| CV Date | 31/01/2025 |
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**Part A. PERSONAL INFORMATION**

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|---|---|---|---|
| First Name | Mariano | | |
| Family Name | Campoy Quiles | | |
| Sex | Male | Date of Birth | 26/08/1978 |
| ID number Social Security, Passport | 44830771E | | |
| URL Web | https://icmab.es/campoy-quiles-mariano-permanent-researchers | | |
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**CURRICULUM NARRATIVE SUMARY**

Mariano Campoy-Quiles is a materials scientist who has chosen to address one of the most critical problems facing humanity: the future supply of clean energy. He leads a 10-12 people group at ICMAB that has built substantial research efforts in two application areas, solar **photovoltaic** (light to electric) and **thermoelectric** (heat to electric) energy conversion. The fundamental work on the light-matter interaction at his early carrier stage led to the award of the Most Outstanding Young Researcher in Experimental Physics Award (from the Spanish Royal Society of Physics and Fundación BBVA) in 2012. Then he started a research line in organic based thermoelectrics, an emerging field of research that he has helped to shape from the beginning. In the frame of his ERC CoG, he and his team have advanced a disruptive technology for the screening of PV and thermoelectric materials. They developed from scratch a methodology based on gradients in the parameters of interest combined with colocal hyperspectral and photovoltaic imaging, which results in more than 50 times faster evaluation of materials, saving up to 90% of the raw chemicals. His international leadership in both, organic thermoelectrics and photovoltaics can be witnessed by the fact that he has been invited to write review papers and book chapters on these topics, and give more than 50 invited presentations at international conferences. His impact has gone beyond academia, as he has been interviewed several times by autonomic and national media (TV, radio, press) and his research highlighted. He is co-author in 152 papers, including three papers in Nature Materials as well as a stream of significant papers in leading Physics and Chemistry journals. This output has earned him an h-index of 47/55 and over 10500/13300 citations (Scopus/Google Scholar). 67% of the papers are within the 25% most cited papers worldwide according to Scopus. He is also co-inventor in **seven patents**, and has **co-founded the spin-off company Molecular Gate**. He is/has been the principal investigator in 24 projects (including 5 Plan Estatal, three Marie Curie doctoral networks (as partner), an ERC Consolidator Grant, and 2 ERC PoC) and many contracts with industry, summing up more than 6.4 million €. He has equipped two labs (device fabrication and characterization) and supervised 15 PhD students, 10 post docs and a number of bachelors and master students. He obtained the **Margarita Salas Medal** for supervision in 2024. From 2019 to 2022 he was the **Coordinator of the Materials for Energy and Environment Subarea** of the Agencia Estatal de Investigación where he and his team managed the different calls of the Spanish research system. He is in the top 2% of scientific researchers worldwide according to the Stanford ranking. He was **promoted to Research Professor** in April 2022.

## 1. RESEARCH, KNOWLEDGE TRANSFER AND EXCHANGE ACTIVITIES

### 1.1. PROJECTS AND CONTRACTS FOR RESEARCH AND KNOWLEDGE TRANSFER AND EXCHANGE

#### 1.1.1. Projects

1 **Project**. Hybrid and Organic Thermoelectric Systems (HORATES)-MSCA-ITN-955837. European Union H2020. Mariano Campoy Quiles. (Instituto de Ciencia de los Materiales de Barcelona). 01/03/2021-28/02/2025. 501.809 €.

2 **Project**. Efficient and Stable Organic Photovoltaics by Combinatorial Screening (MSCA-IF). Marie Curie Individual Fellowship. Sergi Riera Galindo. (Instituto de Ciencia de los Materiales de Barcelona). 01/09/2022-31/08/2024. 160.932 €.

3 **Project**. Organic thermoelectric generators to power precision viticulture sensor networks (Orgevine)-ERC PoC-963954. European Research Council. Mariano Campoy Quiles. (Instituto de Ciencia de los Materiales de Barcelona). 01/02/2021-31/08/2022. 150.000 €.

4 **Project**. Conversión Eficiente de Energía Solar Visible e Infrarroja mediante arquitecturas de tipo arcoíris (RAINBOW)-PGC2018-095411-B-I00. Agencia estatal de Investigación. Alejandro Goñi. (Instituto de Ciencia de los Materiales de Barcelona). 01/01/2019-31/12/2021. 169.400 €.

5 **Project**. Xarxes de Sensors distribuits autonoms per la viticultura intelligent (Sensoraïm)-2018 PROD 00191. AGENCIA DE GESTIO D'AJUTS UNIVERSITARIS I DE RECERCA. Mariano Campoy Quiles. (Instituto de Ciencia de los Materiales de Barcelona). 01/05/2019-31/01/2021. 97.287 €.

6 **Project**. Spins for Efficient Photovoltaic Devices based on Organic Molecules. European Comission. Mariano Campoy Quiles. (Instituto de Ciencia de los Materiales de Barcelona). 01/11/2016-31/10/2019.

7 **Project**. JAE Chair 2024, Design and Optimisation of Molecular Materials for Innovative Energy Solutions. Consejo Superior de Investigaciones Científicas. Jenny Nelson. (Instituto de Ciencia de los Materiales de Barcelona). From 01/06/2024. 600.000 €.

8 **Project**. 101120262, Understanding, Predicting and Enhancing the Stability of Organic Photovoltaics (OPVStability). Horizon Europe. Mariano Campoy Quiles. (Instituto de Ciencia de los Materiales de Barcelona). From 01/09/2023. 251.971 €.

**Narrative explanation of the contribution**

This is a Marie Curie Doctoral Network coordinated by University of Gratz.

9 **Project**. ERC PoC 101100819, The cold-chain challenge: à la carte Time-temperature indicators enabled by patterned structural colour in organic semiconductors. European Research Council. Mariano Campoy Quiles. (Instituto de Ciencia de los Materiales de Barcelona). From 01/02/2023. 150.000 €.

