

María Escudero Escribano

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Current position

ICREA Professor, Catalan Institute of Nanoscience and Nanotechnology **Sep 2022 – ...**

- Head of the NanoElectrocatalysis and Sustainable Chemistry Group.
- PI of ERC Consolidator Grant “ATOMISTIC”.
- Co-PI of Pioneer Center for Accelerating Power-to-X Materials Discovery (CAPeX): <https://capex.dtu.dk/>

Previous positions and research experience

Associate Professor, University of Copenhagen (Denmark) **Feb 2021 – Aug 2022**
Department of Chemistry, University of Copenhagen (UCPH)

- Head of the NanoElectrocatalysis and Sustainable Chemistry Group and co-PI of CHEAC, UCPH.

Tenure-track Assistant Professor, University of Copenhagen (Denmark) **Mar 2017 – Jan 2021**

- Head of the NanoElectrocatalysis and Sustainable Chemistry Group.

Postdoctoral Fellow, Stanford University (United States) **2015 – 2017**
Department of Chemical Engineering and SLAC National Accelerator Laboratory, Stanford University

- **Sapere Aude: Research Talent Postdoctoral Fellow.** Professor Thomas Jaramillo's group.

Postdoctoral Researcher, Technical University of Denmark, DTU (Denmark) **2012 – 2015**
Department of Physics, DTU

- Postdoctoral researcher. Professor Ib Chorkendorff's group.

Research stay, University of Ulm (Germany) **2011**

- Three-month research stay under the supervision of Professor Wolfgang Schmickler.

Research stay, Argonne National Laboratory, ANL (United States) **2009**

- Three-month research at the Materials Science Division at ANL, supervised by Dr. Nenad Markovic.

Education

Ph.D., Electrochemistry, Autonomous University of Madrid (Spain) **2007 – 2011**
Institute of Physical Chemistry 'Rocasolano', Spanish National Research Council

- Sobresaliente *cum laude*; *European Doctorate Mention*.
- Advisor: Dr. Ángel Cuesta.
- Title: “Electrocatalysis & surface nanostructuring: atomic ensemble effects & non-covalent interactions”.

B.S., Chemical Engineering, University of Extremadura (Spain) **2001 – 2006**

- Best academic record award of Chemical Engineering (University of Extremadura).

Academic achievements

- Author of **>70 scientific publications** in international refereed journals, including **Science**, **Nature Chemistry**, and **Nature Materials**.
- Co-inventor of three patents or patent applications.
- **H-index: 34; >6000 citations** ([google scholar](https://scholar.google.com/)). Researcher ID: D-1408-2011; ORCID: 0000-0002-6432-3015.
- Received a total of more than ~7-million-euro funding: **~4.6-million-euro funding in grants as a single PI** and ~2.4-million-euro as co-PI.

Academic awards and honours

- 2023** 'Extremeños de Hoy' Award.
- 2022** Elected Member of the Young Academy of Spain.
- 2022** ERC Consolidator Grant, European Research Council.
- 2021** Journal of Materials Chemistry Lectureship 2021, Royal Society of Chemistry (RSC). (*International level*).
- 2021** Hypatia Young Talent Award 2021 from elEconomista.
- 2021** Environment, Sustainability and Energy Division Horizon Prize: John Jeyes Award from the Royal Society of Chemistry for scientific and engineering breakthroughs in the electrochemical synthesis of hydrogen peroxide. (*International level*).
- 2019** Shortlisted for the Nature Research Award for Inspiring Science 2019 by Nature. (*International level*).
- 2019** RSEQ Young Researchers Award 2019, awarded by the Spanish Royal Society of Chemistry, RSEQ (*Angew. Chem. Int. Ed.* **2019**, *58*, 13625).
- 2019** Clara Immerwahr Award 2019 from UniSysCat (Unifying Systems in Catalysis Cluster of Excellence in Germany), awarded for her "outstanding results in catalysis research" (*Angew. Chem. Int. Ed.* **2019**, *58*, 2940). (*International level*).
- 2018** Princess of Girona Scientific Research Award 2018, awarded for the "scientific, technological and social impact of her work".
- 2018** Energy Technology Division Supramaniam Srinivasan Young Investigator Award 2018 from the Electrochemical Society (ECS), awarded for her "innovative research on model electrodes for electrochemical energy conversion technologies".
- 2018** Hyundai Young Talent 2018 of "Fuera de Serie".
- 2017** Griess Lectureship Award from the Royal Society of Chemistry (RSC).
- 2017** SusChem Young Chemistry Researcher Award 2017, in the Postdoc category (Spanish Technology Platform for Sustainable Chemistry and RSEQ).
- 2017** CIDETEC Award 2016 in the category of "Young Researchers in Electrochemistry" (Electrochemistry Group of the RSEQ).
- 2017** Selected as one of the five finalists of the Gerhard Ertl Young Investigator Award 2017.
- 2016** European Young Chemist Award 2016 – Gold Medal (EuCheMS), awarded to researchers under 35 whose research in chemistry displays high level of excellence and distinction (*Angew. Chem. Int. Ed.* **2016**, *55*, 14903).
- 2016** ISE Travel Award for Young Electrochemists (International Society of Electrochemistry, ISE) to present my work at the 67th ISE Annual Meeting in The Hague (The Netherlands).
- 2015** AcademiaNet Elected Member – Excellent women academic portal, Swiss National Science Foundation; nominated by the Danish National Research Foundation.
- 2014** Travel Award from the Electrochemical Society (ECS) to present my work at the 226th ECS Meeting in Cancun (Mexico).
- 2013** Best PhD Thesis in the region of Madrid Award (RSEQ).
- 2013** National Award 'Pedro Sánchez': best PhD Thesis related to Hydrogen Energy and Fuel Cells (Spanish Hydrogen Association and Spanish Association of Fuel Cells).
- 2012** Extraordinary PhD Award (Autónoma University of Madrid).
- 2011** SusChem Young Chemistry Researcher Award 2011, in the Predoc category (Spanish Technology Platform for Sustainable Chemistry and RSEQ).
- 2011** Travel Grant from the Group of Electrochemistry of the RSEQ to attend the 62st ISE Annual Meeting in Niigata (Japan).

