

CURRICULUM VITAE**• Personal Details**

Oded Nir

8.6.1981, Israel

Zuckerberg Institute for Water Research, Midreshet Ben-Gurion 8499000,

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<https://scholar.google.com/citations?user=jR-MyZoAAAAJ&hl=en>

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nirwaterlab.com

• Education

B.Sc. - 2006-2010, Technion – Israel Institute of Technology, Environmental Engineering (Cum Laude)

Ph.D. (Direct Track) - 2010-2015, Technion – Israel Institute of Technology, Environmental Engineering

Name of advisor: Prof. Ori Lahav

Title of thesis: Removal of boron from seawater by reverse osmosis membranes: new operational approach and advanced process simulation.

• Employment History

3.2022-Present, Associate Professor, Ben Gurion University of the Negev, Blaustein Institutes for Desert Research, Zuckerberg Institute for Water Research.

10.2017-2.2022, Senior Lecturer (tenure track), Ben Gurion University of the Negev, Blaustein Institutes for Desert Research, Zuckerberg Institute for Water Research.

8.2015-8.2017, Postdoc Researcher, RWTH – Aachen University, Chemical Process Engineering Department (Matthias Wessling group)

12.2014 – 5.2015, Postdoc Researcher, University of Leuven, Chemical Engineering Department (Bart van der Bruggen group)

• Professional Activities

(a) Positions in academic administration

2021-Present, Council Member, the Goldman - sonnenfeldt School of Sustainability and Climate Change, BGU

2020, BGU sub-committee for improving new faculty adsorption: lab construction

(b) Professional functions outside universities/institutions (inter-university, national, international)

2022 – Present, Committee member (volunteering), Drinking water quality in Israel, subcommittees on Technology and Chemistry, Israeli Ministry of Health.

(c) Significant professional consulting

2021-present, Aleph-Farms, separation processes in scaling-up cultivated meat production (**Industry-funded research**).

2020-present, Committee member (volunteering), Disinfection of water discharged to the Red Sea from aquaculture activities, Israeli Ministry of Agriculture. 2020-present, Teva Pharmaceutical Industries Ltd., Utilizing membrane contactor for recycling ammonia in a pharmaceutical production process (**research collaboration with industry**).

2019-2020, Israel Nature and Parks Authority, Suitability of a water treatment system, applied by the Red Sea marine observatory in Eilat, for protecting the coral reef natural reserve.

(d) Editor or member of the editorial board of scientific or professional journal

2022 – Early Career Editorial Board *Chemical Engineering Journal*, Elsevier, (JIF: 16.74)

2022 – Review Editor in *Frontiers in Membrane Science and Technology (New Journal)*

(e) Ad-hoc reviewer for journals

Scientific Reports; Journal of Membrane Science; Separation and Purification Technology; Environmental Science: Processes & Impacts; Applied Geochemistry; Desalination; Desalination and Water Treatment; RCS Advances; Environmental Science: Water Research and Technology; ES&T Letters; Geosciences; Materials: Water Research; Industrial & Engineering Chemistry Research, Electrochemical Communications; ES&T Engineering; Nano-Micro Letter; Environmental Science and Technology; Chemical Engineering Journal; Science Advances

(f) Membership in professional/scientific societies

2021-present: the European Membrane Society

2021- present: the North American Membrane Society

2020 -present: the American Chemical Society

2018-2019: the International Water Association

• **Educational activities**

(a) Courses taught

Chemistry of Water, graduate – BGU

Aqueous Chemistry Modeling with PHREEQC, Graduate – BGU

Unit Operations in Water Treatment Processing, Undergraduate/graduate – BGU
(Jointly with Prof. Jack Gilron)