10 **Project**. TED2021-131911B-I00, DESCUBRIMIENTO COMBINATORIO DE INTERCARAS FUNCIONALES PARA CELDAS FOTOVOLTAICAS ORGANICAS ESTABLES Y EFICIENTES. Ministerio de Ciencia e Innovación. Universidades. Mariano Campoy Quiles. (Instituto de Ciencia de los Materiales de Barcelona). From 01/12/2022. 333.500 €.

11 **Project**. PDC2022-134001-I00, FUENTE DE LUZ DE ESPECTROS A MEDIDA PARA LA CARACTERIZACION DE MATERIALES FOTOVOLTAICOS. Ministerio de Ciencia e Innovación. Universidades. Mariano Campoy Quiles. (Instituto de Ciencia de los Materiales de Barcelona). From 01/12/2022. 149.500 €.

12 **Project**. PLEC2022-009323, SYNATRA: Arquitecturas sinérgicas para agrovoltaica de nueva generación integrando módulos fotovoltaicos orgánicos transparentes. Ministerio de Ciencia e Innovación. Universidades. Mariano Campoy Quiles. (Instituto de Ciencia de los Materiales de Barcelona). From 01/12/2022. 107.800 €.

**Narrative explanation of the contribution**

This project is a collaboration between five different institutions, EURECAT, CSIC, Vitsolc, ICFO, IRTA

13 **Project**. PID2021-128924OB-I00, MEJORANDO LA EFICIENCIA DE CELDAS SOLARES POR EMPAREJADO ESPECTRAL Y AUMENTO DE LA MOVILIDAD DE CARGA. Ministerio de Ciencia e Innovación. Universidades. Alejandro Goñi. (Instituto de Ciencia de los Materiales de Barcelona). From 01/09/2022. 272.250 €.

### 1.1.2. Contracts

1 **Contract**. CONTRATO APOYO TECNOLOGICO ENTRE CSIC,M.P. (ICMAB) Y NANOMOL TECHNOLOGIES SL "Caracterización e Identificación de Partículas mediante Espectroscopía Raman" Nanomol Technologies. Mariano Campoy Quiles. 13/07/2023-13/07/2025. 15.125 €.
2 **Contract**. Cribado de materiales y procesos avanzados para módulos fotovoltaicos orgánicos Eurecat Technological Center. Mariano Campoy Quiles. 29/03/2023-28/03/2026. 18.135 €.
3 **Contract**. PROOF OF CONCEPT ANTICOUNTERFEAKING TAGS AN THAW INDICATORS Molecular Gate S.L.. Mariano Campoy Quiles. 01/04/2022-01/04/2024. 50.751 €.
4 **Contract**. TECHNICAL SUPPORT CONTRACT BETWEEN CSIC-ICMAB, M.P., BIOMOLECULAR AND ORGANIC ELECTRONICS,IFM,LINKÖPING UNIVERSITY AND EPISHINE AB Epishine AB. Mariano Campoy Quiles. 21/12/2020-21/12/2021. 10.000 €.
5 **Contract**. Medidas de profilometria mecánica, medidas de transmisión óptica, medidas de elipsometría, analisis de los espectros de elipsometría, resumen de los resultados de las medidas, según pedido. INNOVACIO I RECERCA INDUSTRIAL I SOSTENIBLE SL. Mariano Campoy Quiles. 23/07/2020-23/10/2020. 1.573 €.
6 **Contract**. Proyecto de Investigación y Desarrollo "Dispositivos Electrónicos Multicapa Fotodetectores en la Región del NIR por Impresión" Eurecat. Mariano Campoy Quiles. 15/03/2020-30/12/2021. 18.150 €.
7 **Contract**. Combinatorial Optimization of Organic Solar Cells Epishine. Mariano Campoy Quiles. 01/02/2020-01/02/2022. 28.000 €.
8 **Contract**. HYBRID PHOTOVOLTAIC AND THERMOELECTRIC (PV/TE) DEVICES BASED ON ORGANIC SEMICONDUCTORS Obra Social Fundación la Caixa. Jose Pierls Jurado. 11/10/2017-10/01/2021. 123.792 €.

## 1.2. RESULTS AND DISSEMINATION OF RESEARCH AND KNOWLEDGE TRANSFER AND EXCHANGE ACTIVITIES

### 1.2.1. Research activity

AC: corresponding author. (nº x / nº y): position / total authors. If applicable, indicate the number of citations

1 **Scientific paper**. Zapata-Arteaga, Osnat; Perevedentsev, Aleksandr; Prete, Michela; et al; Campoy-Quiles, Mariano. 2024. A Universal, Highly Stable Dopant System for Organic Semiconductors Based on Lewis-Paired Dopant Complexes. ACS ENERGY LETTERS. AMER CHEMICAL SOC. ISSN 2380-8195. WOS (0) https://doi.org/10.1021/acsenergylett.4c01278
2 **Scientific paper**. Quiles, Mariano Campoy. 2024. A universal additive concept yields record-high efficient organic solar cells. Science China Materials. 67-5, pp.1670 – 1671-1670 – 1671.
3 **Scientific paper**. Casademont-Vinas, Miquel; Capolat, Daniel; Quesada-Ramirez, Arianna; et al; Campoy-Quiles, Mariano. 2024. Combinatorial screening of wide band-gap organic solar cell materials with open-circuit voltage between 1.1 and 1.4 V. JOURNAL OF MATERIALS CHEMISTRY A. ROYAL SOC CHEMISTRY. 12, pp.16716-16728. ISSN 2050-7488. WOS (1) https://doi.org/10.1039/d4ta01944j
4 **Scientific paper**. Liu, Jian; Craighero, Mariavittoria; Gupta, Vandna K.; et al; Müller, Christian. 2024. Electrically Programmed Doping Gradients Optimize the Thermoelectric Power Factor of a Conjugated Polymer. Advanced Functional Materials. 34-18.
5 **Scientific paper**. Pancotti, Giulia; Killalea, C. Elizabeth; Rees, Thomas W.; et al; Amabilino, David B.2024. Film thickness dependence of nanoscale arrangement of a chiral electron donor in its blends with an achiral electron acceptor. NANOSCALE. ROYAL SOC CHEMISTRY. ISSN 2040-3364. WOS (0) https://doi.org/10.1039/d4nr04269g