Selected recent grants as a single PI

- 2023-2028** **ERC Consolidator Grant 2021 (European Research Council).** *'Atomic-scale tailored materials for electrochemical methane activation and production of valuable chemicals (ATOMISTIC).'* Awarded amount: 2 M€
- 2024-2027** **Proyecto de Generación del Conocimiento (Ministry of Science, Innovation and Universities, Spain).** *'Active Site Engineering of Functional Electrocatalysts for Renewable Energy Conversion into Green Fuels (ELECTROFUEL).'* Awarded amount: 206 000 €
- 2021-2023** **DFF Green Transition-Project 1** (Danish Council for Independent Research). Awarded amount: ~383 000 €.
- 2018-2023** **VILLUM Young Investigator Grant (Villum Foundation):** *'Atomic ensembles for clean energy and synthesis.'* Awarded amount: ~1.34 M€.
- 2019-2021** **DFF-Project 1:** *'High surface area support-free catalysts for oxygen electrocatalysis.'* (Danish Council for Independent Research, DFF). Awarded amount: ~300 000 €
- 2015-2017** **Sapere Aude: DFF-Research Talent.** Awarded amount: ~67 000 €
- 2015-2017** **DFF-Individual Postdoctoral Grant.** Awarded amount: ~286 000 €

Selected recent grants as a co-PI

- 2023-2026** **EIC Pathfinder Challenges Project (European Innovation Council).** *'Integrated conversion of Nitrate and Carbonate streams (ICONIC).'* Total awarded amount: 3.96 M€; ICN2: ~430 000 €
- 2024-2026** **Projectes de recerca per la mitigació al canvi climàtic (Generalitat de Catalunya).** *'Towards Efficient Hydrogen Production with New Hybrid Electrocatalysts (HYDROCAT).'* Total awarded amount: 360 000 €; ICN2: ~120 000 €

Organisation of international meetings and seminars

- 2024/03** **MATSUS 2024 Spring Meeting,** Barcelona. Co-organiser of symposium: "Materials and interfaces for emerging electrocatalytic reactions".
- 2023/11** **MRS (Materials Research Society) Fall Meeting,** Boston (US). Co-organiser of Symposium EN07 "Emerging Electrocatalytic Materials and Devices for Clean Energy and Environmental Applications".
- 2023/09** **74th Annual Meeting of the International Society of Electrochemistry,** Lyon (France): Coordinator of Symposium "Operando and In Situ Characterisation of Electrochemical Interfaces" of the Physical Electrochemistry Division.
- 2022/10** **NanoGe Fall Meeting MATSUS 2022,** Barcelona: General organiser.
- 2021/10** **NanoGe Fall Meeting 2021** (online): Co-organiser of Symposium "Solar Fuel: In-situ and operando characterization of electrified interfaces".
- 2020/11** **Annual Meeting of the Danish Electrochemical Society:** Coordinator and main organiser.
- 2019/11** **Annual Meeting of the Danish Electrochemical Society:** Coordinator and main organiser.
- 2019/05** **Visit and lecture of 2018 Chemistry Nobel Laureate Frances H. Arnold** (Professor at Caltech) **at the University of Copenhagen:** Organiser and host.
- 2019/05** **Mini-symposium in Electrocatalysis at the University of Copenhagen:** Organiser.
- 2018/11** **Annual Meeting of the Danish Electrochemical Society:** Co-organiser.

