

**Part A. PERSONAL INFORMATION**

CV date

15/02/2023

First and Family name	ÁNGELA SASTRE SANTOS		
Social Security, Passport, ID number		Age	
Researcher codes	Open Researcher and Contributor ID (ORCID**)	0000-0002-8835-2486	
	SCOPUS Author ID (*)	10640209800	
	WoS Researcher ID (*)	I-4958-2014	

(\*) Optional (\*\*) Mandatory

**A.1. Current position**

Name of University/Institution	UNIVERSIDAD MIGUEL HERNANDEZ DE ELCHE		
Department	INSTITUTO DE BIOINGENIERÍA		
Address and Country	Avda. Universidad s/n, Elche (Alicante)		
Phone number	E-mail	<a href="mailto:asastre@umh.es">asastre@umh.es</a>	
Current position	CATEDRATICO DE UNIVERSIDAD	From	13/10/2010
Key words	Molecular materials, phthalocyanines, diketopyrrolopyrroles, perylenediimides, carbon nanostructures, organic photovoltaics, nanotechnology, biotechnology.		

**A.2. Education**

PhD, Licensed, Graduate	University	Year
Licensed in Chemical Sciences (Organic Chemistry Speciality)	Autónoma de Madrid	1990
PhD in Chemical Sciences	Autónoma de Madrid	1995

**A.3. General indicators of quality of scientific production**

- Research six-year periods: 5 (last recognized 2019). Sexennial of Transference: 1.
- Supervised doctoral theses: 9 (5 Extraordinary Doctorate Award).
- Total citations: 3868 (3336 excluding own citations)
- h-index: 36
- Total publications: 165. Total publications in the first quartile (Q1): 105;

**Part B. CV SUMMARY**

Ángela Sastre Santos (1967) is Professor of Organic Chemistry at the University of Miguel Hernández de Elche (UMH, 2010) and director of the Bioengineering Institute of the UMH (October 2018-). PhD in Chemical Sciences from the UAM (1995, Extraordinary Doctorate Award, Prof. Tomás Torres). She has made several postdoctoral stays, 6 months (Sept. 1995-Feb.1996) at the École Supérieure de Physique et Chimie you'llrielles (Paris, France, Prof. Jacques Simon), 1 year and a half (Mar. 1996-Aug. 1997) to the UAM as a researcher hired by the Ministry of Education and Science for the subprogram for the reincorporation of Doctors in Spain. In October 1998, she joined the UMH as Tenure Professor and in 2010 she promoted to University Professor (one of the youngest in Spain). She currently directs the MOLECULAR DESIGN research group (DYSMOL- <http://quimicaorganica.umh.es>), within the Bioengineering Institute of the UMH, focused mainly on the synthesis of electroactive molecular and supramolecular systems with nano- and biotechnological applications. She is the co-author of more than 150 articles in international scientific journals, 5 national patents and 2 book chapters, h = 35. From 2002 to date, Prof. Sastre has been IP without interruption of 6 CICYT projects and 9 regional projects, two of them (PROMETEO), a project of excellence in the Valencian Community. He has been part of the Consolider HOPE project dedicated to the development of photovoltaic cells and has been IP of requests for large infrastructures: NMR-400 MHz, UV-Vis-NIR-IR Spectroscopy Unit, NMR-300 MHz, MALDI-ToF, dry box, dry box metal and organic evaporator, external quantum efficiency meter. Since 2009 she has supervised 7 doctoral theses (4 of them extraordinary doctorate award) and has 3 theses in progress. She is or has also been the tutor of numerous students of the Interuniversity Master