6 **Scientific paper**. Riera-Galindo S; Sanz-Lleó M; Gutiérrez-Fernández E; Ramos N; Mas-Torrent M; Martín J; López-Mir L; Campoy-Quiles M. 2024. High Polymer Molecular Weight Yields Solar Cells with Simultaneously Improved Performance and Thermal Stability.Small (Weinheim an der Bergstrasse, Germany). 20, pp.e2311735. ISSN 1613-6810. https://doi.org/10.1002/smll.202311735

7 **Scientific paper**. Torimtubun, Alfonsina Abat Amelenan; Navarro, Matias-Jesus Alonso; Quesada-Ramirez, Arianna; Rodriguez-Martinez, Xabier; Segura, Jose L.; Goni, Alejandro R.; Campoy-Quiles, Mariano. 2024. High-Throughput Screening of Low-Bandgap Organic Semiconductors for Photovoltaic Applications: In the Search of Correlations. SOLAR RRL. WILEY-V C H VERLAG GMBH. 8. ISSN 2367-198X. WOS (2) https://doi.org/10.1002/solr.202400213

8 **Scientific paper**. Wang, Zhihang; Holzel, Helen; Fernandez, Lorette; et al; Moth-Poulsen, Kasper. 2024. Hybrid solar energy device for simultaneous electric power generation and molecular solar thermal energy storage. JOULE. CELL PRESS. 8. ISSN 2542-4351. WOS (4) https://doi.org/10.1016/j.joule.2024.06.012

9 **Scientific paper**. Craighero M; Guo J; Zokaei S; et al; Müller C. 2024. Impact of Oligoether Side-Chain Length on the Thermoelectric Properties of a Polar Polythiophene.ACS applied electronic materials. 6, pp.2909-2916. WOS (42) https://doi.org/10.1021/acsaelm.3c00936

10 **Scientific paper**. Rodriguez-Martinez, Xabier; Saiz, Fernan; Dorling, Bernhard; et al; Campoy-Quiles, Mariano. 2024. On The Thermal Conductivity of Conjugated Polymers for Thermoelectrics. ADVANCED ENERGY MATERIALS. WILEY-V C H VERLAG GMBH. 14. ISSN 1614-6832. WOS (1) https://doi.org/10.1002/aenm.202401705

11 **Scientific paper**. Gibert-Roca M; Casademont-Viñas M; Liu Q; Vandewal K; Goñi AR; Campoy-Quiles M. 2024. RAINBOW Organic Solar Cells: Implementing Spectral Splitting in Lateral Multi-Junction Architectures.Advanced materials (Deerfield Beach, Fla.). 36, pp.e2212226. ISSN 0935-9648. https://doi.org/10.1002/adma.202212226

12 **Scientific paper**. Pagano, Katia; Kim, Jin Gwan; Luke, Joel; et al; Kim, Ji-Seon. 2024. Slow vibrational relaxation drives ultrafast formation of photoexcited polaron pair states in glycolated conjugated polymers. NATURE COMMUNICATIONS. NATURE PORTFOLIO. 15. WOS (0) https://doi.org/10.1038/s41467-024-50530-7

13 **Scientific paper**. Doerling, Bernhard; Hawkey, Angus; Zaumseil, Jana; Campoy-Quiles, Mariano. 2024. Strong dependence of air stability on thickness in n-doped carbon nanotube thermoelectrics. APPLIED PHYSICS LETTERS. AIP Publishing. 124. ISSN 0003-6951. WOS (1) https://doi.org/10.1063/5.0198773

14 **Scientific paper**. Suárez-Blas, Fátima; Pandolfi, Lorenzo; Alonso-Navarro, Matías J.; et al; Segura, José L.2024. Tailoring the Electron-Deficient Central Core on Fused-Ring Nonfullerene Acceptors: Deciphering the Relationships Between Structure, Property, and Photovoltaic Performance. Advanced Energy and Sustainability Research. 5-6.

15 **Scientific paper**. Zapata-Arteaga, Osnat; Doerling, Bernhard; Alvarez-Corzo, Ivan; Xu, Kai; Reparaz, Juan Sebastian; Campoy-Quiles, Mariano. 2024. Upscaling Thermoelectrics: Micron-Thick, Half-a-Meter-Long Carbon Nanotube Films with Monolithic Integration of p- and n-Legs. ACS APPLIED ELECTRONIC MATERIALS. AMER CHEMICAL SOC. 6, pp.2978-2987. WOS (0) https://doi.org/10.1021/acsaelm.3c01671

16 **Scientific paper**. Marina, Sara; Dyson, Matthew; Rodríguez-Martínez, Xabier; et al; Martín, Jaime. 2024. Using spatial confinement to decipher polymorphism in the organic semiconductor p-DTS(FBTTh2)2. Journal of Materials Chemistry C. 12-7, pp.2410 – 2415-2410 – 2415.

17 **Scientific paper**. Srinivasan SY; Cler M; Zapata-Arteaga O; et al; Laromaine A. 2023. Conductive Bacterial Nanocellulose-Polypyrrole Patches Promote Cardiomyocyte Differentiation.ACS applied bio materials. 6, pp.2860-2874. WOS (86) https://doi.org/10.1021/acsabm.3c00303

18 **Scientific paper**. Xu, Kai; Guo, Jiali; Raciti, Grazia; et al; Reparaz, Juan Sebastián. 2023. In-plane thermal diffusivity determination using beam-offset frequency-domain thermoreflectance with a one-dimensional optical heat source. International Journal of Heat and Mass Transfer. 214.