2018/09 **69th Annual Meeting of the International Society of Electrochemistry**, Bologna (Italy): Co-organiser of Symposium “Physical and Interfacial Electrochemistry” of the Physical Electrochemistry Division.

Selected recent invited lectures

- 2024/12** **Keynote lecture, NOW CHAINS 2024** (Annual Dutch Chemistry Conference), Eindhoven (Netherlands).
- 2024/09** **Invited lecture, LightChEC Summer School 2024**, Aegerisee (Switzerland).
- 2024/08** **Invited lecture, SurfCat Summer School 2024**, Kobæk Strand (Denmark).
- 2024/05** **Invited lecture, 245th Electrochemical Society (ECS) Meeting**, San Francisco (US).
- 2023/09** **Keynote lecture, Annual Meeting of the Division of Electrochemistry of the Italian Chemical Society**, Cefalù (Italy).
- 2023/09** **Invited seminar**, Department of Chemistry and Chemical Engineering, **Eindhoven University of Technology**, Eindhoven (Netherlands).
- 2023/09** **Invited lecture, 74th Annual Meeting of the International Society of Electrochemistry (ISE)**, Lyon (France)
- 2023/08** **Invited lecture**, Fall Meeting of the **American Chemical Society (ACS)**, San Francisco (US).
- 2023/07** **Keynote lecture, 16th International conference on materials chemistry (MC16), Royal Society of Chemistry (RSC)**, Dublin (Ireland).
- 2023/03** **Invited lecture, Materials for Sustainable Development Conference (MATSUS23)**, Electrocatalysis for sustainable fuels and chemicals symposium, Valencia (Spain).
- 2023/01** **Invited lecture**, Santo Tomás de Aquino ceremony, **University of Extremadura** (Spain).
- 2023/01** **Invited seminar, Department of Physics, Technical University of Denmark** (Denmark).
- 2022/11** **The 103rd ICREA Colloquium ‘Renewable fuels: from science to technology and beyond’**, Barcelona (Spain).
- 2022/11** **Keynote lecture, Institute of Advanced Materials (INAM) Annual Symposium**, Castellón (Spain).
- 2022/10** **Invited lecture, 90th Anniversary of the “Rockefeller” Physical Chemistry Institute, Institute of Physical Chemistry “Rocasolano” (CSIC)**, Madrid (Spain).
- 2022/09** **Keynote lecture (online), 73rd Annual Meeting of the International Society of Electrochemistry (ISE)**
- 2022/09** **Keynote lecture, International Symposium on Activation of Dioxide & Homogeneous Oxidation Catalysis**, Girona (Spain).
- 2022/07** **Plenary lecture, Annual Meeting of the Electrochemistry Group of the Spanish Royal Society of Chemistry**, Santander (Spain).
- 2022/06** **Invited lecture, Biennial Meeting of the Spanish Royal Society of Chemistry**, Granada (Spain)
- 2022/06** **Invited lecture, DIPC School and Workshop on Photo and ElectroCatalysis at the Atomic Scale (PECAS)**, San Sebastián-Donostia (Spain).
- 2022/06** **Invited lecture, 241st Meeting of the Electrochemical Society (ECS)**, Vancouver (Canada).
- 2022/05** **Keynote lecture, The Netherlands Catalysis and Chemistry Conference (NCCC) 2022** (Netherlands).
- 2022/03** **Invited lecture, Spring Meeting of the American Chemical Society (ACS)**, San Diego (US).

