

Dr. Alexander Giovannitti

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I am a materials chemist with strong expertise in polymer chemistry and electrochemistry. My research involves the design and synthesis of redox-active polymers to fabricate saleable and efficient electrodes for electrochemical synthesis. I thrive in collaborative, diverse, and open-minded research atmospheres, working along with colleagues in interdisciplinary settings to tackle timely challenges.

Education

10/2014-09/2017	Ph.D. in Physics – Centre for Doctoral Training in Plastic Electronics, Department of Physics, Imperial College London, United Kingdom <i>McCulloch group</i> , ‘The development of organic semiconductors for p- and n-type accumulation mode organic electrochemical transistors (OECTs)’ - Design and synthesis of polymeric organic semiconductors for electrochemical devices (Date of Award: 01.01.2018)
09/2013-10/2014	MRes in Plastic Electronics , Imperial College London, United Kingdom <i>McCulloch group</i> , ‘Conducting polymers and their applications in organic electrochemical transistors (OECT)’
10/2007-11/2012	Graduate in Chemistry (diploma) , Karlsruhe Institute of Technology, Germany <i>Bräse group</i> , ‘Optimized Synthesis of (Bis(benzo)methano)-fullerene compounds and their application towards Hexakis-substituted products’

Research Experience

From 04/2023	Assistant Professor – Department of Chemistry and Chemical Engineering, Chalmers University of Technology, Sweden.
Since 03/2019	Postdoc (Postdoctoral Scholar) – Department of Material Science and Engineering, Stanford University, United States of America <i>Salleo group</i> , Development of recyclable energy storage and energy conversion devices based on solution processible redox-active polymeric organic semiconductors.
10/2017-01/2019	Postdoc (Research Assistant and Research Associate)– Department of Physics, <i>Imperial College London, United Kingdom</i> <i>Nelson group</i> , Design and evaluation of energy storage devices for environmentally friendly and safe (aqueous) electrolytes.

Selected publications and dissemination (Web of Science, September 2023 [[link](#)])

- Published **42 peer-reviewed articles** (h-index: 25, > 2900 citations)
 - Filled **three patent applications** based on developed materials and ideas.
 - Delivered > **10 presentations** at international conferences.
1. Siew Ting Melissa Tan, Tyler J. Quill, Maximilian Moser, Xingxing Chen, Alberto Salleo and **Alexander Giovannitti***, *Redox-active polymers designed for the circular economy of energy storage devices*, 2021, ACS Energy Lett. 2021, 6, 3450–3457. [[10.1021/acseenergylett.1c01625](https://doi.org/10.1021/acseenergylett.1c01625)]
 2. Garrett LeCroy, Camila Cendra, Tyler J. Quill, Maximilian Moser, Rawad Hallani, James F. Ponder Jr., Kevin Stone, Stephen D. Kang, Allen Yu-Lun Liang, Quentin Thiburce, Iain McCulloch, Frank C. Spano, **Alexander Giovannitti***, and Alberto Salleo*, Role of aggregates and microstructure of mixed-ionic electronic-conductors on charge transport in electrochemical transistors, Mater. Horiz., 12, 2023. [[10.1039/d3mh00017f](https://doi.org/10.1039/d3mh00017f)]
 3. Anna A. Szumska, Iuliana P. Maria, Lucas Q. Flagg, Achilleas Savva, Jokubas Surgailis, Bryan D. Paulsen, Davide Moia, Xingxing Chen, Sophie Griggs, J. Tyler Mefford, Reem B. Rashid, Adam Marks, Sahika Inal, David S. Ginger, **Alexander Giovannitti*** and Jenny Nelson*, *Reversible electrochemical charging of n-type conjugated polymer electrodes in aqueous electrolytes*, J. Am. Chem. Soc., 2021, 143, 36, 14795–14805 [[10.1021/jacs.1c06713](https://doi.org/10.1021/jacs.1c06713)].