of Nanoscience and Molecular Nanotechnology (of which she was coordinator at the UMH during 3 years) and of the Master of Bioengineering and final degree projects at the UMH, where she teaches. In the last 5 years she has given more than 30 invited conferences at conferences, 24 international and 6 national. She has completed three short stays at North American universities as a visiting professor funded by scholarships from the Spanish government (2011: 3 months at the University of California, Santa Barbara, - Prof. QT Nguyen; 2001: 3 months at Kent State University, Ohio, Prof. R. Twieg; 2017 at the Friedrich-Alexander-Universitaet Erlangen-Nuernberg, Prof. Dirk Guldi. She maintains numerous collaborations of national and international prestige. She has been deputy of the national evaluation and prospective agency (ANEP) of the chemistry area (Feb. 2012-Jun. 2015). She is a member of the RSEQ and the RSEF, the ACS, the ECS and the "Porphyrins and Phthalocyanines Society." She is president of the Specialized Group on Nanoscience and Molecular Materials of the RSEQ and of the RSEF (March 2013-). Co-founder of the spin-off ANFECHM SL –Medalla Barluenga 2018 granted by the specialized group of Organic Chemistry of the RSEQ in recognition of a projection of quality and excellence in her research career independent in Organic Chemistry. The interests and scientific-technical objectives in the medium / long term of her line of research are to be able to reach the international division of honor in chemistry, publishing in journals with a very high impact index and carrying out patents, to be able to train PhD students.

## Part C. RELEVANT MERITS

### C.1. Publications

1. M. Pegu, D. Molina, M. J. Álvaro-Martins, M. Castillo, L. Ferrer, S. Kazim, Á. Sastre-Santos, S. Ahmad "Dimers of Diethynyl-Conjugated Zinc-Phthalocyanine as Hole Selective Layers for Perovskites solar cells Fabrication" *J. Mater. Chem. C*, **2022**, *10*, 11975–11982. DOI: 10.1039/d2tc01187e. IF: 8.067
2. J. Follana-Berná, R. Farran, W. Leibl, A. Quaranta, Á. Sastre-Santos, A. Aukauloo, "Phthalocyanine as Bioinspired Model for Chlorophyll f Containing Photosystem II Pushing Photosynthesis in the Far-Red" *Angew. Chem. Int. Ed.* **2021**, *60*, 12284–12288; doi: 10.1002/anie.202101051, IF: 12.102,
3. I. K. Sideri, Y. Jang, J. Garcés-Garcés, Á. Sastre-Santos, R. Canton-Vitoria, R. Kitaura, F. Fernández-Lázaro, F. D'Souza, N. Tagmatarchis, "Unveiling the photoinduced electron-donating character of MoS<sub>2</sub> in covalently linked hybrids featuring perylene-diimide" *Angew. Chem. Int. Ed.* **2021**, *60*, 9120–9126; doi: 10.1002/anie.202016249, IF: 12.102.
4. I. Papadopoulos, M. J. Álvaro-Martins, D. Molina, P. M. McCosker, P. A. Keller, T. Clark, Á. Sastre-Santos and D. M. Guldi, "Solvent-Dependent Singlet Fission in Diketopyrrolopyrrole Dimers: A Mediating Charge Transfer versus a Trapping Symmetry-Breaking Charge Separation" *Adv. Energy Mater.* **2020**, *10*, 2001496. doi: 10.1002/aenm.202001496. IF: 25.245
5. R. Haldar, Z. Fu, R. Joseph, D. Herrero, L. Martín-Gomis, B. S Richards, I. A. Howard, Á. Sastre-Santos and C. Wöll, "Guest-Responsive Polaritons in Porous Framework: Chromophoric Sponges in Optical QED Cavities" *Chem. Sci.* **2020**, *11*, 7972-7978, DOI:10.1039/d0sc02436h. IF: 9.346
6. R. Canton-Vitoria, H. B. Gobeze, V. M. Blas-Ferrando, J. "Excited-State Charge Transfer in Covalently Functionalized MoS<sub>2</sub> with a Zinc Phthalocyanine Donor–Acceptor Hybrid": *Angew. Chem. Int. Ed.* **2019**, *20*, 163-172. DOI: 10.1002/anie.201900101. IF: 12.102.
7. L. Martín-Gomis, F. Peralta-Ruiz, M. B. Thomas, F. Fernández-Lázaro, F. D'Souza, Á. Sastre-Santos. "Multichromophoric Perylene-diimide-Silicon Phthalocyanine-C60 System as an Artificial Photosynthetic Analogue" *Chem. Eur. J.* **2017**, *23*, 3863-3874. DOI: 10.1002/chem.201603741. IF: 5.731. NC: 7.
8. V. M. Blas-Ferrando, J. Ortiz, V. González-Pedro, R. S. Sánchez, I. Mora-Seró F. Fernández-Lázaro, Á. Sastre-Santos "Synergistic interaction of Dyes and Semiconductor Quantum Dots for Advanced Cascade Co-Sensitized Solar Cells" *Adv. Funct. Mat.* **2015**, *25*, 3220-3226. DOI: 10.1002/adfm.201570143. IF: 10.4.
9. V. M. Blas-Ferrando, J. Ortiz, K. Ohkubo, S. Fukuzumi, F. Fernández-Lázaro, Á. Sastre-Santos, "Submillisecond-lived photoinduced charge separation in a fully conjugated phthalocyanine-perylenebenzimidazole dyad", *Chem. Sci.* **2014**, *5*, 4785-4793. DOI: 10.1039/C4SC01579G. IF: 8,601, NC: 34
10. R. Martín, F. J. Céspedes-Guirao, M. de Miguel, F. Fernández-Lázaro, H. García y Á. Sastre-Santos, "Single- and multi-walled carbon nanotubes covalently linked to perylenebisimides: synthesis, characterization and photophysical properties" *Chem. Sci.* **2012**, *3*, 470-475. IF:8.314