- 2022/03** Invited seminar, **SUNCAT Center for Interface Science and Catalysis**, Stanford University and SLAC National Accelerator Laboratory (US).
- 2022/03** Invited talk (online), **Centre for Molecular Water Science**, Research Course 'Water in Energy Research and Technology', **DESY Synchrotron** (Germany).
- 2022/02** Invited seminar (online), **Virginia Energy and Catalysis Club**, **Virginia University** (US).
- 2022/02** Invited seminar (online), **McMaster University** (Canada).
- 2021/12** Invited talk (online), **Chemistry as Innovative Science (CHAINS) Conference 2021** (Annual Dutch Chemistry Conference).
- 2021/12** Invited **RICH seminar (online)**, **Khalifa University**, Abu Dhabi (United Arab Emirates).
- 2021/11** Invited seminar, **Catalan Institute of Nanoscience and Nanotechnology (ICN2)**, Barcelona (Spain).
- 2021/11** Invited talk (online), **Lorentz Center workshop 'Electrifying Chemistry: from fundamentals to industrial applications'**, Leiden University (Netherlands).
- 2021/11** Invited talk, **nanoGe International Conference on Frontiers in Electrocatalytic Transformations (INTERECT)**, Valencia (Spain).
- 2021/11** Plenary lecture, **IV edition of research contest 'Brain wars: the future is in your hands'**, **Spanish Royal Society of Chemistry**.
- 2021/08** Invited talk, **72nd Annual Meeting of the International Society of Electrochemistry (ISE)**.
- 2021/07** Invited talk, **41st Meeting of the Electrochemistry Group of the Spanish Royal Society of Chemistry and 1st French-Spanish Workshop on Electrochemistry**.
- 2021/07** Invited seminar, **Catalan Institute of Nanoscience and Nanotechnology, ICN2** Barcelona (Spain).
- 2021/06** Invited online seminar, **Eindhoven Institute for Renewable Energy Systems (EIRES)**, TU Eindhoven.
- 2021/05** Plenary lecture, **X Doctoral Workshop of the PhD Program in Chemistry, Autonomous University of Barcelona** (Spain).
- 2021/05** Invited talk, "**Jornada Científica de Jóvenes de la Red Sensores y Biosensores Electroquímicos (Electrobionet)**".
- 2021/04** Invited talk, **2021 Spring Meeting of the Materials Research Society (MRS)**.
- 2021/03** Keynote lecture, **ELCOREL International Conference on Electrocatalysis for Renewable Energy** (online).
- 2021/02** Invited talk, **Small Chem International Online Conference**.
- 2021/02** Invited talk, online conference "**Il Fronteiras em Electroquímica e Electroanalítica**" (Brazil).
- 2021/02** Invited online seminar, **ETH Zurich** (Switzerland).
- 2021/02** Invited online seminar, **University of Birmingham** (UK).
- 2021/01** Invited online seminar, **Electrochemical Society (ECS) Monterrey Student Chapter**.
- 2021/01** Invited webinar, **The Electrochemical Society (ECS)**.
- 2020/12** Invited talk, **Chemistry as Innovative Science (CHAINS) Conference 2020** (Annual Dutch Chemistry Conference; it took place online).
- 2020/12** Invited online seminar, **Swedish Consortium for Artificial Photosynthesis** (Sweden).
- 2020/11** Invited online seminar, **Massachusetts Institute of Technology** (US).
- 2020/10** Invited talk, online workshop "**Aplicaciones Medioambientales y Energéticas de la Tecnología Electroquímica**".
- 2020/10** Invited webinar, **Catalysis Theory Center** at DTU.

- 2020/09 **Invited speaker, 1st ChemPhysChem Virtual Symposium “CO₂ reduction”.** Video: <https://www.youtube.com/watch?v=E96JrY8BBW0>
- 2020/09 **Invited webinar, American Chemical Society (ACS).** Video: <https://www.acs.org/content/acs/en/acs-webinars/spanish/electroquimica.html>
- 2020/06 **Invited speaker, NanoGe online conference “Structure-function relationships in CO₂ electrocatalysis”**
- 2019/11 **Plenary speaker, XVI Simposium of Young Chemistry Researchers of the RSEQ,** Valencia (Spain).
- 2019/10 **Invited seminar, Fritz Haber Institute (Max Planck Society),** Berlin (Germany).
- 2019/09 **Invited speaker, Symposium “Insights into Gas Diffusion Electrodes: From Fundamentals to Industrial Applications”,** Magdeburg (Germany).
- 2019/08 **Invited seminar, Lawrence Berkeley National Laboratory,** Berkeley (US).
- 2019/07 **Plenary lecture, 1st Severo Ochoa workshop on energy storage and harvesting “Energy mining in the 21st century”,** Barcelona (Spain).
- 2019/06 **Invited seminar, Institute of Chemical Research of Catalonia (ICIQ),** Tarragona (Spain).
- 2019/06 **Invited seminar, University of Córdoba,** Córdoba (Spain).
- 2019/06 **Invited Keynote lecture, International workshop “Materials for today’s energy challenges”,** Padova (Italy).
- 2019/05 **Invited Keynote lecture, Clara Immerwahr Award ceremony (as Clara Immerwahr Awardee 2019),** Technical University of Berlin, Berlin (Germany).
- 2019/04 **Invited speaker, Materials for Clean Energy Conference,** London (UK).
- 2019/04 **Invited speaker, Spring 2019 ACS Meeting, Symposium: “Frontiers in Catalysis for Energy and Sustainability” (only invited speakers),** Orlando (US).
- 2018/10 **Invited speaker, 680th WE Heraeus Seminar on “Materials Development for Automotive Propulsion”,** Bad Honnef (Germany).
- 2018/08 **Invited Plenary lecture** at the European Young Chemist Award (EYCA) finalists’ session (as the recipient of the EYCA 2016), **7th EuChemS Chemistry Congress,** Liverpool (UK).
- 2018/07 **Invited seminar, Eindhoven University of Technology,** Department of Chemical Engineering and Chemistry, Eindhoven (Netherlands).
- 2018/06 **Invited seminar, University of Cádiz,** Department of Chemistry, Cádiz (Spain).
- 2018/05 **Invited lecture, Southampton Electrochemistry Conference 2018,** University of Southampton (UK).
- 2018/05 **Keynote lecture, 233rd ECS Meeting** (Electrochemical Society, ECS), Seattle (US).
- 2018/03 **Invited seminar, Stanford University, SUNCAT seminar,** Department of Chemical Engineering, Stanford (US).
- 2017/11 **Griess Lectureship Award lectures (awarded and invited by the Royal Society of Chemistry), Universities of Nottingham, Leicester, Loughborough and Derby (UK):** one day at each University during the Chemistry week in the UK.
- 2017/11 **Plenary speaker, Annual Meeting of the Danish Electrochemical Society,** Lyngby (Denmark).
- 2017/11 **Invited speaker, XIV Simposium of Young Chemistry Researchers of the Spanish Royal Society of Chemistry (RSEQ),** Badajoz (Spain).
- 2017/08 **Invited speaker, XXVI International Materials Research Congress** (Materials Research Society, MRS), Cancun (Mexico).
- 2017/07 **Invited speaker, XXXVIII Meeting of the Electrochemistry Group of the Spanish Royal Society of Chemistry (RSEQ),** Vitoria (Spain).