19 **Scientific paper**. Rodríguez-Martínez, Xabier; Riera-Galindo, Sergi; Aguirre, Luis Ever; Campoy-Quiles, Mariano; Arwin, Hans; Inganäs, Olle. 2023. Laminated Organic Photovoltaic Modules for Agrivoltaics and Beyond: An Outdoor Stability Study of All-Polymer and Polymer:Small Molecule Blends. Advanced Functional Materials. 33-10.

20 **Scientific paper**. Casademont-Viñas M; Gibert-Roca M; Campoy-Quiles M; Goñi AR. 2023. Spectrum on demand light source (SOLS) for advanced photovoltaic characterization.The Review of scientific instruments. 94. ISSN 0034-6748. https://doi.org/10.1063/5.0156236

21 **Scientific paper**. Pérez LA; Xu K; Wagner MR; et al; Reparaz JS. 2022. Anisotropic thermoreflectance thermometry: A contactless frequency-domain thermoreflectance approach to study anisotropic thermal transport.The Review of scientific instruments. 93, pp.034902. ISSN 0034-6748. https://doi.org/10.1063/5.0066166

22 **Scientific paper**. Adel R.; Gala E.; Alonso-Navarro M.J.; et al; Campoy-Quiles M.2022. Comparing the microstructure and photovoltaic performance of 3 perylene imide acceptors with similar energy levels but different packing tendencies. Journal of Materials Chemistry C. 10, pp.1698-1710. ISSN 20507534. SCOPUS (9) https://doi.org/10.1039/d1tc05037k

23 **Scientific paper**. Pascual-San-José E; Rodríguez-Martínez X; Adel-Abdelaleim R; Stella M; Martínez-Ferrero E; Campoy-Quiles M. 2022. Correction: Blade coated P3HT:non-fullerene acceptor solar cells: a high-throughput parameter study with a focus on up-scalability.Journal of materials chemistry. A. 10, pp.18431. ISSN 2050-7488. https://doi.org/10.1039/d2ta90177c

24 **Scientific paper**. Zapata-Arteaga, Osnat; Marina, Sara; Zuo, Guangzheng; et al; Campoy-Quiles, Mariano. 2022. Design Rules for Polymer Blends with High Thermoelectric Performance. Advanced Energy Materials. 12-19.

25 **Scientific paper**. Belova, Valentina; Perevedentsev, Aleksandr; Gorenflot, Julien; et al; Campoy-Quiles, Mariano. 2022. Effect of Quencher, Geometry, and Light Outcoupling on the Determination of Exciton Diffusion Length in Nonfullerene Acceptors. Solar RRL. 6-8.

26 **Scientific paper**. Harillo-Baños, Albert; Fan, Qunping; Riera-Galindo, Sergi; Wang, Ergang; Inganäs, Olle; Campoy-Quiles, Mariano. 2022. High-Throughput Screening of Blade-Coated Polymer:Polymer Solar Cells: Solvent Determines Achievable Performance. ChemSusChem. 15-4.

27 **Scientific paper**. Yan J; Rodríguez-Martínez X; Pearce D; et al; Nelson J. 2022. Identifying structure-absorption relationships and predicting absorption strength of non-fullerene acceptors for organic photovoltaics.Energy & environmental science. 15, pp.2958-2973. ISSN 1754-5692. WOS (96) https://doi.org/10.1039/d2ee00887d

28 **Scientific paper**. Rodríguez-Martínez X; Riera-Galindo S; Cong J; Österberg T; Campoy-Quiles M; Inganäs O. 2022. Matching electron transport layers with a non-halogenated and low synthetic complexity polymer:fullerene blend for efficient outdoor and indoor organic photovoltaics.Journal of materials chemistry. A. 10, pp.10768-10779. ISSN 2050-7488. WOS (59) https://doi.org/10.1039/d2ta01205g

29 **Scientific paper**. Adel, Rana; Morse, Graham; Silvestri, Francesco; Barrena, Esther; Martinez-Ferrero, Eugenia; Campoy-Quiles, Mariano; Tiwana, Priti; Stella, Marco. 2022. Understanding the blade coated to roll-to-roll coated performance gap in organic photovoltaics. Solar Energy Materials and Solar Cells. North-Holland. 245, pp.111852-111852.

30 **Scientific paper**. Pirela V; Campoy-Quiles M; Müller AJ; Martín J. 2022. Unraveling the Influence of the Preexisting Molecular Order on the Crystallization of Semiconducting Semicrystalline Poly(9,9-di-n-octylfluorenyl-2,7-diyl (PFO).Chemistry of materials : a publication of the American Chemical Society. 34, pp.10744-10751. ISSN 0897-4756. WOS (38) https://doi.org/10.1021/acs.chemmater.2c02917

31 **Scientific paper**. Eisner, Flurin; Tam, Brian; Belova, Valentina; et al; Nelson, Jenny. 2021. Color-tunable hybrid heterojunctions as semi-transparent photovoltaic windows for photoelectrochemical water splitting. Cell Reports Physical Science. Elsevier. 2-12.

32 **Scientific paper**. Jurado, J.P.; Dörling, B.; Zapata-Arteaga, O.; Goñi, A.R.; Campoy-Quiles, M.2021. Comparing different geometries for photovoltaic-thermoelectric hybrid devices based on organics. Journal of Materials Chemistry C. 9-6, pp.2123-2132.

33 **Scientific paper**. MacHado, P.; Canõ, I.; Menéndez, C.; et al; Coll, M.2021. Enhancement of phase stability and optoelectronic performance of BiFeO3thin films: Via cation co-substitution. Journal of Materials Chemistry C. 9-1, pp.330-339.

