María Escudero Escribano

Associate Professor
Department of Chemistry, Center for High Entropy Alloy Catalysis and Nanoscience Center
University of Copenhagen
Universitetsparken 5, 2100 Copenhagen (Denmark)
maria.escudero@chem.ku.dk

Current position

Associate Professor, University of Copenhagen (Denmark) **February 2021 – …**

Department of Chemistry, Center for High Entropy Alloy Catalysis, University of Copenhagen (UCPH)

- Leader of the NanoElectrocatalysis and Sustainable Chemistry Group.
- Teaching and supervision at B.Sc., M.Sc., Ph.D. and postdoc levels.

Research experience

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

Department of Chemistry, Center for High Entropy Alloy Catalysis, University of Copenhagen (UCPH)

- Leader of the NanoElectrocatalysis and Sustainable Chemistry Group.
- Teaching and supervision at B.Sc., M.Sc., Ph.D. and postdoc levels.

Postdoctoral Fellow, Stanford University (United States) ***2015 – 2017***

Department of Chemical Engineering and SLAC National Accelerator Laboratory, Stanford University

- ***Sapere Aude: Research Talent* Fellow**.
- Postdoctoral fellow at Professor Thomas Jaramillo's group at Stanford Chemical Engineering.

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

Department of Physics, DTU

- Postdoctoral researcher with Professors Ib Chorkendorff and Ifan Stephens.
- Teaching and supervision at B.Sc., M.Sc. and Ph.D. levels.

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

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

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

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

Education

PhD, Chemistry, Autonomous University of Madrid (Spain) ***2007 – 2011***

Institute of Physical Chemistry 'Rocasolano', Spanish National Research Council

- Sobresaliente *cum laude, Extraordinary Doctorate Award, European Doctorate* Mention.
- PhD Advisor: Dr. Ángel Cuesta; PhD Title: "Electrocatalysis and surface nanostructuring: atomic ensemble effects and non-covalent interactions".

Bachelor's degree, Chemical Engineering, University of Extremadura (Spain) ***2001 – 2006***

- Best academic record of Chemical Engineering at the University of Extremadura.

Academic achievements

- Author of **53 scientific publications** (24 as corresponding author) in international peer-reviewed journals, including *Science* (first and corresponding author), *Nature Chemistry, Nature Materials*, *JACS, Angewandte Chemie*, *ACS Energy Letters* and *ACS Catalysis*.
- Author of 2 publications under review and 12 manuscripts in preparation (to be submitted in 2021).
- **H-index: 25; ~2300 citations** in Web of Science (Escudero-Escribano, María; Researcher ID: D-1408-2011; ORCID: 0000-0002-6432-3015); **~2850 citations** in google scholar.
- Co-inventor of **three patents**.
- Received ~**2.4 million euro funding in grants as a single PI**.
- Presented several oral communications at international conferences, including **three invited Plenary lectures**, **five invited Keynote lectures** and **more than 25 invited talks**.
- Presented **more than 20 invited seminars at universities**, including Stanford University (US), Massachusetts Institute of Technology (US), the University of California Berkeley (US), Imperial College London (UK), Fritz Haber Institute of the Max Planck Society (Germany), TU Berlin (Germany) and ETH Zurich (Switzerland).

Academic awards and honours

2021	**Environment, Sustainability and Energy Division Horizon Prize: John Jeyes Award** from the **Royal Society of Chemistry** (RSC) for scientific and engineering breakthroughs in the electrochemical synthesis of hydrogen peroxide.
2019	Shortlisted for the **Nature Research Award for Inspiring Science 2019** by *Nature*. (*International*).
2019	**RSEQ Young Researchers Award 2019**, awarded by the Spanish Royal Society of Chemistry (RSEQ).
2019	**Clara Immerwahr Award 2019** from *UniSysCat* (Unifying Systems in Catalysis Cluster of Excellence in Germany), awarded for her "outstanding results in catalysis research" (highlighted in *Angew. Chem. Int. Ed*. **2019**, *58*, 2940). (*International*).
2018	**Princess of Girona Foundation Scientific Research Award 2018** (highest recognition for researchers under 35 in Spain), awarded for the "scientific, technological and social impact of her work in electrochemical energy conversion".
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. (*International*).
2018	Hyundai Young Talent 2018 of "Fuera de Serie".
2017	**Griess Lectureship Award** from the **Royal Society of Chemistry** (RSC). (*International*).
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. (*International*).
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 (highlighted in *Angew. Chem. Int. Ed.* **2016**, *55*, 14903). (*International*).