- 2017/04 **Invited speaker**, 9th Meeting “From the witches’ cauldrons in materials science”, Goslar (Germany).
- 2017/03 **Invited speaker**, ‘Gerhard Ertl Young Investigator’ finalists’ competition session at the **DPG Spring Meeting**, Dresden (Germany).
- 2017/01 **Invited seminar**, **University of California Berkeley, Lawrence Berkeley National Laboratory**, Berkeley (US).
- 2016/05 **Invited seminar**, **Stanford University, SUNCAT seminar**, Department of Chemical Engineering, Stanford (US).
- 2015/05 **Invited seminar**, **Stanford University**, Department of Materials Science and Engineering, Stanford (US).
- 2015/04 **Invited seminar**, **Massachusetts Institute of Technology (MIT)**, Department of Mechanical Engineering, Cambridge (US).
- 2014/03 **Invited Keynote Lecture**, **European Hydrogen Energy Conference 2014**, Seville (Spain)
- 2011/11 **Invited speaker**, **VIII Simposium of Young Chemistry Researchers of the RSEQ**, Malaga (Spain).

Selected invited outreach activities

- 2024/01 **Dialogue** ‘From Frontier Research to Knowledge: BIST Community ERC Grants’, **BIST Forum 2024** (Barcelona Institute of Science and Technology), Barcelona (Spain).
- 2023/02 **Invited outreach talk** ‘Referentes Fundación Princesa de Girona’ for young students. Title: ‘Futuro, ciencia y sostenibilidad’, Espacio Joven Fundación Ibercaja, Zaragoza (Spain).
- 2021/07 **Dialogue with Nobel laureate Frances Arnold**, at the **Princess of Girona Foundation Award Ceremony**, Barcelona (Spain): <https://www.youtube.com/watch?v=TiAu1NABzUo>
- 2020/04 ‘Futuro, ciencia y sostenibilidad’ online outreach talk for young people in Spain, organised by the Princess of Girona Foundation.
- 2019/12 ‘Investigación y Química’ at ‘*El País con tu futuro 2019*’ organised by ‘El País’ (Spanish newspaper) for ca. one thousand secondary school students, Madrid (Spain).

Publications in international scientific journals

* **Corresponding author**

2024

73. B.J.V. Davies, **M. Escudero-Escribano***, “Determining selectivity in electrocatalytic synthesis reactions” (2024), *under review*.
72. M.P. Salinas-Quezada, P. Sebastián-Pascual, I. Chorkendorff, K. Biswas, J. Rossmeisl, **M. Escudero-Escribano***, “Assessing the active surface phase on extended high-entropy alloy electrocatalysts at different pHs” (2024), *under review*.
71. V. Pascual-Llorens, A. Serra-Ramos, P. Mazaira-Couce, **M. Escudero-Escribano**, P. Sebastián-Pascual, “Electrochemical surface nanostructuring of copper using fluoride and chloride” (2024), ***ChemElectroChem***, DOI: 10.1002/celec.202400414.
70. M.P. Salinas-Quezada, J.K. Pedersen, P. Sebastián-Pascual, I. Chorkendorff, K. Biswas, J. Rossmeisl, **M. Escudero-Escribano***, “Toward understanding CO oxidation on high-entropy alloy electrocatalysts” (2024), ***EES Catalysis***, 2, 941.
69. E. Plaza-Mayoral, V. Okatenko, K.N. Dalby, H. Falsig, I. Chorkendorff, P. Sebastián-Pascual, **M. Escudero-Escribano***, “Composition effects of electrodeposited CuAg nanostructured electrocatalysts for CO₂ reduction” (2024), ***iScience***, 27, 109933.