34 **Scientific paper**. Salomón, F.F.; Vega, N.C.; Jurado, J.P.; et al; Katz, N.E.2021. Heteroleptic Ruthenium(II) Complexes with 2,2′-Bipyridines Having Carbonitriles as Anchoring Groups for ZnO Surfaces: Syntheses, Physicochemical Properties, and Applications in Organic Solar Cells. Inorganic Chemistry. 60-8, pp.5660-5672.

35 **Scientific paper**. Marina, S.; Scaccabarozzi, A.D.; Gutierrez-Fernandez, E.; et al; Martin, J.2021. Polymorphism in Non-Fullerene Acceptors Based on Indacenodithienothiophene. Advanced Functional Materials. 31-29.

36 **Scientific paper**. Rodríguez-Martínez, X.; Pascual-San-José, E.; Fei, Z.; Heeney, M.; Guimerà, R.; Campoy-Quiles, M.2021. Predicting the photocurrent-composition dependence in organic solar cells. Energy and Environmental Science. 14-2, pp.986-994.

37 **Scientific paper**. Dörling, B.; Rodríguez-Martínez, X.; Álvarez-Corzo, I.; Reparaz, J.S.; Campoy-Quiles, M.2021. Soluble alkali-metal carbon nanotube salts for n-type thermoelectric composites with improved stability. Applied Physics Letters. 118-21.

38 **Scientific paper**. Dörling, B.; Zapata-Arteaga, O.; Campoy-Quiles, M.2020. A setup to measure the Seebeck coefficient and electrical conductivity of anisotropic thin-films on a single sample. Review of Scientific Instruments. 91-10.

39 **Scientific paper**. Rodríguez-Romeu, O.; Constenla, M.; Carrassón, M.; Campoy-Quiles, M.; Soler-Membrives, A.2020. Are anthropogenic fibres a real problem for red mullets (Mullus barbatus) from the NW Mediterranean?. Science of the Total Environment. 733.

40 **Scientific paper**. Zapata-Arteaga, O.; Dörling, B.; Perevedentsev, A.; Martín, J.; Reparaz, J.S.; Campoy-Quiles, M.2020. Closing the Stability-Performance Gap in Organic Thermoelectrics by Adjusting the Partial to Integer Charge Transfer Ratio. Macromolecules. 53-2, pp.609-620.

41 **Scientific paper**. Liu, Z.; Liu, T.; Savory, C.N.; et al; Schroeder, B.C.2020. Controlling the Thermoelectric Properties of Organometallic Coordination Polymers via Ligand Design. Advanced Functional Materials. 30-32.

42 **Scientific paper**. Rezasoltani, E.; Guilbert, A.A.Y.; Yan, J.; et al; Nelson, J.2020. Correlating the Phase Behavior with the Device Performance in Binary Poly-3-hexylthiophene: Nonfullerene Acceptor Blend Using Optical Probes of the Microstructure. Chemistry of Materials. 32-19, pp.8294-8305.

43 **Scientific paper**. Alonso-Navarro, M.J.; Harbuzaru, A.; De Echegaray, P.; et al; Segura, J.L.2020. Effective interplay of donor and acceptor groups for tuning optoelectronic properties in oligothiophene-naphthalimide assemblies. Journal of Materials Chemistry C. 8-43, pp.15277-15289.

44 **Scientific paper**. Harillo-Baños, A.; Rodríguez-Martínez, X.; Campoy-Quiles, M.2020. Efficient Exploration of the Composition Space in Ternary Organic Solar Cells by Combining High-Throughput Material Libraries and Hyperspectral Imaging. Advanced Energy Materials. 10-1.

45 **Scientific paper**. Matricardi, C.; Garcia-Pomar, J.L.; Molet, P.; Pérez, L.A.; Alonso, M.I.; Campoy-Quiles, M.; Mihi, A.2020. High-Throughput Nanofabrication of Metasurfaces with Polarization-Dependent Response. Advanced Optical Materials. 8-20.

46 **Scientific paper**. Perevedentsev, A.; Francisco-López, A.; Shi, X.; Braendle, A.; Caseri, W.R.; Goñi, A.R.; Campoy-Quiles, M.2020. Homoconjugation in Light-Emitting Poly(phenylene methylene)s: Origin and Pressure-Enhanced Photoluminescence. Macromolecules. 53-17, pp.7519-7527.

47 **Scientific paper**. Dore, C.; Dörling, B.; Garcia-Pomar, J.L.; Campoy-Quiles, M.; Mihi, A.2020. Hydroxypropyl Cellulose Adhesives for Transfer Printing of Carbon Nanotubes and Metallic Nanostructures. Small. 16-47.

48 **Scientific paper**. Abdallah, F.; Ciammaruchi, L.; Jiménez-Arguijo, A.; Duraia, E.-S.M.; Ragab, H.S.; Dörling, B.; Campoy-Quiles, M.2020. Investigating Thermoelectric Stability under Encapsulation Using PEI-Doped CNT Films as a Model System. Advanced Materials Technologies. 5-7.

49 **Scientific paper**. Rodríguez-Martínez, X.; Sevim, S.; Xu, X.; et al; Campoy-Quiles, M.2020. Microfluidic-Assisted Blade Coating of Compositional Libraries for Combinatorial Applications: The Case of Organic Photovoltaics. Advanced Energy Materials. 10-33.

50 **Scientific paper**. Gibert-Roca, M.; Molet, P.; Mihi, A.; Campoy-Quiles, M.2020. Near infrared organic photodetectors based on enhanced charge transfer state absorption by photonic architectures. Journal of Materials Chemistry C. 8-28, pp.9688-9696.

