI databases, adding up a total of more than 3000 citations. The work developed in these years has also been reflected in more than 170 communications presented at national and international congresses, in addition to several invited conferences. I have directed 5 Doctoral Theses and more than half a dozen Final Degree/Master Projects. I have recognized 6 "*quinquenios*", 5 scientific "*sexenios*" and one transference "*sexenio*".
I have participated in the preparation, writing, execution and monitoring of a total of 45 research projects funded in public calls, being the Principal Investigator of 13 of them in recent years. Among them are bilateral cooperation projects with different international organizations in the United Kingdom, Argentina, Czech Republic, Italy, France, Mexico or Ethiopia. I have participated in about thirty contracts with private, Spanish and foreign companies, being the Responsible Researcher of half of them.

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

Related with the Project

1. M. García; D.A. Solís; J. Aguilar; C. Márquez; **E. Sastre**. (5/5). 2022. "*Transformation of Methanol to Hydrocarbons (MTH): Comparison Between MeAPO-36 (Me=Zn, Co, Mg) and Modified ZSM-5 Catalysts*". Catalysis Letters (on line). https://doi.org/10.1007/s10562-022-04181-2
2. J. Valecillos; I. Hita; **E. Sastre**; A.T. Aguayo; P. Castaño. (3/5).2021. "*Implications of Co-Feeding Water on the Growth Mechanisms of Retained Species on a SAPO-18 Catalyst during the Methanol-to-Olefins Reaction*". ChemCatChem 13, 3140-3154. Cites: 7 https://doi.org/10.1002/cctc.202100124
3. J. Valecillos; Z. Tabernilla; E. Epelde; **E. Sastre**; A.T. Aguayo; P. Castaño. (4/6).2020 "*Quenching the Deactivation in the Methanol-to-Olefin Reaction by Using Tandem Fixed-Beds of ZSM-5 and SAPO-18 Catalysts*". Industrial & Engineering Chemistry Research. 59(31), 13892-13905. Cites: 8 https://doi.org/10.1021/acs.iecr.0c01616

4. M. García; D.A. Solís; J. Aguilar; C. Márquez; **E. Sastre**; D. Sanjurjo; M. Sánchez-Sánchez; M. Grande. (5/8). 2020 "*Synthesis and Characterization of Aluminophosphates Type-5 and 36 Doubly Modified with Si and Zn and Its Catalytic Application in the Reaction of Methanol to Hydrocarbons (MTH)*". Topics in Catalysis 63(5-6), 437-450. Cites: 5 https://doi.org/10.1007/s11244-020-01266-3
5. M. García; D.A. Solís; J. Aguilar; C. Márquez; **E. Sastre**; D. Sanjurjo; R. Sainz; M. Grande. (5/8). 2020 "*Synthesis of 10 and 12 Ring Zeolites (MCM-22, TNU-9 and MCM-68) Modified with Zn and Its Potential Application in the Reaction of Methanol to Light Aromatics and Olefins*". Topics in Catalysis 63(5-6), 451-467. Cites: 2 https://doi.org/10.1007/s11244-020-01242-x
6. I. Pinilla; C. Márquez; **E. Sastre**. (AC) (3/3). 2017. "*Complex relationship between SAPO framework topology, content and distribution of Si and catalytic behaviour in the MTO reaction*". Catalysis Science & Technology 7, 3892-3901. Cites: 12 http://dx.doi.org/10.1039/C7CY01250K
7. I. Pinilla; U. Olsbye; C. Márquez; **E. Sastre**. (AC) (4/4).2017 "*Effect of framework topology of SAPO catalysts on selectivity and deactivation profile in the MTO reaction*". Journal of Catalysis 352, 191-207. Cites: 54 https://doi.org/10.1016/j.jcat.2017.05.008
8. T. Álvaro-Muñoz; **E. Sastre**; C. Márquez. (2/3). 2014. "*Microwave-assisted synthesis of plate-like SAPO-34 nanocrystals with increased catalyst lifetime in the methanol-to-olefin reaction*" Catalysis Science and Technology 4(12), 4330–4339. Cites: 52 http://dx.doi.org/10.1039/c4cy00775a
9. T. Álvaro-Muñoz; C. Márquez; **E. Sastre**. (3/3). 2014. "*Aluminium chloride: A new aluminium source to prepare SAPO-34 catalysts with enhanced stability in the MTO process*". Applied Catalysis A: General 472, 72-79. Cites: 54 http://dx.doi.org/10.1016/j.apcata.2013.12.016
10. T. Álvaro-Muñoz; C. Márquez; **E. Sastre**. (AC) (3/3). 2014. "*Use of different templates on SAPO-34 synthesis: Effect on the acidity and catalytic activity in the MTO reaction*". Catalysis Today 179(1), 27–34. Cites: 144 http://dx.doi.org/10.1016/j.cattod.2011.07.038