68. E. Plaza-Mayoral, K.N. Dalby, H. Falsig, I. Chorkendorff, P. Sebastián-Pascual, **M. Escudero-Escribano***, "Preparation of tunable Cu-Ag nanostructures by electrodeposition in a deep eutectic solvent" (2024), *ChemElectroChem*, 11, e202400094.
67. P. Mazaira-Couce, T.K. Madsen, E. Plaza-Mayoral, H.H. Kristoffersen, I. Chorkendorff, K.N. Dalby, W. van der Stam, J. Rossmeisl, **M. Escudero-Escribano***, P. Sebastián-Pascual, "Tailoring the facet distribution on copper with chloride" (2024), *Chemical Science*, 15, 1714.

2023

66. F.B. Holde, P. Sebastián-Pascual, K.N. Dalby, E. Gómez, **M. Escudero-Escribano***, "Nanostructured Ir-based electrocatalysts for oxygen evolution prepared by galvanic displacement of Co and Ni" (2023) *Electrochimica Acta*, 467, 143058.

Invited to special issue: "**Electrochemistry-Powering a Healthier Planet**".

65. J. Quinson, T.M. Nielsen, **M. Escudero-Escribano**, K.M.Ø. Jensen, "Room temperature syntheses of surfactant-free gold nanoparticles: the benefits of mono-alcohols over polyols as reducing agents for electrocatalysis" (2023) *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 675, 131853.
64. J. Quinson, O. Aalling-Frederiksen, W. Dacayan, J. Bjerregaard, K. Jensen, M. Jorgensen, I. Kantor, D. Sorensen, L. Theil Kuhn, M. Johnson, **M. Escudero-Escribano**, S. Simonsen, K.M.Ø. Jensen, "Surfactant-free colloidal syntheses of gold-based nanomaterials in alkaline water and mono-alcohol mixtures" (2023) *Chemistry of Materials*, 35, 2173.
63. A.S. Petersen, K.D. Jensen, H. Wan, A. Bagger, I. Chorkendorff, I.E.L. Stephens, J. Rossmeisl, **M. Escudero-Escribano***, "Modelling anion poisoning during oxygen reduction on Pt near-surface alloys" (2023), *ACS Catalysis*, 13, 2735.

2022

62. A. Bagger, K.D. Jensen, M. Rashedi, R. Luo, J. Du, D. Zhang, I.J. Pereira, **M. Escudero-Escribano**, M. Arenz, J. Rossmeisl, "Correlations between experiments and simulations for formic acid oxidation" (2022), *Chemical Science*, 13, 13409.
61. E. Plaza-Mayoral, I.J. Pereira, K.N. Dalby, K.D. Jensen, I. Chorkendorff, H. Falsig, P. Sebastián-Pascual*, **M. Escudero-Escribano***, "Pd-Au nanostructured electrocatalysts with tunable compositions for formic acid oxidation" (2022), *ACS Applied Energy Materials*, 5, 10632.
60. I.E.L. Stephens, K. Chan, ..., **M. Escudero-Escribano**, ..., P. Sebastián-Pascual et al., "2022 roadmap on low-temperature electrochemical CO₂ reduction" (2022), *J Phys Energy*, 4, 042003.
59. Z. Lin*, **M. Escudero-Escribano***, J. Li*, "Recent progress and perspectives on single atom catalysts" (2022), *Journal of Materials Chemistry A*, 10, 5670. **Editorial**: themed collection 'Single-Atom Catalysis'.
58. M. Juelsholt, J. Quinson, E.T.S. Kjær, B. Wang, R. Pittkowski, S.R. Cooper, T.L. Kinnibrugh, S.B. Simonsen, L.T. Kuhn, **M. Escudero-Escribano**, K.M.Ø. Jensen, "Surfactant-free syntheses and pair distribution function analysis of osmium nanoparticles" (2022), *Beilstein Journal of Nanotechnology*, 13, 230.
57. K. Ehelebe, N. Schmitt, G. Sievers, A.W. Jensen, ..., K.J.J. Mayrhofer, B. Etzold, N. Hodnik, **M. Escudero-Escribano**, M. Arenz, S. Cherevko, "Benchmarking fuel cell electrocatalysts using gas diffusion electrodes: inter-lab comparison and best practices" (2022), *ACS Energy Letters*, 7, 816.
56. P. Sebastián-Pascual, Y. Shao-Horn, **M. Escudero-Escribano***, "Toward understanding the role of the electric double layer structure and electrolyte effects on well-defined interfaces for electrocatalysis" (2022), *Current Opinion in Electrochemistry*, 32, 100918.
Invited to the Special Issue "Electrocatalysis".

2021

55. M. Hatzell, **M. Escudero-Escribano***, J.R. Galán-Mascarós, "New strategies to tailor electrocatalytic properties" (2021), *ACS Energy Letters*, 6, 4413
Invited Energy Spotlight.