51 **Scientific paper**. Perevedentsev, A.; Campoy-Quiles, M.2020. Rapid and high-resolution patterning of microstructure and composition in organic semiconductors using 'molecular gates'. Nature Communications. 11-1.

52 **Scientific paper**. Zapata-Arteaga, O.; Perevedentsev, A.; Marina, S.; Martin, J.; Reparaz, J.S.; Campoy-Quiles, M.2020. Reduction of the lattice thermal conductivity of polymer semiconductors by molecular doping. ACS Energy Letters. 5-9, pp.2972-2978.

53 **Scientific paper**. Hultmark, S.; Paleti, S.H.K.; Harillo, A.; et al; Müller, C.2020. Suppressing Co-Crystallization of Halogenated Non-Fullerene Acceptors for Thermally Stable Ternary Solar Cells. Advanced Functional Materials. 30-48.

54 **Scientific paper**. Pascual-San-José, E.; Sadoughi, G.; Lucera, L.; Stella, M.; Martínez-Ferrero, E.; Morse, G.E.; Campoy-Quiles, M.; Burgués-Ceballos, I.2020. Towards photovoltaic windows: Scalable fabrication of semitransparent modules based on non-fullerene acceptorsvialaser-patterning. Journal of Materials Chemistry A. 8-19, pp.9882-9895.

55 **Scientific paper**. Perevedentsev, A.; Bargardi, F.L.; Sánchez-Ferrer, A.; et al; Caseri, W.R.2019. Assembly-Induced Bright-Light Emission from Solution-Processed Platinum(II) Inorganic Polymers. ACS Omega. 4-6, pp.10192-10204.

56 **Scientific paper**. Machado, P.; Scigaj, M.; Gazquez, J.; et al; Coll, M.2019. Band Gap Tuning of Solution-Processed Ferroelectric Perovskite BiFe 1- x Co x O 3 Thin Films. Chemistry of Materials. 31-3, pp.947-954.

57 **Scientific paper**. Pascual-San-José, E.; Rodríguez-Martínez, X.; Adel-Abdelaleim, R.; Stella, M.; Martínez-Ferrero, E.; Campoy-Quiles, M.2019. Blade coated P3HT:non-fullerene acceptor solar cells: A high-throughput parameter study with a focus on up-scalability. Journal of Materials Chemistry A. 7-35, pp.20369-20382.

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59 **Scientific paper**. Abol-Fotouh, D.; Dörling, B.; Zapata-Arteaga, O.; et al; Campoy-Quiles, M.2019. Farming thermoelectric paper. Energy and Environmental Science. 12-2, pp.716-726.

60 **Scientific paper**. Gómez, A.; Wang, Q.; Goñi, A.R.; Campoy-Quiles, M.; Abate, A.2019. Ferroelectricity-free lead halide perovskites. Energy and Environmental Science. 12-8, pp.2537-2547.

61 **Scientific paper**. Jurado, J.P.; Dörling, B.; Zapata-Arteaga, O.; Roig, A.; Mihi, A.; Campoy-Quiles, M.2019. Solar Harvesting: a Unique Opportunity for Organic Thermoelectrics?. Advanced Energy Materials. 9-45.

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63 **Review**. Scaccabarozzi A.D.; 0000-0002-6650-8160; 0000-0002-3593-0828; et al; 0000-0002-0978-8813. 2022. Doping Approaches for Organic Semiconductors. Chemical Reviews. 122, pp.4420-4492. ISSN 00092665. SCOPUS (236) https://doi.org/10.1021/acs.chemrev.1c00581

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65 **Review**. Campoy-Quiles, M.2019. Will organic thermoelectrics get hot?. Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences. 377-2152.

66 **Erratum**. Pascual-San-José E.; Rodríguez-Martínez X.; Adel-Abdelaleim R.; Stella M.; Martínez-Ferrero E.; Campoy-Quiles M.2022. Erratum: Blade coated P3HT:non-fullerene acceptor solar cells: A high-throughput parameter study with a focus on up-scalability (Journal of Materials Chemistry A (2019) 7 (20369-20382) DOI: 10.1039/C9TA07361B). Journal of Materials Chemistry A. 10, pp.18431. ISSN 20507488. SCOPUS (1) https://doi.org/10.1039/d2ta90177c

67 **Commentary**. Gómez, A.; Wang, Q.; Goñi, A.R.; Goñi, A.R.; Campoy-Quiles, M.; Abate, A.; Abate, A.; Abate, A.2020. Reply to the "comment on the publication 'Ferroelectricity-free lead halide perovskites' by Gomez: Et al. " by Colsmann et al.Energy and Environmental Science. 13-6, pp.1892-1895.

68 **Congress.** Mariano Campoy Quiles. Polymer solar cells investigated by high throughput nethods. Polymer Processing Society Meeting. Polymer Processing Society. 2024. Participatory - invited/keynote talk.

69 **Congress.** Mariano Campoy Quiles. A highly stable and efficient doping system for organic semiconductors based on dopant complexes. IPOE-2024. IPOE. 2024. Participatory - invited/keynote talk.

70 **Congress.** Mariano Campoy Quiles. Polymer solar cells investigated by high throughput methods. The 14th International Symposium on Polymer Physics. Polymer Physics Society. 2024. Participatory - invited/keynote talk.

71 **Congress.** Mariano Campoy Quiles. Design Rules for Organic Rainbow Solar Cells. European Materials Research Society Spring Meeting. European Materials Research Society. 2024. Participatory - invited/keynote talk.

72 **Congress.** Mariano Campoy Quiles. High-Throughput Screening of Materials for Rainbow Multi-Junction Organic Solar Cells. Materials Research Society Spring Meeting. Materials Research Society. 2024. Participatory - invited/keynote talk.

73 **Congress.** Mariano Campoy Quiles. High Throughput Screening of Organic Solar Cell Materials for Multi-junction cells. The Materials for Sustainable Development Conference (MATSUS24). NanoGe. 2024. Participatory - invited/keynote talk.