C.2. Congress,

1. Plenary speaker at "IV Congreso Internacional y XII Congreso Mexicano de Catálisis". Lecture: "Catalizadores tipo silicoaluminofosfatos microporosos cristalinos para el proceso MTO". Academia Mexicana de Catálisis. Puerto Vallarta, México. April, 16, 2013
2. Plenary speaker at "Simposium Iberoamericano: Química aplicada en nanotecnología y Calidad ambiental". Lecture: "Control de la porosidad en catalizadores sólidos ácidos: del micro al mesoporo". Universidad Autónoma Metropolitana, México City. April, 14, 2010
3. Plenary speaker at "IV Congreso Andaluz de Ingeniería Química". Lecture: "Tamices Moleculares: Catálisis en Espacios Confinados". Málaga, July, 07, 2006
4. Plenary speaker at "Congreso de la Sociedad Española de Catálisis 2003" Lecture: "Esterificación de ácidos grasos con glicerina empleando catalizadores sólidos ácidos". Torremolinos, June, 25, 2003

C.3. Research projects

1. **Project.** COOPB2022. "Microporous materials as platform for enviromental remediation" CSIC. PI: Manuel Sánchez-Sánchez. (ICP-CSIC / Universities of Addis Ababa and Haramaya, Ethiopia) 01/01/2023-31/12/2024. *Team member in charge of the catalytic experiments*.
2. **Project.** TED2021-131143B-I00. "Energy-saving alternative catalytic route for CO2 recycling to methanol assisted by amines". Agencia Estatal de Investigación. PI: Joaquín Pérez-Pariente. (ICP-CSIC). 01/12/2022-30/11/2024. 115.000 €. *Team member responsible of the objective related with methanol reactions*.
3. **Project.** PID2019-107968RB-I00. "New strategies in the synthesis of improved zeolitic catalysts for sustainable processes". Agencia Estatal de Investigación. PI: Luis Gómez-

Hortigüela Sáinz. (ICP-CSIC). 01/06/2020-31/05/2023. 145.000 €. *Team member leader of the objective related with Methanol-to-Aromatics reactions*.