54. E. Plaza-Mayoral, P. Sebastián-Pascual, K.N. Dalby, K.D. Jensen, I. Chorkendorff, H. Falsig, **M. Escudero-Escribano***, "Preparation of high surface area Cu-Au bimetallic nanostructured materials by co-electrodeposition in a deep eutectic solvent" (2021), *Electrochimica Acta*, 896, 115446
Invited to the Special Issue "**S. Trasatti: Road map from fundamental to applied electrochemistry**"
53. P. Sebastián-Pascual, **M. Escudero-Escribano***, "Surface characterisation of Cu electrocatalysts by lead underpotential deposition" (2021), *Journal of Electroanalytical Chemistry*, 896, 115446
Invited to "Special Issue celebrating Prof. Juan Feliu's 70th birthday".
52. J.A. Arminio-Ravelo, **M. Escudero-Escribano***, "Strategies toward the sustainable electrochemical oxidation of methane to methanol" (2021), *Current Opinion in Green and Sustainable Chemistry*, 30, 100489.
Invited to the Special Issue "**Young Ideas in Green and Sustainable Catalysis (2022)**"
51. D. Escalera-López, K.D. Jensen, N.V. Rees, **M. Escudero-Escribano***, "Electrochemically decorated iridium electrodes with WS_{3-x} toward improved oxygen evolution electrocatalyst stability in acidic electrolytes" (2021), *Advanced Sustainable Systems*, 5, 2000284.
Invited to the Special Issue "**Sustainable Materials for Solar Energy Conversion and Storage**".
50. P. Sebastián-Pascual, A. Petersen, A. Bagger, J. Rossmeisl, **M. Escudero-Escribano***, "pH and anion effects on Cu-phosphate interfaces for CO electroreduction" (2021), *ACS Catalysis*, 11, 1128.
49. G.W. Sievers, A.W. Jensen, J. Quinson, A. Zana, F. Bizzotto, M. Oezaslan, J.J.K. Kirkensgaard, ..., J. Schäfer, K. Cépe, **M. Escudero-Escribano**, J. Rossmeisl, A. Quade, V. Brüser, M. Arenz, "Self-supported Pt-CoO networks combining high specific activity and high surface area for oxygen reduction" (2021), *Nature Materials*, 20, 208.
48. R.R. Rao, M. Tulodziecki, B. Han, M. Risch, A. Abakumov, Y. Yu, P. Karayaylali, M. Gauthier, **M. Escudero-Escribano**, Y. Orikasa, Y. Shao-Horn, "Reactivity with water and bulk ruthenium redox of lithium ruthenate in basic solutions" (2021), *Advanced Functional Materials*, 31, 2.

2020

47. O.A.H. Schreyer, J. Quinson, **M. Escudero-Escribano***, "Toward overcoming the challenges in the comparison of different Pd nano-catalysts: case study of the ethanol oxidation reaction" (2020), *Inorganics*, 8, 59.
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35. J.A. Arminio-Ravelo, A.W. Jensen, K.D. Jensen, J. Quinson, **M. Escudero-Escribano***, "Electrolyte effects on the electrocatalytic performance of iridium-based nanoparticles for oxygen evolution in rotating disc electrodes" (2019), *ChemPhysChem*, 20, 2956.
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8. A. Cuesta, G. Cabello, F. Hartl, **M. Escudero-Escribano**, C. Vaz-Domínguez, L. Kibler, C. Gutiérrez, M. Osawa, "Electrooxidation of formic acid on gold: an ATR-SEIRAS study of the role of adsorbed formate" (2013) *Catalysis Today*, 202, 79.
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6. **M. Escudero-Escribano**, G. J. Soldano, P. Quaino, W. Schmickler, M. E. Zoloff-Michoff, E. P. M. Leiva, A. Cuesta, "Cyanide-modified Pt(111): structure, stability and hydrogen adsorption" (2012) *Electrochimica Acta*, 82, 524.
5. **M. Escudero-Escribano**, M. E. Zoloff-Michoff, E. P. M. Leiva, N. M. Markovic, C. Gutiérrez, A. Cuesta, "Quantitative study of non-covalent interactions at the electrode-electrolyte interface using cyanide-modified Pt(111) electrodes" (2011) *ChemPhysChem*, 12, 2230.
4. D. Strmcnik, **M. Escudero-Escribano**, K. Kodama, V. R. Stamenkovic, A. Cuesta, N. M. Markovic, "Enhanced electrocatalysis of the oxygen reduction reaction based on patterning of platinum surfaces with cyanide" (2010) *Nature Chemistry*, 2, 880.
3. **M. Escudero**, J. F. Marco, A. Cuesta, "Surface decoration at the atomic scale using a molecular pattern" (2009), *Journal of Physical Chemistry C*, 113, 12340.
2. A. Cuesta, **M. Escudero**, B. Lanova, H. Baltruschat, "Cyclic voltammetry, FTIRS and DEMS study of the electrooxidation of carbon monoxide, formic acid and methanol on cyanide-modified Pt(111) electrodes" (2009) *Langmuir*, 25, 6500.
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Patents and patent applications

- I. E.L. Stephens, **M. Escudero-Escribano**, A. Verdaguer-Casadevall, P. Malacrida, U. Grønberg, B. P. Knudsen, A. K. Jepsen, J. Rossmeisl, I. Chorkendorff, "Platinum and palladium alloys suitable as fuel cell electrodes", WO 2014005599, published, 2014.