Separation Processes in Biotechnology, Undergraduate – BGU

Water Chemistry in Environmental Chemical Engineering, Undergraduate – BGU

(b) Research students and postdocs

1. Sanhita Chaudhury, Post-Doctorate Researcher, BGU, 2018-2020
2. Florian Kaven, MSc, 2018, RWTH-Aachen & BGU, (with Matthias Wessling)
3. Denise Hamsch, MSc 2019, RWTH-Aachen & BGU, (with Matthias Wessling)
4. Amit Weinman, MSc, 2020, BGU
5. Eyal Wormser, MSc, 2020, BGU, (with Eran Edri)
6. Omer Izraeli, MSc, 2021, BGU
7. Hala Abu-Ali, MSc, 2021, BGU, (with Ali Nujeidat)
8. Mohit Choudhury, Postdoc, BGU, 2023
9. Chidiebere Samuel Nnebuo, PhD, 2022, BGU
10. Yaeli Oren, PhD, 2022, BGU, (with Viatcheslav Freger)
11. Lior Monat, PhD, 2024, BGU
12. Ru Liu, PhD, 2024, BGU
13. Musie W. Atsbha, MSc, 2022, BGU
14. Alice Jarosikova, Postdoc, 2023, BGU
15. Dekel Dahuki, MSc, 2023, BGU
16. Yonatan Geller, MSc, 2023, BGU (with Orit Sivan)
17. Pratham Singh, MSc, 2023, BGU
18. Anusha Chandra, Postdoc, 2023, BGU (with Jack Gilron)

• **Awards, Citations, Honors, Fellowships**

(a) Honors, Citation Awards

2022, BGU, The Toronto Prize for Excellence in Research for early-career scientists.

2.2021, Dr. Raquel H. Newman Career Development Chair in Environmental Hydrology and Microbiology.

2021, BGU, The Yechiel Admoni Award for young researchers.

2015, Technion, Eng. Yehosah Grinshpan award for excellent PhD thesis in Water Treatment.

2013-14, Technion, Miriam and Aaron Gutwirth Memorial Fellowship for outstanding PhD students.

2012-14, 2 times, Rieger Foundation, USA, Rieger-JNF Fellowship award for environmental studies.

2011-13, 2 times, Technion, Excellence Scholarship Award for graduate students.

2012-13, Technion, Jacobs Excellence Scholarship Award for graduate students.

2011, The Israel Ministry of Agriculture and Rural Development, Complete Organism Scholarship Award for excellent graduate students in agricultural studies.

2010-11, Technion, Graduate School Excellence Scholarship Award.

2007-10 5 President's awards and 2 Dean awards for excellent achievements in undergraduate studies, Technion,

(b) Fellowships

2014-15, The European Union, 12,000 \$, “Erasmus Mundus” mobility scholarship for a short post-doctorate research project.

• **Scientific Publications**

H-index = 17-ISI /17-Scopus /19-GS , i10-index = 26-GS

Total number of citations = 767-ISI / 841-Scopus / 1177-GS

total number of citations without self-citations = 746-Scopus

(a) Authored books

N/A

(b) Editorship of collective volumes

N/A

(c) Refereed chapters in collective volumes

1. O. Nir^S, O. Lahav^{PI}, 2015, Single SWRO Pass Boron Removal at high pH: Prospects and Challenges, N. Kabay, N. Hilal and M. Bryjak, Boron Separation Processes, Elsevier Science Limited, 297-324. (7 citations - GS)