4. Iuliana P. Maria*, Bryan Paulsen, Achilleas Savva, David Ohayon, Ruiheng Wu, Rawad Hallani, Aniruddha Basu, Weiyuan Du, Thomas Anthopoulos, Sahika Inal, Jonathan Rivnay, Iain McCulloch and **Alexander Giovannitti***, *The effect of alkyl spacers on the mixed ionic-electronic conduction properties of n-type polymers*, Adv. Funct. Mater. 2021, 2008718 [[10.1002/adfm.202008718](https://doi.org/10.1002/adfm.202008718)].
5. **Alexander Giovannitti***, Reem B. Rashid, Quentin Thiburce, Bryan Paulsen, Camila Cendra, Karl Thorley, Davide Moia, J. Tyler Mefford, David Hanifi, Du Weiyuan, Max Moser, Alberto Salleo, Jenny Nelson, Iain McCulloch, and Jonathan Rivnay, *Energetic control of redox-active polymers towards safe organic bioelectronic materials*, Adv. Mater. 2020, 32, 1908047. [[10.1002/adma.201908047](https://doi.org/10.1002/adma.201908047)]
6. Davide Moia*(1), **Alexander Giovannitti*(1)**, Anna A. Szumska, Martin Schnurr, Elham Rezasoltani, Iuliana P. Maria, Piers R.F. Barnes, Iain McCulloch and Jenny Nelson*, *A salt water battery with high stability and charging rates made from solution processed conjugated polymers with polar side chains*, Energy Environ. Sci., 2019, 12, 1349-1357 [[10.1039/C8EE03518K](https://doi.org/10.1039/C8EE03518K)].
7. **Alexander Giovannitti***, Iuliana P. Maria, David Hanifi, Mary J. Donahue, Daniel Bryant, Katrina J. Barth, Beatrice E. Makdah, Achilleas Savva, Davide Moia, Matyáš Zetek, Piers Barnes, Obadiah G. Reid, Sahika Inal, Garry Rumbles, George G. Malliaras, Jenny Nelson, Jonathan Rivnay,* and Iain McCulloch, *The role of the side chain on the performance of n-type conjugated polymers in aqueous electrolytes*, Chem. Mater., 2018, 30, 9, 2945–2953 [[10.1021/acs.chemmater.8b00321](https://doi.org/10.1021/acs.chemmater.8b00321)]
8. **Alexander Giovannitti**, Dan-Tiberiu Sbircea, Sahika Inal, Christian B. Nielsen, Enrico Bandiello, David A. Hanifi, Michele Sessolo, George G. Malliaras, Iain McCulloch and Jonathan Rivnay*. *Controlling the mode of operation of organic transistors through side chain engineering*, Proc. Nat. Acad. Sci., 2016, 113, 12017-12022 [[10.1073/pnas.1608780113](https://doi.org/10.1073/pnas.1608780113)]
9. **Alexander Giovannitti***, Christian B. Nielsen, Dan-Tiberiu Sbircea, Sahika Inal, Mary Donahue, Muhammad R. Niazi, David A. Hanifi, Aram Amassian, George G. Malliaras, Jonathan Rivnay and Iain McCulloch. *N-type organic electrochemical transistors with stability in water*, Nat. Commun. 2016, 7, 13066-13075. [[10.1038/ncomms13066](https://doi.org/10.1038/ncomms13066)]
10. **Alexander Giovannitti***, Christian B. Nielsen, Jonathan Rivnay, Mindaugas Kirkus, David J. Harkin, Andrew J.P. White, Henning Sirringhaus, George G. Malliaras and Iain McCulloch. *Sodium and Potassium Ion Selective Conjugated Polymers for Optical Ion Detection in Solution and Solid State*, Adv. Funct. Mater., 2016, 26, 514–523. [[10.1002/adfm.201503791](https://doi.org/10.1002/adfm.201503791)]