### C.2. Research projects

1. PROMETEO/ CIPROM/2021/059 "Agregados Macromoleculares para la preparación de Células Solares Orgánicas e Híbridas Estables y Sostenibles" Generalitat Valenciana. IP: **Ángela Sastre Santos** (UMH). Desde: 01-01-2022. Hasta: 31-12-2025. Subvención concedida: 508.574,94€



2. MFA/2022/028. “2D/3D Organic Molecular Materials for Energy Conversion” IP: **Ángela Sastre Santos** (UMH). Desde: 22-04-2022. Hasta: 21-04-2025. Subvención concedida: 165.347€
3. PID2020-117855RB-I00. “Síntesis y Organización Supramolecular de Sistemas Electroactivos basados en Ftalocianinas y Dicetopirrolpirroles para Fotovoltaica Molecular y Tratamiento contra el Cáncer (SioSi)” Ministerio de Ciencia e Innovación. IP: **Ángela Sastre Santos** (UMH). Desde: 01-09-2021. Hasta: 30-08-2024. Subvención concedida: 169.400,00€
4. CTQ2014-55798-R. “Moléculas y Polímeros Conjugados Innovadores para la preparación de Células Solares Orgánicas e Híbridas y para aplicación en Optoelectrónica” MINECO. IP: **Ángela Sastre Santos** (UMH). Desde: 01-10-2015. Hasta: 30-09-2018.
5. PROMETEO/2012/010. “Síntesis y Caracterización de Sistemas Recolectores de Luz Artificiales y de Separación de Carga basados en Ftalocianinas y Perileno-bisimidias para la conversión eficiente de Energía Solar” Generalitat Valenciana. IP: **Ángela Sastre Santos** (UMH). Desde: 01-06-2012. Hasta: 31-12-2015.
6. CTQ2011-26455/BQU. “Síntesis, Caracterización y Autoorganización de Sistemas Electroactivos para la Construcción de Células Solares Orgánicas”. CICYT. IP: **Ángela Sastre Santos** (UMH). Desde: 31-12-2011. Hasta: 31-12-2014.
7. CTQ2008-05901/BQU. “Diseño y Síntesis de Sistemas Moleculares y Supramoleculares Electroactivos para aplicaciones Optoelectrónicas basadas en Transferencia Electrónica Fotoinducida”. CICYT. IP: **Ángela Sastre Santos** (UMH). Desde: 31-12-2008. Hasta: 31-12-2011.
8. MAT2005-07369-C03-02. “Síntesis y Caracterización de Materiales Moleculares y Polímeros con Propiedades Laser y Fotorrefractivas”. CICYT. IP: **Ángela Sastre Santos** (UMH). Desde: 31-12-2005. Hasta: 31-12-2008. Subvención concedida: 94.010,00 €
9. BQU2002-04513-C02-01. “Síntesis y Caracterización de Cromóforos Ópticos No Lineales, Cristales Líquidos, Fotosensibilizadores y Polímeros para su aplicación como Materiales Fotorrefractivos Orgánicos”. CICYT. IP: **Ángela Sastre Santos** (UMH). Desde: 01-11-2002. Hasta: 31-10-2005. Subvención concedida: 74.750,00€
10. Consolider-Ingenio 2010 CSD2007-00007. “Hybrid optoelectronic and photovoltaic devices for renewable energy HOPE. CICYT. IP: Juan Bisquert (UJI). IP (UMH): Fernando Fernández Lázaro. Desde: 01-10-2007. Hasta: 30-09-2012.