(d) Refereed articles and refereed letters in scientific journals

1. O. Nir^S, M. Herzberg^C, A. Sweity^S, L. Birnhack^S, O. Lahav^{PI}, 2012, A novel approach for SWRO desalination plants operation, comprising single pass boron removal and reuse of CO₂ in the post treatment step, *Chemical Engineering Journal* 187 275-282. (citations: 19-ISI / 22-GS, IF=16.74, 4/142, Q1)
2. O. Nir^S, M. Herzberg^C, O. Lahav^{PI}, 2013, A new, energy-efficient approach for boron removal from SWRO plants. *Desalination and Water Treatment* 51, 1651-1656. (citations:4-ISI / 4-GS, IF=1.27, 111/142, Q4)
3. O. Nir^S, O. Lahav^{PI}, 2013, Coupling mass transport and chemical equilibrium models for improving the prediction of SWRO permeate boron concentrations. *Desalination* 310, 87-82. (citations:15-ISI / 22-GS, IF=11.21, 3/100, Q1)
4. R. Ben-Asher^S, I. Seginer^C, N. Mozes^C, O. Nir^S, O. Lahav^{PI}, 2013, Effects of sub-lethal CO₂(aq) concentrations on the performance of intensively reared gilthead seabream (*Sparus aurata*) in brackish water: Flow-through experiments and full-scale RAS results, *Aquacultural Engineering* 56, 18-25. (citations: 10-ISI, 20-GS IF=3.27, 14/54, Q2)
5. O. Nir^S, O. Lahav^{PI}, 2014, Modeling weak acids reactive transport in reverse osmosis processes: a general framework and case studies for SWRO, *Desalination* 343, 147-153. (citations: 6-ISI / 6-GS citations, IF=11.21, 3/100, Q1)
6. O. Lehmann^S, O. Nir^S, M. Kuflik^S, O. Lahav^{PI}, 2014, Recovery of high-purity magnesium solutions from RO brines by adsorption of Mg(OH)₂(s) on Fe₃O₄ micro-particles and magnetic solids separation, *Chemical Engineering Journal* 235, 37-45. (citations: 22-ISI / 27-GS, IF=16.74, 4/142, Q1)

7. L. Birnhack^{PD}, O. Nir^S, O. Lahav^{PI}, 2014, Establishing the underlying rationale and description of a cheap nanofiltration bases method for supplementing desalination water with magnesium ions, *Water* 5(6), 1172-1186. (citations: 17-ISI / 19-GS, IF=3.53, 36/100, Q2)
8. O. Nir^S, E. Marvin^S, O. Lahav^{PI}, 2014, Accurate and self-consistent procedure for determining pH in seawater desalination brines and its manifestation in reverse osmosis modeling, *Water Research* 64, 187-195. (citations: 17-ISI, 23-GS IF=13.4, 1/100, Q1)
9. L. Birnhack^{PD}, O. Nir^S, O. Lahav^{PI}, A new algorithm for design, operation and cost assessment of struvite (MgNH₄PO₄) precipitation processes, 2015, *Environmental Technology* 36(15), 1892-1901. (citations: 13-ISI / 20-GS, IF=3.48, 151/279, Q2)
10. O. Nir^S, A. Vengosh^{PI}, J. S. Harkness^S, G. Dwyer^C, O. Lahav^{PI}, 2015, Direct measurement of the boron isotope fractionation factor: Reducing the uncertainty in reconstructing ocean paleo-pH. *Earth and Planetary Science Letters* 414, 1-5. (citations: 47-ISI / 57-GS, IF=5.79, 9/87, Q1)
11. R. Epsztein^S, O. Nir^S, O. Lahav^{PI}, M. Green^{PI}, 2015, Selective nitrate removal from groundwater using a hybrid nanofiltration-reverse osmosis filtration scheme. *Chemical Engineering Journal* 279 (2015), 372-378. (citations: 139-ISI / 190-GS, IF=16.74, 4/142, Q1)
12. N. Friedman-Bishop^S, O. Nir^S, O. Lahav^{PI}, V. Freger^{PI}, 2015, Predicting the rejection of major seawater ions by spiral-wound nanofiltration membranes, *Environmental Science and Technology* 49 (14), 8631–8638. (citations: 27-ISI / 31-GS, IF=11.36, 32/324, Q1)
13. L. Ophsek^S, L. Birnhack^{PD}, O. Nir^S, E. Binshtein^S, O. Lahav^{PI}, 2015, Reducing the specific energy consumption of 1st-pass SWRO by application of high-flux membranes fed with high-pH, decarbonated seawater. *Water Research* 85, 185-192. (citations: 15-ISI / 20-GS, IF=13.4, 1/100, Q1)
14. O. Nir^S, N. Friedman-Bishop^S, O. Lahav^{PI}, V. Freger^{PI}, 2015, Modeling pH Variation in Reverse Osmosis, *Water Research* 87, 328-335. (citations: 20-ISI/ 34-GS IF=13.4, 1/100, Q1)
15. O. Nir^{S*}, L. Ophsek^S, O. Lahav^{PI}, 2016, Acid-base dynamics in seawater reverse osmosis: experimental evaluation of a reactive-transport algorithm, *Environmental Science: Water Research and Technology* 2(1), 107-116. (citations: 11-ISI / 16-GS, IF=5.82, 15/100, Q1)
16. M. Bystrianský^S, O. Nir^{PD}, M. Šír^C, Z. Honzajková^C, R. Vurm^C, P. Hrychová^C, A. Bervic^C, B. van der Bruggen^{PI}, 2016, The presence of ferric iron promotes calcium sulphate scaling in reverse osmosis processes. *Desalination* 393, 115-119. (citations: 16-ISI / 28-GS, IF=11.21, 3/100, Q1)
17. O. Nir^{PD}, T. Trieu^S, S. Bannwarth^S, M. Wessling^{PI}, 2016, Microfiltration of deformable microgels. *Soft Matter*, 12(31), 6512-6517. (citations: 20-ISI / 25-GS, IF=4.05, 25/90, Q2)
18. L. Ophsek^S, O. Nir^{PD}, H. Segal^S, O. Lahav^{PI}, 2017, Temperature-dependent boron permeability through reverse-osmosis membranes: Implications for full-scale simulations. *Desalination and water treatment*, 68:23-31. (citations: 2-ISI / 2-GS, IF=1.27, 111/142, Q4)