Teaching & Supervision

2019 – 2020	Postdoc Teaching Certificate, Stanford University Completed after 100 h of teaching training and in-person teaching, participated in courses at Stanford University ‘Topics in Human-Computer Interaction’ at the Department of Computer Science and ‘Inclusive and Effective Teaching’.
2020 – 2021	Organic Semiconductors for Electronics and Photonics at Stanford University. Instructor (online course) for 20 graduate students (Spring term 2020 and 2021), course design (10 lectures), developing of course materials (problem sets/worksheets/exams), and grading of problem sets and exams.
2019 – present	Supervision of graduate students (5 graduate students), Stanford University Subgroup leader, project planning, co-supervision, and training in the laboratory, publishing results in peer-reviewed journals.
2014 – 2019	Supervision of students (3 PhD, 1 MSc, and 2 BSc students), Imperial College London Subgroup leader, project planning, co-supervision, and training in the laboratory, publishing results in peer-reviewed journals.
2016	Tutor in Organic Chemistry, Imperial College London, United Kingdom Problem workshop in organic chemistry (first-year students)
2010 – 2011	Tutor in Organic Chemistry, Karlsruhe Institute of Technology, Germany Problem workshop in organic chemistry (second and third-year students)

Funding & Research grants

2021 – 2023	Precourt Energy Stanford University, Strategic Energy Research Consortium grant (\$900.000)
2020	StorageX Initiative Seed-Funding: Recyclable polymer batteries, <i>Stanford University</i> (\$40.000)
2019 – 2021	TomKat Postdoctoral Fellowship in Sustainable Energy, <i>Stanford University</i> (24 months)
2017 – 2018	EPSRC Doctoral Prize Fellowship, <i>Imperial College</i> (12 months)

Academic Awards

2022	Future Faculty Award (cohort 2022), invited talk at ACS 2022, Chicago.
2018	Winner of the Outstanding Ph.D. award 2017/2018, Department of Chemistry, <i>Imperial College</i>
2017	Finalist REAXYS Chemistry Ph.D. Prize Award, one of the 10 finalists shortlisted from >450 candidates to give a talk at the REAXYS symposium 2017, <i>Shanghai</i>
2017	Graduate Student Award EMRS, <i>Strasbourg</i> – Best presented paper (Organic Bioelectronics symposium)
2014	Prize for the best M.Res. Project in Plastic Electronics, <i>Imperial College</i>

Invited talks

2021	NanoGe Conference, ‘Unpaired electron materials’, Virtual Conference.
2020	Invited talk ‘Processable Energy Storage Materials – From Batteries to Sustainable Fuels’, <i>Imperial College London, UK</i>
2019	Stanford Polymer Collective seminar, <i>Stanford University, USA</i>
2019	Invited talk and seminar, <i>Max-Planck Institute for Polymer Research, Germany</i>
2017	Invited talk at the REAXYS Ph.D. Prize Symposium, <i>Shanghai, China</i> .

Professional services and outreach

Reviewer for Wiley, ACS, RSC, Nature Communications (total of 27 reviews [[link](#)])

Organizer of the OMIEC symposium at NanoGe Conference, Spring 2022.

Outreach projects at the Science Festival, Imperial College London, 2014 to 2018.

Oral presentations (2019 to 2023)