- I. E.L. Stephens, **M. Escudero-Escribano**, A. Verdaguer-Casadevall, P. Malacrida, U. Grønbjerg, J. Schiötz, J. Rossmeisl, I. Chorkendorff, "Platinum and palladium alloys suitable as fuel cell electrodes", WO 2014079462, published, **2014**.
- I. E.L. Stephens, A. Verdaguer-Casadevall, B. Wickman, P. Malacrida, S. Siahrostami, **M. Escudero-Escribano**, M. Karamad, J. Rossmeisl, I. Chorkendorff, "Catalysts for electrochemical synthesis of hydrogen peroxide", WO 2014174065, published, **2014**.

Supervision and mentoring

- **Currently supervising six postdoctoral/senior researchers** (Silvia Favero, Gabriel Floriano Costa, Camilo Mesa, Sanchayita Mukhopadhyay, Sebastián Murcia, and Pilar Sánchez-Peña) and **four PhD students** (Jaxiry Barroso-Martínez (2023-2027), Grega Venturini (2023-2027), Nathalie Hermans (2023-2027), and Gabriele Cioli (2024-2028)) at ICN2.
- **Finalised supervision of seven postdoctoral researchers, eight PhD students and over 10 MSc and BSc students** to completion.

Editorial activities

- 2024 – **Editorial Advisory Board Member of ACS Electrochemistry** (American Chemical Society, ACS)
- 2023 – **Associate Editor of PRX Energy** (American Physical Society, APS)
- 2023 – **Editorial Advisory Board Member of Journal of Physical Chemistry A/B/C** (ACS)
- 2023 – **Editorial Advisory Board Member of ChemPhysChem** (Chemistry Europe, Wiley)
- 2022 – **Editorial Board Member of PRX Energy** (APS)
- 2022 – **Editorial Advisory Board Member of ACS Catalysis** (ACS)
- 2022 – **Editorial Advisory Board Member of ACS Energy Letters** (ACS)
- 2022 **Guest Editor** of special issues for *Journal of Materials Chemistry A*, *Journal of Physics: Energy*, *iScience*, *Electrochemical Science Advances*, *Journal of the Electrochemical Society*
- 2021 – **Editorial Board Member of ChemElectroChem** (Chemistry Europe, Wiley)
- 2020 – 2023 **Editorial Board Member of Communications Chemistry** (Nature Research)
- 2020 – **Editorial Advisory Board Member of Advanced Energy and Sustainability Research** (Wiley)
- 2019 **Guest Editor** of a special issue for *ChemPhysChem*.
- 2018 – 2019 **Early Career Advisory Board Member of ACS Catalysis** (ACS)

Member of evaluation committees

- 2018-2024 **Member of 19 PhD evaluation committees** at Delft University of Technology, (Netherlands); Technical University of Denmark; University of Barcelona (Spain); University of Cantabria (Spain); Technical University of Berlin (Germany); Eindhoven Technical University, (Netherlands); University of Nova Gorica (Slovenia); Swiss Federal Institute of Technology Lausanne, EPFL (Switzerland); Collège de France; University of Cordoba (Spain); University of Alicante (Spain).

Memberships of scientific societies

- 2023-present: **International Society of Electrochemistry (ISE) Regional Representative for Spain**.
- 2023-present: **Member of the Royal Society of Chemistry (RSC)**.

- 2022-present: **Elected Member of the Young Academy of Spain.**
- 2021-2022: **International Society of Electrochemistry Regional Representative for Denmark.**
- 2018-2021: **Chair of the Danish Electrochemical Society.**
- 2017-2022: **Board Member** of the Danish Electrochemical Society.
- 2017-present: **Member of the American Chemical Society (ACS).** Member of the Divisions of Catalysis Science and Technology and Energy and Fuels since 2019.
- 2015-present: **Elected Member of AcademiaNet** – Expert Database for Outstanding Female Academics, nominated by the Danish National Research Foundation (only by nomination).
- 2014-present: **Member of the Electrochemical Society (ECS).**
- 2011-present: **Member of the Spanish Royal Society of Chemistry (RSEQ),** the Group of Electrochemistry of the RSEQ and the Group of Young Chemistry Researchers of the RSEQ.
- 2009-present: **Member of the International Society of Electrochemistry (ISE).**