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, 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).

2007 Best academic record of Chemical Engineering (University of Extremadura).

Grants (as a single PI)

2018-2023 **VILLUM Young Investigator Grant** (Villum Foundation). Awarded amount: >1.34 million €.

2021-2023 **DFF Green Transition-Project 1** (Danish Council for Independent Research). Awarded amount: ~383 000 €.

2019-2021 **DFF-Project 1** (Danish Council for Independent Research). Awarded amount: ~300 000 €.

2015-2017 **Sapere Aude: DFF-Research Talent** Award (Danish Council for Independent Research). Awarded amount: ~67 000 €.

2015-2017 **DFF-Individual Postdoctoral Grant** (Danish Council for Independent Research). Awarded amount: ~286 000 €.

Organisation of international meetings and seminars

2021/10 NanoGe Fall Meeting: 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 Chemistry Nobel Laureate Frances H. Arnold 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 in Bologna (Italy): Co-organiser of Symposium "Physical and Interfacial Electrochemistry" (~2000 participants).

Selected invited lectures at international conferences and university seminars

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.
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 "II Fronteiras em Electroquímica e Electroanalitica".
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.
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 "CO_2 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 CO_2 electrocatalysis"
2019/11	Plenary speaker, XVI Symposium 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 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, 257th American Chemical Society (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).

2016/03 Invited seminar, University of Copenhagen, Department of Chemistry, Copenhagen (Denmark).

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 talks, dialogues and panels

2021/07 Dialogue with Nobel laureate Frances Arnold, at the Princess of Girona Foundation Award Ceremony 2020-2021, Barcelona (Spain): https://www.youtube.com/watch?v=TiAu1NABzUo

2020/12 Invited speaker, Knowledge for innovation summit. Session: "*The role of early career professionals in driving sustainable innovation*" (online).

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): https://www.youtube.com/watch?v=H4rgu3M4OPM

2019/04 'Conversión de energía renovable para un futuro sostenible', Conferencias de divulgación científica 'Energía y nuevos materiales para un futuro sostenible' at FUNDECYT-PCTEx, Badajoz (Spain).

Recent invited publications

In 2018-2021, I have published 15 invited papers for special issues including: Young Researchers in Green and Sustainable Catalysis of *Current Opinion in Green and Sustainable Chemistry* (2021), Emerging Investigators of *Journal of Materials Chemistry A* and *ChemComm* (2020), Young Researchers of *ChemCatChem* (2020), Women of Catalysis of *ChemCatChem* (2019), Young Scientists of *Journal of Physical Chemistry C* (2019) and Young Chemists of *Chemistry: a European Journal* (2018).

I am currently preparing invited perspectives/reviews for *Nature Catalysis*, *Chemical Society Reviews* (2022 Emerging Investigator Collection*)*, *ACS Catalysis*, *iScience*, and invited section for a Roadmap on CO2 Reduction for *Journal of Physics: Energy*, an invited article for *Nanoscale* (2022 Emerging Investigators) and an invited Energy Focus for *ACS Energy Letters.*

Publications in international peer reviewed journals

*** Corresponding author**

2021

53. P. Sebastián-Pascual, **M. Escudero-Escribano***, "Surface characterisation of Cu electrocatalysts by lead underpotential deposition" (2021), ***Journal of Electroanalytical Chemistry**, accepted*.

    Invited.

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**, accepted.* DOI: 10.1016/j.cogsc.2021.100489

    Invited to the ***Young Researchers in Green and Sustainable Catalysis*** Special Issue.

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**, accepted*. DOI: 10.1002/adsu.202000284

    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. DOI: 10.1021/acscatal.0c03998

49. G.W. Sievers, A.W. Jensen, J. Quinson, A. Zana, F. Bizzotto, M. Oezaslan, …, 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. DOI: 10.1038/s41563-020-0775-8

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” (2020), ***Advanced Functional Materials***, DOI: https://doi.org/10.1002/adfm.202002249

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***. DOI: 10.3390/inorganics8110059

46. P. Sebastián-Pascual, I. Jordão Pereira, **M. Escudero-Escribano***, “Tailored electrocatalysts by controlled electrochemical deposition and surface nanostructuring” (2020), ***Chemical Communications***, *56*, 13261. DOI: 10.1039/D0CC06099B

    Invited to the themed collection ***Emerging Investigators* 2020**.