1. SPIE meeting, *San Diego, USA*, 08/2023 ‘Next-generation polymeric organic semiconductors for electrochemical transistors in aqueous electrolytes’ (**Invited Talk**)
2. Seventh International Symposium Frontiers in Polymer Science, Göteborg, Sweden, 05/2023, ‘Next-generation polymeric organic semiconductors for electrochemical transistors in aqueous electrolytes’ (Talk)
3. ACS Fall 2022 Fall Meeting, 08/2022, *Chicago, USA* “Next-generation polymeric organic semiconductors for electrochemical application” (Talk), Redox-Active Polymers Designed for the Circular Economy of Energy Storage Devices (**Invited Talk**)
4. MRS Spring Meeting, 05/2022, *Honolulu, USA*, ‘Redox-active polymers designed for the circular economy of energy storage devices’ (Talk #1) and ‘Next-generation polymeric organic semiconductors for electrochemical application in aqueous electrolytes’ (Talk #2)
5. Energy Solutions Week, 05/2022 “H₂O₂ production Using Polymeric Organic Semiconducting Electrocatalysts”, Energy Solutions Week. *Stanford, CA*. May 2022. (**Invited Talk**)
6. MRS Fall Meeting, 12/2021, *Boston, USA*, ‘Redox-active polymers designed for the circular economy of energy storage devices’ (Talk #1) and ‘Reversible Charging of Redox-Active Conjugated polymers beyond the polaronic state in aqueous electrolytes’ (Talk #2)
7. Online Seminar Series, Energy topics, Department of Chemistry, *Imperial College London, UK*, 06/2021, ‘Redox-Active Polymers Designed for the Circular Economy of Energy Storage Devices’, (**Invited Talk**)
8. Polymer Electronics and Nanostructures seminar, Institute of Polymer Chemistry, *University of Stuttgart, Germany* 07/2021, ‘Redox-active Conjugated Polymers Designed for the Development of Recyclable Energy Storage Devices’ (**Invited Talk**)
9. Seminar UnisysCat and Institute of Chemistry, *TU Berlin, Germany*, 06/2021, ‘The development of redox-active conjugated polymers for energy storage and electrocatalysis’, (**Invited Talk**)
10. Materials for the Future Biomaterials Colloquium, *University College London, UK*, 03/2021, ‘Energetic control of redox-active polymers towards safe organic bioelectronic materials’ (**Invited Talk**)
11. GDCh Young Professor online seminar, 03/2021, ‘Synthesis and development of polymeric organic semiconductors and their application in energy electrochemical devices’ (Talk)
12. NanoGe Virtual Conference, 03/2021, ‘Energetic control of redox-active polymers towards safe organic bioelectronic materials’ (**Invited Talk**)

13. ACS Fall 2020 Virtual National Meeting, 08/2020 "Structure, Self-Assembly, & Transport in Ionic Systems", 'Organic Mixed Ionic/Electronic Conductors and their Application in Energy Storage devices' (Talk)
14. CPE online symposium, *Imperial College London*, UK, 06/2020, 'Processable Energy Storage Materials – From Batteries to Sustainable Fuels, 'Organic Mixed Ionic/Electronic Conductors and their use in Energy Storage Applications' (**Invited Talk**)
15. MRS Fall Meeting 12/2019, *Boston*, USA, 'Energetic control of redox-active polymers towards safe organic bioelectronic materials' (Talk #1) and 'Development of zinc-polymer-air batteries for energy storage in safe and environmentally friendly electrolytes' (Talk #2)
16. SPIE meeting, *San Diego*, USA, 08/2019 'The design of air-stable, redox-active conjugated polymers and their applications in accumulation mode OECTs' (Talk)

Peer-reviewed Publications (the corresponding author marked with *)