74 **Congress.** Mariano Campoy Quiles. High Throughput Screening of Organic Solar Cell Materials for Multijunction cells. The Materials for Sustainable Development Conference (MATSUS24). nanoGe. 2024. Participatory - invited/keynote talk.

75 **Congress.** Mariano Campoy Quiles. Using high throughput screening to match materials and photovoltaic applications. Next Generation Solar Energy Conference (ngse8). Friederich-Alexander-Univeesität Erlangen Nuremberg. 2023. Participatory - invited/keynote talk.

76 **Congress.** Mariano Campoy Quiles. High throughput investigations in organic materials for solar cells. 4th STiBNite school. UNIVERSITÄT WIEN. 2023. Participatory - invited/keynote talk.

77 **Congress.** Mariano Campoy Quiles. Photovoltaics à la carte enabled by high throughput screening of organic semiconductors. 1st Iberian Symposium on Functional Organic Polymers. Sociedade Portuguesa da Química. 2023. Participatory - invited/keynote talk.

78 **Congress.** High-Throughput Screening of Organic Solar Cells Based on PTQ10:NFA to Determine the Best Compromise Between Efficiency and Stability. MRS Spring Meeting. Symposium: EL14.06. MRS. 2023.

79 **Congress.** Mariano Campoy Quiles. Printed and Flexible Carbon Nanotube Based Thermoelectrics. Materials Research Society Meeting (MRS). MRS. 2023. Participatory - invited/keynote talk.

80 **Congress.** Mariano Campoy Quiles. Rainbow Organic Solar Cells. Materials for Sustainable Development Conference (MAT-SUS). nanoGe. 2022. Participatory - invited/keynote talk.

81 **Congress.** Mariano Campoy Quiles. Novel optoelectronic devices based on organic semiconductor gradients. Materials for Sustainable Development Conference (MAT-SUS). nanoGe. 2022. Participatory - invited/keynote talk.

82 **Congress.** Mariano Campoy Quiles. Does microstructure govern the thermal conductivity in semiconducting polymers?. 18th European Conference on Thermoelectrics (ECT'22). European thermoelectric society. 2022. Participatory - invited/keynote talk.
83 **Congress.** Mariano Campoy Quiles. Using High throughput screening methods and genetic algorithms to develop ternary blend based photovoltaics. 15th International Symposium on Flexible Organic Electronics (ISFOE22). University of Athens. 2022. Participatory - invited/keynote talk.
84 **Congress.** Mariano Campoy Quiles. Cartography of the Composition-Performance Landscape in Ternary Organic Photovoltaics.. Materials Research Society Meeting (MRS). MRS. 2022. Participatory - invited/keynote talk.
85 **Congress.** Mariano Campoy Quiles. Predicting the composition-performance landscape in organic photovoltaics. nanoGe Fall Meeting 2021#NewOPV21. Advances in Organic Photovoltaics. nanoGe. 2021.
86 **Congress.** Mariano Campoy Quiles. What governs the thermal conductivity in semiconducting polymers?. nanoGe Fall Meeting 2021#ThermoElect21. New concepts in organic/hybrid thermoelectrics. NanoGe. 2021.
87 **Congress.** Mariano Campoy Quiles. Predicting the optimum blend composition in organic solar cells by combining high throughput screening methods and machine learning algorithms. 14th International Symposium on Flexible Organic Electronics (ISFOE21). nanoTexnology. 2021. Greece.
88 **Congress.** Mariano Campoy Quiles. Patterning molecular doping: from high-throughput screening of organic thermoelectrics to drawing micron-wide conducting lines. European Materials Society Springg Meeting (EMRS)-Symposium C: Doping and charge transport processes in organic and hybrid materials for energy applications. EMRS. 2021.
89 **Congress.** Mariano Campoy Quiles. Simultaneously Improving Solution Processing and Electronic Doping in Carbon Nanotube Thermoelectrics. 239th ECS Meeting. Electrochemical Society. 2021.
90 **Congress.** El cas del sensoraïm, o ús de generadors termoelèctrics per monitoritzar vinyes. Cafe am recerca: Nano in food. Fundació Catalana per a la Recerca i la Innovació. 2020.
91 **Congress.** Mariano Campoy Quiles. Accelerating discovery in organic solar cells through combinatorial screening. nanoGe Fall Meeting 20 Simposio: #NewOPV20. Non-fullerene Electron acceptors Within Organic Photovoltaics. nanoGe. 2020.
92 **Congress.** Mariano Campoy Quiles. High throughput investigations in organic solar cells using material libraries based on gradients. Seminario invitado en la Universidad de Erlangen-Nuremberg (FAU). Invitado por el profesor Cristoph Brabec.. University of Nuremberg-Erlangen. 2020. Germany. Seminar.
93 **Congress.** Mariano Campoy Quiles. Organic solar cells: a journey across 11 orders of magnitude. CANN 2019 Energy, environment and sustainable development. Catalan association for nanoscience and nanotechnology. 2019.
94 **Congress.** Mariona Coll; Mariano Campoy Quiles. Band gap tuning of chemical deposited ferroelectric perovskite BFCO thin films. INTERNATIONAL CONFERENCE ON ELECTROCERAMICS. 2019.
95 **Congress.** Mariano Campoy Quiles. From colour-on-demand organic solar cells to solar thermoelectrics. Energy Mining in the 21st century. ICN2. 2019.
96 **Congress.** Mariano Campoy Quiles; Sebastian Reparaz; Isabel Alonso; Minhua Kong. Thermoelectric and Optical Properties of PEDOT:PSS thin films. 12th International Symposium on flexible organic electronics (ISFOE19). 2019. Greece.
97 **Congress.** Mariano Campoy Quiles. Finding the needle in the haystack: High-throughput photovoltaic materials screening. KAUST Research Conference: 3rd Generation photovoltaic technologies and beyond. KAUST Solar Center. 2019. Saudi Arabia.