### C.3. Patents

1. Ángela Sastre Santos, Vicente Blas-Ferrando, Juan Javier Ortiz y Fernando Fernández Lázaro, “Mercaptoftalocianinas, procedimiento de preparación de las mismas y su anclaje a nanopartículas metálicas”. N° DE SOLICITUD: P 201401061 FECHA PRESENTACION: 26-XII-2014. ENTIDAD TITULAR: Universidad Miguel Hernández de Elche. PAISES: España
2. Fernando Fernández Lázaro, Nathalie Zink Lorre, Enrique Font Sanchis, David Gutiérrez Moreno y Ángela Sastre Santos. “Procedimiento de obtención de derivados de PDI”. N° DE SOLICITUD: P201431181. FECHA PRESENTACION: 1-VIII-2014. ENTIDAD TITULAR: Universidad Miguel Hernández de Elche. PAISES: España
3. Pedro Javier Rodríguez Cantó, Rafael Abargues López, Juan Martínez Pastor, Fernando Fernández Lázaro, Nathalie Zink Lorre, Enrique Font Sanchis, Ángela Sastre Santos. Capas poliméricas conductoras transparentes y método de obtención de las mismas. N° DE SOLICITUD: P201730735. FECHA PRESENTACION: 26.V.2017. ENTIDAD TITULAR: Universidad de Valencia y Universidad Miguel Hernández de Elche. PAISES: España
4. Fernando Fernández Lázaro, Nathalie Zink Lorre, Enrique Font Sanchis, Ángela Sastre Santos, Tomás Torroba Pérez, Patricia Calvo Gredilla y José García Calvo. 1-(Piperazin-N-ilaril)- y 1,7-di(piperazin-N-ilaril)perileno-3,4:9,10-tetracarboxidiimidias, procedimiento de preparación de las mismas y su uso como detectores de explosivos oxidantes. N° DE SOLICITUD: P201500934. FECHA PRESENTACION: 23.XII.2015. FECHA CONCESION: 27.IX.2017. ENTIDAD TITULAR: Universidad Miguel Hernández de Elche y Universidad de Burgos. PAISES: España. N° DE SOLICITUD EXTENSION INTERNACIONAL: PCT/ES2016/070930. FECHA DE SOLICITUD EXTENSION INTERNACIONAL: 22.XII.2016

### C.4. International (IT) and National (NT) Invited Talks (Last 5 years)

**2022(3-IT, 1NT):** (1) 12<sup>th</sup> International Conference of Porphyrins and Phthalocyanines, Madrid, 10-15 Julio 2022. (2) III International Conference on Materials Science & Engineering April 18-22, 2022 | Boston, MA (3) 2022 Gordon Research Conference on “Hybrid Electronic and Photonic Materials and Phenomena, May 5-10, Castelldefels (Spain). XXXVIII Bienal de la Real Sociedad Española de Química, 28 Junio-1 Julio 2022, Granada



**2021 (2-IT):** (1) 2021 International Chemical Congress of Pacific Basic Societies, On-line December 16-21. (2) 11th International Conference on Porphyrins and Phthalocyanines ICPP-10, online, 28 June-3 July.

**2020 (1NT):** (1) I Multifunctional Metallodrugs in Diagnosis and Therapy Meeting, online, 27-Julio.

**2019 (1-IT, 3NT):** (1) 15th European Conference on Molecular Electronics, Linköping (Sweden), 27-31 de Agosto. (2) I Jornada de Química Supramolecular, Valencia, 18-Diciembre (3) XXXVII Reunión Bial RSEQ, San Sebastián, 26-30 de Mayo. (4) XXXVII Reunión Bial RSEF, Zaragoza, 15-19 de Julio.