1. Controlling swelling in mixed transport polymers through alkyl side-chain physical cross-linking, Nicholas Siemons, Drew Pearce, Hang Yu, Sachetan M Tuladhar, Garrett S LeCroy, Rajendar Sheelamantula, Rawad K Hallani, Alberto Salleo, Iain McCulloch, **Alexander Giovannitti**, Jarvist M Frost, Jenny Nelson, PNAS, 2023, 120 (35) e2306272120. [[10.1073/pnas.2306272120](https://doi.org/10.1073/pnas.2306272120)]
2. Garrett LeCroy, Camila Cendra, Tyler J. Quill, Maximilian Moser, Rawad Hallani, James F. Ponder Jr., Kevin Stone, Stephen D. Kang, Allen Yu-Lun Liang, Quentin Thiburce, Iain McCulloch, Frank C. Spano, **Alexander Giovannitti***, and Alberto Salleo*, Role of aggregates and microstructure of mixed-ionic electronic-conductors on charge transport in electrochemical transistors, *Mater. Horiz.*, 12, 2023. [[10.1039/d3mh00017f](https://doi.org/10.1039/d3mh00017f)]
3. Tyler J. Quill, Garrett LeCroy, David M. Halat, Rajendar Sheelamantula, Adam Marks, Lorena S. Grundy, Iain McCulloch, Jeffrey A. Reimer, Nitash P. Balsara, **Alexander Giovannitti***, Alberto Salleo*, Christopher J. Takacs*, An ordered, self-assembled nanocomposite with efficient electronic and ionic transport, *Nat. Mater.*, 2023, 22, 362–368. [[10.1038/s41566-023-01476-6](https://doi.org/10.1038/s41566-023-01476-6)]
4. Iuliana P. Maria*, Sophie Griggs, Reem B. Rashid, Bryan D. Paulsen, Jokubas Surgailis, Karl Thorley, Vianna N. Le, George T. Harrison, Craig Combe, Rawad Hallani, **Alexander Giovannitti**, Alexandra F. Paterson, Sahika Inal, Jonathan Rivnay, and Iain McCulloch*, *Enhancing the Backbone Coplanarity of n-Type Copolymers for Higher Electron Mobility and Stability in Organic Electrochemical Transistors*, *Chem. Mater.* 2022, 34, 19, 8593–8602. [[10.1021/acs.chemmater.2c01552](https://doi.org/10.1021/acs.chemmater.2c01552)]
5. Nicholas Siemons, Drew Pearce, Camila Cendra, Hang Yu, Sachetan M. Tuladhar, Rawad K. Hallani, Rajendar Sheelamantula, Garrett S. LeCroy, Lucas Siemons, Andrew J. P. White, Iain McCulloch, Alberto Salleo, Jarvist M. Frost, **Alexander Giovannitti**, Jenny Nelson, *Impact of Side Chain Hydrophilicity on Packing, Swelling and Ion Interactions in Oxibithiophene Semiconductors*, *Adv. Mater.* 2022. [[10.1002/adma.202204258](https://doi.org/10.1002/adma.202204258)]
6. Siew Ting Melissa Tan, **Alexander Giovannitti**, Adam Marks, Maximilian Moser, Tyler J Quill, Iain McCulloch, Alberto Salleo, Giorgio E Bonacchini, *Conjugated polymers for microwave applications: untethered sensing platforms and multifunctional devices*, *Adv. Mater.* 2022, 2202994. [[10.1002/adma.202202994](https://doi.org/10.1002/adma.202202994)]
7. Siew Ting Melissa Tan, Gijun Lee, Ilaria Denti, Garrett LeCroy, Kalee Rozylowicz, Adam Marks, Sophie Griggs, Iain McCulloch, **Alexander Giovannitti***, Alberto Salleo*, *Tuning Organic Electrochemical Transistor Threshold Voltage using Chemically Doped Polymer Gates*, *Adv. Mater.* 2022, 2202359. [[10.1002/adma.202202359](https://doi.org/10.1002/adma.202202359)]
8. Scott T Keene, Wesley Michaels, Armantas Melianas, Tyler J Quill, Elliot J Fuller, **Alexander Giovannitti**, Iain McCulloch, Alec Talin, Christopher J Tassone, Jian Qin, Alessandro Troisi, Alberto Salleo*, *Efficient Electronic Tunneling Governs Transport in Conducting Polymer-Insulator Blends*, *J. Am. Chem. Soc.*, 2022, 44, 23, 10368–10376. [[10.1021/jacs.2c02139](https://doi.org/10.1021/jacs.2c02139)]
9. Lewis M Cowen*, Peter A Gilhooly-Finn, **Alexander Giovannitti**, Garrett LeCroy, Harry Demetriou, William Neal, Yifan Dong, Megan Westwood, Sally Luong, Oliver Fenwick, Alberto Salleo, Sandrine Heutz, Christian B Nielsen, Bob C Schroeder*, *Critical analysis of self-doping and water-soluble n-type organic semiconductors: structures and mechanisms*, *J. Mater. Chem. C*, 2022, 10, 8955-8963. [[10.1039/D2TC01108E](https://doi.org/10.1039/D2TC01108E)]
10. Imke Krauhausen, Dimitrios A. Koutsouras, Armantas Melianas, Scott T. Keene, Katharina Lieberth, Hadrien Ledanseau, Rajendar Sheelamantula, **Alexander Giovannitti**, Fabrizio Torricelli, Iain McCulloch, Paul W. M. Blom, Alberto Salleo*, Yoeeri van de Burgt*, Paschalis Gkoupidenis* *Science Advances*, 2021, [[10.1126/sciadv.abl5068](https://doi.org/10.1126/sciadv.abl5068)].
11. Bryan D Paulsen, **Alexander Giovannitti**, Ruiheng Wu, Joseph Strzalka, Qingteng Zhang, Jonathan Rivnay*, Christopher J Takacs*, *Electrochemistry of Thin Films with In-Situ/Operando Grazing Incidence X-Ray Scattering: Bypassing Electrolyte Scattering for High Fidelity Time Resolved Studies*, 2021, *Small*, 17, 2103213 [[10.1002/smll.202103213](https://doi.org/10.1002/smll.202103213)]
12. Siew Ting Melissa Tan, Scott Tom Keene, **Alexander Giovannitti**, Armantas Melianas, Maximilian Moser, Iain McCulloch, Alberto Salleo*, *Operation Mechanism of Organic Electrochemical Transistors as Redox Chemical Transducers*, *J. Mater. Chem. C*, 2021, [[10.1039/d1tc02224e](https://doi.org/10.1039/d1tc02224e)]
13. Siew Ting Melissa Tan, Tyler J. Quill, Maximilian Moser, Xingxing Chen, Alberto Salleo and **Alexander Giovannitti***, *Redox-active polymers designed for the circular economy of energy storage devices*, 2021, *ACS Energy Lett.* 2021, 6, 3450–3457. [[10.1021/acsenergylett.1c01625](https://doi.org/10.1021/acsenergylett.1c01625)]