45. P. Sebastián-Pascual, F. Sarabia, V. Climent, J. Feliu, **M. Escudero-Escribano***, “Elucidating the structure of the Cu-alkaline electrochemical interface with the laser-induced temperature jump technique” (2020), ***Journal of Physical Chemistry C**, 124*, 23153. DOI: 10.1021/acs.jpcc.0c07821

44. K.D. Jensen, A.F. Pedersen, E. Zamburlini, I.E.L. Stephens, I. Chorkendorff, **M. Escudero-Escribano***, “X-ray absorption spectroscopy investigations of platinum-gadolinium thin films for the oxygen reduction reaction” (2020), ***Catalysts***, *10*, 978. DOI: 10.3390/catal10090978

43. G.S. Harlow, E. Lundgen, **M. Escudero-Escribano***, “Recent advances in surface x-ray diffraction and their potential for determining structure-sensitivity relations in single-crystal electrocatalysis” (2020), ***Current Opinion in Electrochemistry***, *23*, 162. DOI: 10.1016/j.coelec.2020.08.005

    Invited for the Special Themed Issue **“*Electrocatalysis*”**.

42. J. Rossmeisl, K.D. Jensen, A.S. Petersen, L. Arnarson, A. Bagger, **M. Escudero-Escribano**, “Realistic cyclic voltammograms from ab initio simulations in alkaline and acidic electrolytes” (2020), ***Journal of Physical Chemistry C***, *124*, 20055. DOI: 10.1021/acs.jpcc.0c04367

41. H. Wan, A.W. Jensen, **M. Escudero-Escribano**, J. Rossmeisl, “Insights in the oxygen reduction reaction: from metallic electrocatalysts to diporphyrins” (2020), ***ACS Catalysis***, *10*, 5979.

40. J.A. Arminio-Ravelo, J. Quinson, M.A. Pedersen, J. Kirkensgaard, M. Arenz, **M. Escudero-Escribano***, “Synthesis of iridium nanocatalysts for water oxidation in acid: effect of the surfactant” (2020), ***ChemCatChem**, 12*, 1282.

    Invited to the **themed issue *“Young Researchers Series”***.

39. A.W. Jensen, G.W. Sievers, K.D. Jensen, J. Quinson, J.A. Arminio-Ravelo, V. Brüser, M. Arenz, **M. Escudero-Escribano***, “Self-supported nanostructured iridium-based networks as highly active electrocatalysts for oxygen evolution in acidic media” (2020), ***Journal of Materials Chemistry A*** (2020), *8*, 1066.

    Invited to the **themed collection *“Journal of Materials Chemistry A Emerging Investigators”***.

38. P. Sebastián-Pascual, **M. Escudero-Escribano***, “Addressing the interfacial properties for CO electroreduction on Cu with cyclic voltammetry” (2020), ***ACS Energy Letters***, *5*, 130.

2019

37. M. Saric, B.J.V. Davies, N.C. Schjødt, S. Dahl, P.G. Moses, **M. Escudero-Escribano**, M. Arenz, J. Rossmeisl, "Catalyst design criteria and fundamental limitations in the electrochemical synthesis of dimethyl carbonate" (2019), ***Green Chemistry***, *21*, 6200.

36. A.P. O'Mullane, **M. Escudero-Escribano***, I.E.L. Stephens, K. Krischer, "The role of electrocatalysis in a sustainable future: from renewable energy conversion and storage to emerging reactions" (2019), *ChemPhysChem*, *20*, 2900.

    Editorial: s*pecial issue "Electrocatalysis"*.

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.

    Invited to the **s*pecial issue "Electrocatalysis"*.**

34. A. Bagger, R.M. Arán-Ais, J.H. Stenlid, E. Campos dos Santos, L. Arnarson, K.D. Jensen, **M. Escudero-Escribano**, B. Roldán-Cuenya, J. Rossmeisl, "Ab initio cyclic voltammetry on Cu single-crystals in acidic, neutral and alkaline solutions" (2019), ***ChemPhysChem**, 20*, 3096.

33. P. Sebastián-Pascual, S. Mezzavilla, I.E.L. Stephens, **M. Escudero-Escribano***, "Structure-sensitivity and electrolyte effects in CO_2 electroreduction: from model studies to applications" (2019) ***ChemCatChem**, 11*, 3626.

    Invited to the ***special issue "Women of Catalysis"***.