19. *O. Nir^{PI*}, R. Sengpiel^S, M. Wessling^{PI}, 2018, Closing the cycle: phosphorus removal and recovery from diluted effluents using acid resistive membranes, *Chemical Engineering Journal*, 346:640-648. (citations: 30-ISI / 39-GS, IF=16.74, 4/142, Q1)
20. *H. Segal, L.^S. Birnhack^{PD}, O. Nir^{PI}, O. Lahav^{PI}, 2018, Intensification and energy minimization of seawater reverse osmosis desalination through high-pH operation: Temperature dependency and second pass implications. *Chemical Engineering and Processing-Process Intensification*, 131, 84-91. (citations: 7-ISI / 7-GS, IF=4.26, 53/142, Q2)
21. *O. Nir^{PI}, When does commercial software fail in predicting scaling tendency in reverse osmosis and what can we do better? *Desalination and Water Treatment*. 2018 Nov 1;131:34-42. (citations: ISI-0 / GS-3, IF=1.27, 111/142, Q4)
22. *M. Wiese^S, O. Nir^{PD}, D. Wypyssek^S, L. Pokern^S, M. Wessling^{PI}, 2019, Fouling minimization at membranes having a 3D surface topology with microgels as soft model colloids. *Journal of Membrane Science*, 569, 7-16. (citations: 23-ISI / 33-GS, IF=10.53, 11/142, Q1)
23. *L. Monat^S, S Chaudhury^{PD*}, O. Nir^{PI*}, 2020, Enhancing the sustainability of phosphogypsum recycling by integrating electro dialysis with bipolar membranes. *ACS Sustainable Chemistry and Engineering*, 8, 6, 2490-2497. (citations: 11-ISI / 12-GS, IF=9.22, 12/159, Q1)
24. *S. Chaudhury^{PD*}, A. K. Thakur^{PD}, Revital S. Gojman^T, C. J. Arnusch^{PI} and O. Nir^{PI*}, 2020, Ion transport in Laser-Induced Graphene Cation-Exchange Membrane hybrids, *Journal of Physical Chemistry Letters*, 11, 4, 1397-1403. (citations: 4-ISI / 8-GS, IF=6.89, 88/354, Q2)
25. *P. Nativ^{S*}, N. Fridman-Bishop^{PD}, O. Nir^{PI}, O. Lahav^{PI}, 2020, Dia-nanofiltration-electrodialysis hybrid process for selective removal of monovalent ions from Mg²⁺ rich brines, *Desalination*, 481, 114357. (citations: 10-ISI / 12-GS, IF=11.21, 3/100, Q1)
26. *U. Yogev^{PD}, M. Vogler^S, O. Nir^C, J. Londong^{PI}, A. Gross^{PI*}, 2020, Phosphorous recovery from a novel recirculating aquaculture system followed by its sustainable reuse as a fertilizer, *Science of The Total Environment*, 722, 137949. (citations: 17- ISI / 22-GS, IF=10.75, 26/279, Q1)
27. *H. Zhai^S, R. Bernstein^{PI*}, O. Nir^C, and L. Wang^{PI*}, 2020, Molecular Insight into the Interfacial Chemical Functionalities Regulating Heterogeneous Calcium Arsenate Nucleation, *Journal of Colloid and Interface Science*, 575, 464-471. (citations: 3-ISI / 3-GS, IF=9.97, 32/163, Q1)
28. *S. Chaudhury^{PD}, O. Nir^{PI*}, 2020, Electro-enhanced membrane sorption: a new approach for selective ion separation and its application to phosphate and arsenic removal, *Industrial & Engineering Chemistry Research*, 59, 22, 10595–10605 (5 citations: 6-ISI / 9-GS, IF=4.33, 52/142, Q2)
29. *A. Epshtein^S, O. Nir^C, L. Monat^S, and Y. Gendel^{PI*}, 2020, Treatment of acidic wastewater via fluoride ions removal by SiO₂ particles followed by phosphate ions recovery using flow-electrode capacitive deionization, *Chemical Engineering Journal* 400, 125892. (citations: 11-ISI / 14-GS, IF=16.74, 4/142, Q1)
30. *A. Bogler^{PD} et al., 2020, Rethinking wastewater risks and monitoring in light of the COVID-19 pandemic, *Nature Sustainability*, 3, 981–990 (citations: 107-ISI / 157-GS, IF=27.16, 5/279, Q1).