14. Anna A. Szumska, Iuliana P. Maria, Lucas Q. Flagg, Achilleas Savva, Jokubas Surgailis, Bryan D. Paulsen, Davide Moia, Xingxing Chen, Sophie Griggs, J. Tyler Mefford, Reem B. Rashid, Adam Marks, Sahika Inal, David S. Ginger, **Alexander Giovannitti*** and Jenny Nelson*, *Reversible electrochemical charging of n-type conjugated polymer electrodes in aqueous electrolytes*, J. Am. Chem. Soc., 2021, 143, 36, 14795–14805 [[10.1021/jacs.1c06713](https://doi.org/10.1021/jacs.1c06713)].
15. Iuliana P. Maria*, Bryan Paulsen, Achilleas Savva, David Ohayon, Ruiheng Wu, Rawad Hallani, Aniruddha Basu, Weiyuan Du, Thomas Anthopoulos, Sahika Inal, Jonathan Rivnay, Iain McCulloch and **Alexander Giovannitti***, *The effect of alkyl spacers on the mixed ionic-electronic conduction properties of n-type polymers*, Adv. Funct. Mater. 2021, 2008718 [[10.1002/adfm.202008718](https://doi.org/10.1002/adfm.202008718)].
16. Maximilian Moser, Achilleas Savva, Karl Thorley, Bryan D Paulsen, Tania Cecilia Hidalgo, David Ohayon, Hu Chen, **Alexander Giovannitti**, Adam Marks, Nicola Gasparini, Andrew Wadsworth, Jonathan Rivnay, Sahika Inal, Iain McCulloch*, *Polaron Delocalization in Donor-Acceptor Polymers and its Impact on Organic Electrochemical Transistor Performance*, Angew. Chem. Int. Ed., 2020 [[10.1002/anie.202014078](https://doi.org/10.1002/anie.202014078)].
17. Maximilian Moser, Tania Cecilia Hidalgo, Jokubas Surgailis, Johannes Gladisch, Sarbani Ghos, Rajendar Sheelamantula, Quentin Thiburce, **Alexander Giovannitti**, Alberto Salleo, Nicola Gasparini, Andrew Wadsworth, Igor Zozoulenko, Magnus Berggren, Eleni Stavrinidou, Sahika Inal, and Iain McCulloch*, *Side Chain Redistribution as a Strategy to Boost Organic Electrochemical Transistor Performance and Stability*, Adv. Mater. 2020, 32, 2002748 [[10.1002/adma.202002748](https://doi.org/10.1002/adma.202002748)].
18. Armantas Melianas*, Tyler. J. Quill, Garrett. LeCroy, Yaakov. Tuchman, Hilbert v. Loo, Scott. T. Keene, **Alexander Giovannitti**, Hye R. Lee, Iuliana. P. Maria, Iain. McCulloch, Alberto Salleo*, *Temperature-resilient solid-state organic artificial synapses for neuromorphic computing*, Science Advances, 2020, 6, 27 [[10.1126/sciadv.abb2958](https://doi.org/10.1126/sciadv.abb2958)].
19. Siew Ting Melissa Tan, **Alexander Giovannitti***, Armantas Melianas, Maximilian Moser, Benjamin L. Cotts, Devan Singh, Iain McCulloch, Alberto Salleo *Chemical to Electrical Transduction using Floating-Gate Organic Electrochemical Transistors*, Adv. Funct. Mater. 2021, 2010868 [[10.1002/adfm.202010868](https://doi.org/10.1002/adfm.202010868)].
20. **Alexander Giovannitti***, Reem B. Rashid, Quentin Thiburce, Bryan Paulsen, Camila Cendra, Karl Thorley, Davide Moia, J. Tyler Mefford, David Hanifi, Du Weiyuan, Max Moser, Alberto Salleo, Jenny Nelson, Iain McCulloch, and Jonathan Rivnay, *Energetic control of redox-active polymers towards safe organic bioelectronic materials*, Adv. Mater. 2020, 32, 1908047. [[10.1002/adma.201908047](https://doi.org/10.1002/adma.201908047)].