32. B.J.V. Davies, M. Arenz, J. Rossmeisl, **M. Escudero-Escribano***, "Electrochemical synthesis of high-value chemicals: detection of key reaction intermediates and products combining gas chromatography-mass spectrometry and *in-situ* infrared spectroscopy" (2019) ***Journal of Physical Chemistry C**, 123,* 12762.

    Invited to the ***special issue "Young Scientists".***

31. G. Sievers, A.W. Jensen, V. Brüser, M. Arenz, **M. Escudero-Escribano***, "Sputtered Pt thin films for oxygen reduction in gas diffusion electrodes – a model system for studies under realistic conditions" (2019) ***Surfaces**, 2,* 336.

    Invited to the ***special issue "Electrochemical Surface Science"***.

30. B.J.V. Davies, M. Saric, M.C. Figueiredo, N.C. Schjødt, S. Dahl, P.G. Moses, **M. Escudero-Escribano***, M. Arenz, J. Rossmeisl, "Electrochemically generated copper carbonyl for selective dimethyl carbonate synthesis" (2019), ***ACS Catalysis***, *9*, 859.

2018

29. **M. Escudero-Escribano***, A.F. Pedersen, E.T. Ulrikkeholm, K.D. Jensen, M.H. Hansen, J. Rossmeisl, I.E.L. Stephens, I. Chorkendorff, "Active site formation and stability of Gd/Pt(111) electrocatalysts for oxygen reduction: an in situ grazing incidence X-ray diffraction study" (2018), ***Chemistry: A European Journal***, *24*, 12280.

    Frontispiece and Hot Paper. Invited to the Young Chemists Special Issue 2018.

28. **M. Escudero-Escribano***, K.D. Jensen, A.W. Jensen "Recent advances in bimetallic electrocatalysts for oxygen reduction: design principles, structure-function relations and active phase elucidation" (2018), ***Current Opinion in Electrochemistry***, *8*, 135.

    Invited for the Special Themed Issue **"*Surface Electrochemistry*"**.

27. D. Higgins, M. Wette, B. Gibbons, S. Siahrostami, C. Hahn, **M. Escudero-Escribano**, M. Garcia-Melchor, Z. Ulisses, R. Davis, A. Mehta, B. Clemens, J. Nørskov, T.F. Jaramillo, "Copper silver thin films as model phase segregated electrocatalyst for oxygen reduction in alkaline electrolytes" (2018), ***ACS Applied Energy Materials**, 1,* 1990.

26. M. Inaba, A.W. Jensen, G. Sievers, **M. Escudero-Escribano**, A. Zana, M. Arenz, "Benchmarking high surface area electrocatalysts in a gas diffusion electrode: measurement of the the oxygen reduction activities under realistic conditions" (2018), ***Energy and Environmental Science***, *11*, 988.

25. K.D. Jensen, J. Tymoczko, A.S. Bandarenka, I. Chorkendroff, **M. Escudero-Escribano***, I.E.L. Stephens, "Elucidation of the oxygen reduction volcano in alkaline media using a copper-platinum(111) alloy" (2018), ***Angewandte Chemie International Edition***, *57*, 2800.

Frontispiece and **VIP. Research highlights** in ***Nature Reviews Chemistry*** and ***Nature Catalysis*.**

24. **M. Escudero-Escribano***, A.F. Pedersen, E. Paoli, R. Frydendal, D. Friebel, P. Malacrida, J. Rossmeisl, I.E.L. Stephens, I. Chorkendorff, "Importance of surface IrO_x in stabilizing RuO_2 for oxygen evolution" (2018), ***Journal of Physical Chemistry B***, *122*, 947.

23. A.F. Pedersen, **M. Escudero-Escribano**, B. Sebok, A. Bodin, E. Paoli, R. Frydendal, D. Friebel, I.E.L. Stephens, J. Rossmeisl, I. Chorkendorff, A. Nilsson, "Operando XAS study of the surface oxidation state on a monolayer IrO_x on RuO_x and Ru oxide based nanoparticles for oxygen evolution in acidic media" (2018), ***Journal of Physical Chemistry B***, *122*, 878.

2017

22. A.L. Strickler, **M. Escudero-Escribano**, T.F. Jaramillo, "Core-shell Au@metal-oxide nanoparticulate electrocatalysts for enhanced oxygen evolution" (2017), ***Nano Letters***, *17*, 6040.

21. E. Zamburlini, K.D. Jensen, I.E.L. Stephens, I. Chorkendorff, **M. Escudero-Escribano***, "Benchmarking Pt and Pt-lanthanide sputtered thin films for oxygen electroreduction: fabrication and electrochemical characterisation" (2017), ***Electrochimica Acta***, *247*, 708.