**2018 (2-IT, 2NT):** (1) 6JIF Jornadas Ibéricas de Fotoquímica, Aveiro (Portugal). 11-14 de septiembre. (2) 10th International Conference on Porphyrins and Phthalocyanines ICPP-10, Munich (Germany), 1-6 de julio. (3) Workshop "Modificación Química del Grafeno para Nuevas Propiedades y Aplicaciones" Málaga (España), 8-9 de marzo. XVII Escuela Nacional de Materiales Moleculares. Torremolinos, Málaga (España) 11-16 de febrero.

**2017 (4-IT):** (1 y 2) 231<sup>st</sup> Meeting of the Electrochemical Society, New Orleans (EEUU), 28 de Mayo-1 de Junio. (3) 10<sup>th</sup> European School on Molecular Nanoscience, El Escorial (Madrid, Spain), 7-12 de Mayo de 2017 (4) Industry Day on Printed Electronics and Solar Cells-DaySol17, Lisboa (Portugal), 7 de Abril

### C.5. Scientific Difusion Activities

- Directora del Instituto de Bioingeniería de la Universidad Miguel Hernández de Elche (IB-UMH), Octubre 2018-. Subdirectora del IB-UMH, Mayo (2015- ). Secretaria del IB-UMH, Mayo (2005-2015).
- Presidenta del Grupo Especializado de Nanociencia y Materiales Moleculares de la RSEQ y de la RSEF (Marzo 2013-Marzo 2021). Vicepresidenta del Grupo Especializado de Nanociencia y Materiales Moleculares de la RSEQ y de la RSEF (2009-2013).
- Adjunta de la agencia nacional de evaluación y prospectiva (ANEP) del área de química (Feb 2102-Jun 2015).
- Evaluadora Comisión Europea (FETOPEN, Marie Curie). Evaluadora Fundació la Caixa (posgrado en América del Norte).Evaluadora de las siguientes agencias internacionales: Hong Kong, Sudáfrica, Francia, Alemania, Bélgica, Holanda, Rumania, Chile, Argentina.
- Miembro de la *American Chemical Society*, *Electrochemical Society*, *Society of Porphyrins and Phthalocyanines* y de la Real Sociedad Española de Química (RSEQ) y de Física (RSEF).
- Coordinadora UMH del Master Interuniversitario de Nanociencia y Nanotecnología Molecular (2016-2019)

### C.6. Organizer of Scientific Congresses

- I-VI Jornada "La Ciencia tiene nombre de Mujer", 10-03-2017, 26-02-2018, 11-03-2019, 27-02-2020, 23-02-2021, 02\_11\_2022, Elche
- Jornadas DivulgaNobel 2020, 11-11-2020, 2021, 30-11-2021 Elche
- 12<sup>th</sup> European School on Molecular Nanoscience, Elche, 19-20 de Mayo de 2019.
- Phthalocyanines and Close Friends, 27 de Enero de 2016, Elche
- Simposios en 8<sup>th</sup>, 10<sup>th</sup>, 12<sup>th</sup> International Conference of Porphyrins and Phthalocyanines, 3-8 de Julio de 2016. Nanjing (China), Munich (Alemania) 1-6 de Julio de 2018, Madrid, 10-15 Julio 2022.
- Simposio "Química de Nanomateriales Funcionales" XXXVIII Bial de la Real Sociedad Española de Química, 28 Junio-1 Julio 2022, Granada, XXXVI Grafeno y Materiales 2D", Bial de la Real Sociedad Española de Química, 25-29 de junio de 2017, Sitges. Simposia "Beyond Graphene Chemistry and Applications" y "Nanociencia y Materiales Moleculares", XXXV Bial de la Real Sociedad Española de Química, 19-23 Junio de 2015, La Coruña
- Simposio "Molecular Materials and Molecular Nanoscience", XXXV Bial de la RSEF, 15-19 de Julio de 2019, Zaragoza. Simposio, Electrónica Molecular, XXXVI Bial de la RSEF, Santiago de Compostela, 17-2/07/2017
- X y XVI Escuela Nacional de Materiales Moleculares, Elche, 8-13-Feb-2009 y Santa Pola 1-5-Feb 2015.