21. Achilleas Savva, Rawad Hallani, Camila Cendra, Jokubas Surgailis, Tania C Hidalgo, Shofarur Wustoni, Rajendar Sheelamantula, Xingxing Chen, Mindaugas Kirkus, **Alexander Giovannitti**, Alberto Salleo, Iain McCulloch, Sahika Inal, *Balancing Ionic and Electronic Conduction for High-Performance Organic Electrochemical Transistors*, Adv. Funct. Mater. 2020, 30, 1907657 [[10.1002/adfm.201907657](https://doi.org/10.1002/adfm.201907657)].
22. Johannes Gladisch, Eleni Stavrinidou,* Sarbani Ghosh, **Alexander Giovannitti**, Maximilian Moser, Igor Zozoulenko, Iain McCulloch, and Magnus Berggren, *Reversible Electronic Solid–Gel Switching of a Conjugated Polymer*, Adv. Sci. 2019, 1901144 [[10.1002/advs.201901144](https://doi.org/10.1002/advs.201901144)].
23. Maximilian Moser, James F. Ponder Jr., Andrew Wadsworth, **Alexander Giovannitti**, Iain McCulloch, *Materials in Organic Electrochemical Transistors for Bioelectronic Applications: Past, Present, and Future*, Adv. Funct. Mater. 2019, 29, 180703. [[10.1002/adfm.201807033](https://doi.org/10.1002/adfm.201807033)].
24. Maximilian Moser, Karl J Thorley, Floriana Moruzzi, James F Ponder, Iuliana P Maria, **Alexander Giovannitti**, Sahika Inal, Iain McCulloch, *Highly selective chromoionophores for ratiometric Na⁺ sensing based on an oligoethyleneglycol bridged bithiophene detection unit*, J. Mater. Chem. C, 2019, 7, 5359–5365. [[10.1039/c8tc06000b](https://doi.org/10.1039/c8tc06000b)].
25. Davide Moia*(1), **Alexander Giovannitti*(1)**, Anna A. Szumska, Martin Schnurr, Elham Rezasoltani, Iuliana P. Maria, Piers R.F. Barnes, Iain McCulloch and Jenny Nelson*, *A salt water battery with high stability and charging rates made from solution processed conjugated polymers with polar side chains*, Energy Environ. Sci., 2019, 12, 1349-1357 [[10.1039/C8EE03518K](https://doi.org/10.1039/C8EE03518K)].
26. Camila Cendra, **Alexander Giovannitti**, Achilleas Savva, Vishak Venkatraman, Iain McCulloch, Alberto Salleo, Sahika Inal, Jonathan Rivnay, *Role of the Anion on the Transport and Structure of Organic Mixed Conductors*, Adv. Funct. Mater. 2019, 29, 1807034. [[10.1002/adfm.201807034](https://doi.org/10.1002/adfm.201807034)].
27. Achilleas Savva, Camila Cendra, Andrea Giugni, Bruno Torre, Jokubas Surgailis, David Ohayon, **Alexander Giovannitti**, Iain McCulloch, Enzo Di Fabrizio, Alberto Salleo, Jonathan Rivnay, and Sahika Inal, *Influence of Water on the Performance of Organic Electrochemical Transistors*, Chem. Mater. 2019, 31, 927–937. [[10.1021/acs.chemmater.8b04335](https://doi.org/10.1021/acs.chemmater.8b04335)].
28. Quentin Thiburce, **Alexander Giovannitti**, Iain McCulloch, and Alasdair J. Campbell, *Absence of short-channel effects in sub-100 nm ion-doped polymer transistors*, Nano Lett., 2019 [[10.1021/acs.nanolett.8b04717](https://doi.org/10.1021/acs.nanolett.8b04717)].