### 1.2.2. Transfer and exchange of knowledge and professional activity

1 **Patent of invention**. METHOD FOR OBTAINMENT OF MICRONS THICK, METER LONG CNTS BUCKYPAPER AND THEIR USES IN THERMOELECTRICS AND AS A CURRENT COLLECTOR OF A BATTERY Reg 13/12/2023

2 **Patent of invention**. Device and method for thermal diffusivity analysis Reg 05/05/2023
3 **Patent of invention**. LIGHTING DEVICE AND SPECTRAL MODULATOR Reg 23/05/2022

4 **Patent of invention**. Equipo y método para la obtención del tensor de conductividad térmica en materiales isotrópicos y anisótropos Reg 01/09/2021
5 **Patent of invention**. Method for providing a structural and/or a compositional modification in a molecular semiconductor target film Reg 15/06/2020 Operating licences. EU patent.

**Actividad de carácter profesional**

**Profesor de Investigación de OPIS:** Consejo Superior de Investigaciones Científicas. 2023- actual.
2 **Investigador Científico de OPIS:** Consejo Superior de Investigaciones Científicas. 01/08/2018.
3 **Coordinador de la subarea de Materiales para la Energía y Medioambiente:** Agencia Estatal de Investigación. 01/04/2019.

**Narrative explanation of the contribution**

Funciones desempeñadas

Coordinator of the subarea of materials for energy and environment -Gestionar las convocatorias del Plan Estatal, Infraestructuras, Ramón y Cajal, Juan de la Cierva, Doctorados Industriales, Torres Quevedo, convocatorias autonómicas (principalmente de Euskadi y Comunidad Valenciana), etc. -Asignación de evaluadores y formación de comisiones -Presidir las comisiones asociadas a las convocatorias -Redacción de informes finales - Seguimiento de proyectos y tribunal en jornadas de seguimiento

4 **Científico titular de OPIS:** Instituto de Ciencia de los Materiales de Barcelona. 01/08/2012.
5 **Contratado Ramón y Cajal:** Instituto de Ciencia de los Materiales de Barcelona. 01/12/2009.
6 **Contratado JAE:** Instituto de Ciencia de los Materiales de Barcelona. 01/09/2008.
7 **Japan Society for the Promotion of Science Fellow:** Japan Advanced Institute of Science and Technology. 01/11/2007.
8 **Research Associate:** Imperial College London. 01/04/2005.

## 3. LEADERSHIP

### 3.2. SUPERVISION OF DOCTORAL THESES AND MASTER'S THESES

1 **Doctoral thesis:** PhD-Effect of Doping and Molecular Weight on the Thermal Conductivity of Conjugated Polymers for Thermoelectrics. 30/10/2024.
2 **Doctoral thesis:** Phd-Towards organic multi-junction RAINBOW solar cells. 24/10/2024.
3 **Doctoral thesis:** PhD-Combinatorial and Machine learning screening of multicomponent organic photovoltaics. 15/12/2023.
4 **Doctoral thesis:** PhD-Structure-processing-performance nexus of solution processed organic thin films. 22/07/2022.
5 **Doctoral thesis:** PhD-Enhancing light harvesting in organic solar cells using photonic structures. 15/06/2022.
6 **Doctoral thesis:** PhD- Hybrid PV-TE devices based on organic semiconductors. 15/12/2021.
7 **Doctoral thesis:** PhD- IMPROVING THE PERFORMANCE OF ORGANIC THERMOELECTRICS. 26/03/2021.
8 **Doctoral thesis:** PhD-Development of organic solar cells by combinatorial methods. 19/10/2020.
9 **End of course project:** TFG-PREPARATION AND THERMOELECTRIC CHARACTERIZATION OF FILMS OF ALIGNED CARBON NANOTUBES. 01/07/2020.
10 **:** TFM-In plane structured organic semiconductor blends: a new approach for spectral splitting photovoltaics. 29/06/2020.
11 **Doctoral thesis:** PhD-On the upscaling of organic solar cells based on non-fullerene acceptors. 19/06/2020.

12 **Doctoral thesis:** PhD-Understanding the temperature and pressure dependence of the optoelectronic and structural properties of FAxMA1-xPbI3 perovskite solid solutions. 14/04/2020.
13 **:** TFG-Development of a spray coater for up scaling carbon nanotube based thermoelectric generators. 03/07/2019.
14 **End of course project:** TFG-On the role of processing to improve thermoelectric performance of carbon nanotubes. 28/06/2019.
15 **End of course project:** POLYMER DONOR-POLYMER ACCEPTOR BULK HETEROJUNCTION SOLAR CELLS. 31/01/2019.

### 3.4. RECOGNITION AND RESPONSIBILITY IN SCIENTIFIC ORGANISATIONS AND SCIENTIFIC-TECHNICAL

1 **M-ERANET Strategic Expert Group:** ERA.NET. 07/11/2023-08/11/2023
2 **Presidente del tribunal 42 que evalúa 15 plazas de científico titular del CSIC:** Consejo Superior de Investigaciones Científicas. 02/11/2022-14/12/2022
3 **Miembro del tribunal 108 de plazas de cientifico titular del CSIC:** Consejo Superior de Investigaciones Científicas. 21/09/2020-25/09/2022
4 **Coordinador de la subarea de Materiales para Energía y Medioambiente:** Agencia Estatal de Investigación. 01/04/2019-31/08/2022
5 **Evaluation Committee/advisory board of the Helmholtz Institute Erlangen – Nürnberg for Renewable Energy (HI ERN):** Institute of Energy and Climate of the Forschungszentrum Jülich. 04/04/2022-05/04/2022
6 **Institute of Physics:**
7 **Real Sociedad Española de Física:**