31. *S. Chaudhury^{PD}, E. Wormser^S, Y. Harari^S, E. Edri^{PI*}, and O. Nir^{PI*}, 2020, Tuning the Ion-Selectivity of Thin-Film Composite Nanofiltration Membranes by Molecular Layer Deposition of Alucone, *ACS Applied Materials and interfaces* 12 (47), 53356-53364, (citations: 11-ISI / 13-GS, IF=10.38, 49/345, Q1).
32. *E. Wormser^S, O. Nir^{PI*}, E. Edri^{PI*}, 2021, Low-Resistance Monovalent-Selective Cation Exchange Membranes prepared using molecular layer deposition for Energy-Efficient Ion Separations, *RSC Advances*, 11 (4), 2427-2436. (citations: 3-ISI / 4-GS, IF=4.04, 75/179, Q2).
33. *H. Abu-Ali^S, K. Yaniv^{PD}, E. Bar-Zeev^C, S. Chaudhury^{PD}, M. Shaga, S. Lakkakula, Z. Ronen^C, A. Kushmaro^{PI}, O. Nir^{PI*}, 2021, Tracking SARS-CoV-2 RNA through the wastewater treatment process. *ACS ES&T Water*, 1, 5, 1161–1167 (citations: 16-ISI / 31-GS, new journal)
34. *S. Stein^S, R. Kasher^{PI*}, O.Sivan^{PI}, O. Nir^{PI*}, 2021, An advantage for desalination of coastal saline groundwater over seawater in view of boron removal requirements, *Environmental Science: Water Research & Technology*, 7, 2241 (citations: 2-ISI / 2-GS, IF=5.82, 15/100, Q1)
35. *Y. S. Oren^S, V. Freger^C, O. Nir^{PI*}, 2021, New compact expressions for concentration-polarization of trace-ions in pressure-driven membrane processes, *Journal of Membrane Science Letters*, 1, 100003 (citations: 0-ISI / 3-GS, new journal)
36. *S. Chaudhury^C, N. Harlev^T, O. Haim^S, O. Lahav^C, O. Nir^{PI*}, 2021, Decreasing seawater desalination footprint by integrating bipolar-membrane electro dialysis in a single-pass reverse osmosis scheme, *ACS, Sustainable Chemistry and Engineering*, 9,48,16232-16240. (citations: 0-ISI / 0-GS, IF=9.22, 12/159, Q1)
37. *I. Bar-Or^{PI}, K. Yaniv^S, M. Shagan, E. Ozer, O. Erster, E. Mendelson^C, B. Mannasse, R. Shirazi, E. Kramarsky-Winter, O. Nir^C, H. Abu-Ali^C, Z. Ronen, E. Rinott, Y. E. Lewis, E. Friedler^C, E. Bitkover, Y. Paitan, Y. Berchenko^{PI}, A. Kushmaro^{PI}, 2021. Regressing SARS-CoV-2 sewage measurements onto COVID-19 burden in the population: a proof-of-concept for quantitative environmental surveillance, *Frontiers in Public Health*, 9, 561710. (citations: 129-GS, IF=6.46, 37/210, Q1)
38. *C. S. Nnebuo^S, D. Hambsch^S, and O. Nir^{PI*}, 2022, Elucidating morphological effects in membrane mineral fouling using real-time particle imaging and impedance spectroscopy, *Environmental Science: Water Research and Technology*, 8, 1444-1457. (citations: 0-ISI / 1-GS, IF=5.82, 15/100, Q1).
39. *L. Monat^S, W. Zhang^S, A. Jarošíková^{PD}, H. Haung^S, R. Bernstein^{PI}, O. Nir^{PI*}, 2022, Circular Process for Phosphoric Acid Plant Wastewater Facilitated by Selective Electro dialysis, *ACS Sustainable Chemistry & Engineering* 2022 10 (35), 11567-11576. DOI: 10.1021/acssuschemeng.2c03132 (citations: 0-ISI / 0-GS, IF=9.22, 12/159, Q1)
40. *O. Nir^{PI*}, Y. Oren^S, M. W. Atshba^S, A. Chandra^{PD}, Yonatan Geller^S, Mohit Chaudhary^{PD}, Lior Monat^S, Pratham Singh^S, and Ron Zevenhoven^{PI}, 2022, Reactive transport in membrane separation modeling: a perspective, *Chemical Engineering Research and Design, In Press* <https://doi.org/10.1016/j.cherd.2022.09.054>. (citations: 0-ISI / 0-GS, IF=4.12, 56/142, Q2)