20. **M. Escudero-Escribano**, U. Grønbjerg, A. Velazquez-Palenzuela, P. Malacrida, J. Rossmeisl, I. Chorkendorff, I.E.L. Stephens, J. Schiøtz, "New platinum alloy catalysts for oxygen electroreduction based on abundant alkali earth metals" (2017), ***Electrocatalysis***, *8*, 594.

19. N. Lindahl, E. Zamburlini, L. Feng, H. Gronbeck, **M. Escudero-Escribano**, I.E.L. Stephens, I. Chorkendorff, C. Langhammer, B. Wickman, "High specific and mass activity for the oxygen reduction reaction for thin film catalysts of sputtered Pt_3Y" (2017), ***Advanced Materials Interfaces***, *4*, 1700311.

2016

18. A.F. Pedersen, E.T. Ulrikkeholm, **M. Escudero-Escribano**, T.P. Johansson, P. Malacrida, C.M. Pedersen, M.H. Hansen, K.D. Jensen, J. Rossmeisl, D. Friebel, A. Nilsson, I. Chorkendorff, I.E.L. Stephens, "Probing the nanoscale structure of the catalytically active overlayer on Pt alloys with rare earths" (2016) ***Nano Energy***, *29*, 249.

17. **M. Escudero-Escribano**, C. Wildi, J.A. Mwanda, A. Cuesta, "Metallization of cyanide-modified Pt(111) electrodes with copper" (2016) ***Journal of Solid State Electrochemistry***, *20*, 1087.

16. E.T. Ulrikkeholm, A.F. Pedersen, U.G. Vej-Hansen, **M. Escudero-Escribano**, I.E.L. Stephens, D. Friebel, A. Mehta, J. Schiøtz, R.K. Feidenhansl', A. Nilsson, I. Chorkendorff, "Pt_xGd alloy formation on Pt(111): preparation and structural characterization" (2016) ***Surface Science***, *652*, 114.

15. **M. Escudero-Escribano***, P. Malacrida, M.H. Hansen, U.G. Vej-Hansen, A. Velazquez-Valenzuela, V. Tripkovic, J. Schiøtz, J. Rossmeisl, I.E.L. Stephens, I. Chorkendorff, "Tuning the activity of Pt alloy electrocatalysts by means of the lanthanide contraction" (2016) ***Science***, *352*, 73.

"**Highly cited paper**" ("**top 1% in the field of Chemistry**", Web of Science).

2015

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13. A. Velázquez-Valenzuela, F. Masini, A.F. Pedersen, **M. Escudero-Escribano**, D. Deiana, P. Malacrida, T.W. Hansen, D. Friebel, A. Nilsson, I.E.L. Stephens, I. Chorkendorff, "The enhanced

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10. S. Siahrostami, A. Verdaguer-Casadevall, M. Karamad, D. Deiana, P. Malacrida, B. Wickman, **M. Escudero-Escribano**, E. A. Paoli, R. Frydendal, T. W. Hansen, I. Chorkendorff, I.E.L. Stephens, J. Rossmeisl, "Enabling direct H_2O_2 production via rational electrocatalyst design" (2013) ***Nature Materials***, *12*, 1137.
9. C. Vaz-Domínguez, **M. Escudero-Escribano**, A. Cuesta, F. Prieto-Dapena, C. Cerrillos, M. Rueda, "Electrochemical STM study of the adsorption of adenine on Au(111) electrodes" (2013) ***Electrochemical Communications***, *35*, 61.
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7. **M. Escudero-Escribano**, A. Verdaguer-Casadevall, P. Malacrida, U. Grønbjerg, B. P. Knudsen, A. K. Jepsen, J. Rossmeisl, I.E.L. Stephens, I. Chorkendorff, "Pt_5Gd as a highly active and stable catalyst for oxygen electroreduction" (2012) ***Journal of the American Chemical Society***, *134*, 16476.
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.

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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.

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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.

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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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1. A. Cuesta, **M. Escudero**, "Electrochemical and FTIRS characterisation of NO adlayers on cyanide-modified-Pt(111) electrodes: The mechanism of nitric oxide electroreduction on Pt" (2008), ***Physical Chemistry Chemical Physics***, *10*, 3628.