29. Vishak Venkatraman, Jacob T. Friedlein, **Alexander Giovannitti**, Iuliana P. Maria, Iain McCulloch, Robert R. McLeod, and Jonathan Rivnay, *Subthreshold operation of organic electrochemical transistors for bio-amplification*, Adv. Sci., 2018, 1800453 [[10.1002/advs.201800453](https://doi.org/10.1002/advs.201800453)]
30. David Kiefer, Renee Kroon, Anna I. Hofmann, Hengda Sun, Xianjie Liu, **Alexander Giovannitti**, Dominik Stegerer, Alexander Cano, Jonna Hynynen, Liyang Yu, Yadong Zhang, Michael Sommer, Seth R. Marder, Adam J. Moulé, Iain McCulloch, Mats Fahlman, Simone Fabiano and Christian Müller, *Double Doping of Conjugated Polymers with Monomer Molecular Dopants*, Nat. Mater., 2018, Nat. Mater. 2019, 18, 149 [[10.1038/s41563-018-0263-6](https://doi.org/10.1038/s41563-018-0263-6)]
31. Yi Zhang, Shofarul Wustoni, **Alexander Giovannitti**, Iain McCulloch and Sahika Inal*, *Lipid Bilayer Formation on Organic Electronic Materials*, J. Mater. Chem. C, 2018 [[10.1039/C8TC00370J](https://doi.org/10.1039/C8TC00370J)]
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