41. S. Xue, R. Liu^S, Y. Cheng, S. Watzele^{CI}, X. Song, M. Liu, Y. Zhang, G. He, O. Nir^{CI}, M. Huang and H. Jiang^{PI}, Monopolar membrane-assisted acid-alkaline amphoteric water electrolysis towards efficient hydrogen generation, Accepted in *Journal of Power Sources*. (citations: 0-ISI / 0-GS, IF=9.79, 20/119, Q1)

- (e) Published scientific reports and technical papers (internally refereed publications of government research institutions and surveys, industrial research organizations, etc.)

N/A

- (f) Unrefereed professional articles and publications

N/A

- (g) Classified articles and reports

N/A

• Lectures and Presentations at Meetings and Invited Seminars

- (a) Invited plenary lectures at conferences/meetings

1. 2021, Potential of innovative hybrid membrane processes for recovering high-quality irrigation water and fertilizers from wastewater, *AINIA IV International Workshop about Water Management in Agri-Food Industries*, Valencia, Spain (Online). <https://www.ainia.es/seminario-gestion-aguas-economia-circular-industria-alimentaria-2021/>

- (b) Presentation of papers at conferences/meetings (oral or poster)

1. O. Nir, M. Herzberg, O. Lahav, 2012, Single-pass boron removal – a new approach, *Desalination for the Environment*, European Desalination Society, Barcelona, Spain (Oral)
2. O. Nir, M. Herzberg, O. Lahav, 2012, A new approach for boron removal in seawater desalination, the *annual conference of the Israeli Agriculture Engineering Society*, Tel-Aviv, Israel. (Oral)
3. O. Lehmann, O. Nir, M. Kuflik, O. Lahav, 2013, Selective magnetic separation of Mg^{2+} ions from SWRO brine by adsorption on magnetite crystals, for production of magnesium compounds and reuse thereof in water treatment processes, *1st International Conference on Desalination using Membrane Technology*, Elsevier, Sitges, Spain. (Oral).
4. O. Nir, O. Lahav, 2013, A new coupled approach for modeling the reactive transport of weak acids in reverse osmosis processes - the case of boric acid in