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- E. Plaza-Mayoral, P. Sebastián-Pascual, K.N. Dalby, K.D. Jensen, I. Chorkendorff, H. Falsig, **M. Escudero-Escribano***, "Green preparation of high surface area Cu-Au bimetallic nanostructured materials by co-electrodeposition in a deep-eutectic solvent" (2021), *ChemRxiv*, DOI: 10.26434/chemrxiv.14312087.v1
- P. Sebastián-Pascual, A. Petersen, A. Bagger, J. Rossmeisl, **M. Escudero-Escribano***, "pH and anion effects on Cu-phosphate interfaces for CO electroreduction" (2020), *ChemRxiv*, DOI: 10.26434/chemrxiv.12745193

Patents

- I. E.L. Stephens, **M. Escudero-Escribano**, A. Verdaguer-Casadevall, P. Malacrida, U. Grønbjerg, 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. Schiotz, 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 five postdoctoral researchers**: Bethan J.V. Davies, Kim D. Jensen, Anders W. Jensen, Jonathan Quinson and Paula Sebastián-Pascual.
- Currently **supervising three PhD students (main supervisor)**: José Alejandro Arminio-Ravelo (2018-2021), Inês Jordão Pereira (2018-2021) and María Paula Salinas-Quezada (2021-2024).
- Finalised **supervision of two postdoctoral researchers**: Marta Figueiredo (2017) and Gary S. Harlow (2021).
- Finalised **(co)supervision of four PhD students**: Anders W. Jensen (2020, main supervisor), Bethan J.V. Davies (2019), Kim D. Jensen (2017), and Eleonora Zamburlini (2016).
- Finalised **supervision of four MSc students**: Elena Gómez-González (M.Sc. in Nanoscience, 2020. Mark: 12/12), Elena Plaza-Mayoral (M.Sc. in Nanoscience, 2020. Mark: 12/12), Alejandro Arminio-Ravelo (M.Sc. in Sustainable Chemistry, 2018. Mark: 12/12), Anders K. Jepsen (M.Sc. in Physics and Nanotechnology, 2012. Mark: 12/12).

Reviewing and editorial activities

2021 –	Reviewer, European Research Council (ERC Starting Grant).
2021 –	Editorial Board Member of *ChemElectroChem* (Chemistry Europe, Wiley).
2020 –	Editorial Board Member of *Communications Chemistry* (Nature Research).
2020 –	Editorial Advisory Board Member of *Advanced Energy and Sustainability Research* (Wiley).
2019 –	PhD examiner on six occasions, at *EPFL* (Switzerland), *Alicante University* (Spain), *Córdoba University* (Spain), *TU Delft* (Netherlands) and *College de France* (France).
2019 –	Guest Editor, special/focus issues: 'Translating insight from model electrocatalysis experiments to impact to full electrolyser and fuel cells' (*Journal of Physics: Energy*, 2022),

'Difficult to decarbonize energy sectors: technological, policy and social justice perspective (*iScience*, 2022), 'Electrocatalysis for the Green Transition' (*Electrochemical Science Advances*, 2022), 'Women in Electrochemistry' (*Journal of the Electrochemical Society*, 2022), 'Single atom catalysis' (*Journal of Materials Chemistry A*, 2021), 'Electrocatalysis' (*Electrochemical Science Advances* 2021 & *ChemPhysChem*, 2019).

2019 – Reviewer, *Newton International Fellowship*, Royal Society (UK).

2018 – 2019 Early Career Advisory Board Member of *ACS Catalysis* (American Chemical Society).

2017 – Evaluator, *The Icelandic Research Fund* (Iceland).

2013 – Peer-reviewer for international refereed journals such as *Science*, *Nature Chemistry, Nature Materials, Nature Energy, Nature Catalysis*, *Angewandte Chemie, Journal of Materials Chemistry A, Advanced Energy Materials, ACS Energy Letters,* and *ACS Catalysis.*

Teaching activities

2017 – Teaching M.Sc. and B.Sc. nanoscience and chemistry courses, including 'Structural tools in nanoscience', 'Catalysis and sustainable chemistry' and 'Unifying concepts in nanoscience', *UCPH Chemistry*, Denmark.

2012 – 2015 Teaching graduate course 'Materials for hydrogen production, storage and fuel cells applications', *DTU Physics*, Denmark.

Memberships of scientific societies

- 2021-present: International Society of Electrochemistry Regional Representative for Denmark.
- 2018-present: Chair of the Danish Electrochemical Society.
- 2018-2019: Early Career Advisory Board Member of ACS Catalysis.
- 2017-present: 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).