4. **Project.** P2018/NMT-4367. "New generation of multifunctional materials for artificial photosynthesis (FOTOART)". Comunidad de Madrid. PI Project: Victor de la Peña-O'Shea. IP Sub-Project ICP: **Enrique Sastre**. Coordinated (1.083.374/40.000 €). 01/01/2019-31/12/2022
5. **Project.** "Catálisis Ambiental" Agencia Estatal Mexicana Promep. PI: Violeta Múgica (Universidad Autónoma Metropolitana de México). 01/01/2016-31/12/2016. *Team member leader of the Spanish activities*.
6. **Project.** MAT2016-77496-R "Development of Advanced Nanoporous Catalytic Materials". Agencia Estatal de Investigación. **PI: Enrique Sastre**. (ICP-CSIC). 30/12/2016-31/12/2020. 242.000 €.
7. **Project.** I-COOP+-2014. "Metal Organic Frameworks (MOFs) and Heterojunction Nanocomposites: Synthesis, Characterization and Photocatalytic Applications" CSIC. PI: Isabel Díaz Carretero. (ICP-CSIC / University of Haramaya, Ethiopia) 01/01/2015-31/12/2016. *Team member in charge of the catalytic experiments*.
8. **Project.** MAT2012-31127 "Strategies for the rational design of highly selective active centers in nanoporous catalytic materials". Comisión Interministerial de Ciencia y Tecnología. **PI: Enrique Sastre**. (ICP-CSIC). 01/01/2013-30/04/2016. 280.800 €.
9. **Project.** MAT2009-13569 "Diseño de materiales nanoporosos avanzados para catálisis heterogénea". Comisión Interministerial de Ciencia y Tecnología**.** PI: Joaquín Pérez Pariente (ICP-CSIC). 01/11/2009-31/10/2012. 341.220 €. *Team member in charge of the catalytic objectives*.
10. **Project.** 200480E553 "Desarrollo de metodologías normalizadas de técnicas de caracterización de materiales". CSIC. **PI: Enrique Sastre**. (ICP-CSIC). 01/01/2009-31/12/2011. 102.000 €.

C.4. Contracts, technological or transfer merits,

1. **Contrat PoC.** "Propylene production from BIO fatty acids". Company: REPSOL S.A. IP: Joaquín Pérez Pariente. 16/12/2021-16/06/2022. 75.020 €. Research Team.
2. **Invention Patent.** 20382138.4-1109. Germany. 27/02/2020. María José Franco Garrido; Jesús Javier Lázaro; **Enrique Sastre de Andrés**; Carlos Márquez Álvarez. "Process for producing monoalkylated aromatic compounds" Compañía Española de Petróleos, S.A.
3. **Contrat.** "UpDetal: New Benzene Alkylation Catalysts". Company: CEPSA QUIMICA S.A. **IP: Enrique Sastre**. 28/09/2016-28/09/2018. 164.366 €.
4. **Contrat.** "New catalysts for benzene alkylation to produce more energy-efficient BIOLAS". Company: Compañía Española de Petróleos, S.A. **IP: Enrique Sastre.** 28/03/2014-28/03/2016. 157.300 €.
5. **Contrat.** "Development of cracking catalyst additives to increase isobutene yield in the FCC process". Company: REPSOL PETROLEO, S.A. IP: Joaquín Pérez Pariente. 01/01/2013-01/04/2015. 182.049 €. Research Team.
6. **Contrat.** "Proceso catalítico para la mejora del transporte de crudo pesado". Company: REPSOL-YPF. PI: Carlos Márquez-Álvarez. 03/05/2011-15/12/2011. 65.520 €. Research Team.
7. **Contrat.** "Evaluación de aditivos para incremento de la conversión en procesos de coquer y visbreaking (I and II)". Company: REPSOL-YPF. PI: Joaquín Pérez Pariente. 02/02/2009-30/10/2009 and 20/01/2010-30-06-2010. 35.556 €. Research Team.
8. **Contrat.** "Testing of additives to increase yield in thermal conversion operations within petroleum refining plants (I and II)". Company: Baker Hughes Operations España S.A. PI: Carlos Márquez-Álvarez. 01/12/2008-30/09/2009 and 20/01/2010-30-06-2010. 35.556 €. Research Team.
9. **Contrat.** "Desarrollo de Procesos de Síntesis para Obtención de Cetonas Terpénicas". Company: DESTILERIAS MUÑOZ GALVEZ, S.A. **PI: Enrique Sastre.** 25/09/2008-31/12/2010. 190.890 €.
10. **Contrat.** "Revalorización de glicerina (III)". Company: Cailà y Parés S.A. **PI: Enrique Sastre.** 01/12/2007-30/11/2008. 49.126 €.