- seawater, *1st International Conference on Desalination using Membrane Technology*, Elsevier, Sitges, Spain. (Oral)
5. O. Nir, O. Lahav, 2014, Measuring and modeling pH evolution in reverse osmosis processes, *Desalination for the Environment: Clean water and Energy*, European Desalination Society, Limassol, Cyprus. (Oral)
 6. O. Nir, N. Friedman-Bishop, O. Lahav, V. Freger, 2015, Transport of hydronium and hydroxide ions in reverse osmosis desalination, *Euromembrane*, Aachen, Germany. (Oral)
 7. O. Nir, 2017, When does commercial software fail in predicting scaling tendency and what can we do better? *IDA World Congress*, International Desalination Association, Sao Paulo, Brazil. (Poster)
 8. O. Nir, D. Collignon, R. Sengpiel, M. Wessling, 2017, Removal and recovery of phosphorus from secondary effluent by nanofiltration, *World Resource Forum*, Geneva, Switzerland. (Oral)
 9. S. Chaudhary, O. Nir, 2019, Selective removal of phosphorus from wastewater using electromembrane process, *North American Membrane Association 28th annual meeting*, Pittsburg PA, USA. (Oral)
 10. E. Wormser, O. Nir, E. Edri, 2020, Low-Resistance Monovalent-Selective Cation Exchange Membranes for Energy-Efficient Ion Separations, *International Congress on Membranes & Membrane Processes*, London, online due to COVID19. (Oral)
 11. E. Wormser, O. Nir and E. Edri, 2021, Instilling Monovalent Selectivity in Cation Exchange Membranes By Molecular Layer Deposition, The Electrochemical Society (ECS) 239th meeting, Online due to COVID19. (Oral)
 12. L. Monat, O. Nir, 2021, Electrodialysis Processes For Minimizing Waste Production In Phosphoric Acid Plants, *12th European Symposium on Electrochemical Engineering*, ESEE 2021, Online Conference organized by WetSUS, Netherlands. (Oral)
 13. R. Liu, O. Nir, 2021, Recovering high-value P-K fertilizer from effluents by integrating adsorption and electrodialysis with bipolar membranes, *4th IWA Resource Recovery Conference*, International Water Association, Istanbul, online due to Covid19. (Oral)
 14. C. S. Nnebuo, O. Nir, 2021, Study of mineral fouling in synthetic effluent nanofiltration using real-time particle imaging and electrical impedance spectroscopy, *NAMS 2021 - Convergence: Connecting Membrane Science With Societal Challenges*, North American Membrane Society, Estes Park, Colorado. (Oral)
 15. C. S. Nnebuo, O. Nir, 2021, Real-time particle imaging reveals morphological effects in calcium phosphate membrane fouling, *Euromembrane*, The European Membrane Society, Copenhagen. (Oral)
 16. M. W. Atsbha, O. Nir, 2021, Recovery of nitrogen from Pharmaceutical wastewater effluent as fertilizer using hollow fiber liquid-liquid membrane contactors, *Euromembrane*, The European Membrane Society, Copenhagen. (Oral)
 17. R. Liu, O. Nir, 2021, Recovering high-value P-K fertilizer from effluents by integrating adsorption and electrodialysis with bipolar membranes, *Euromembrane*, The European Membrane Society, Copenhagen. (Poster)

18. L. Monat, O. Nir, 2022, Cleaner production of phosphoric acid using electro dialysis, *Desalination for the Environment: Clean Water and Energy*, European Desalination Society, Las Palmas, Spain. (Oral)
 19. O. Nir, 2022, New aspects of concentration-polarization in reverse osmosis and nanofiltration: theory and practice, *Desalination for the Environment: Clean Water and Energy*, European Desalination Society, Las Palmas, Spain. (Oral)
 20. O. Nir, 2022, Progress in understanding concentration-polarization in nanofiltration, *Nanofiltration 2022*, Karlsruhe Institute of Technology, Achalm, Germany. (*Invited oral presentation*)
 21. Y. S. Oren, V. Freger, O. Nir, 2021, New compact expressions for concentration-polarization of trace-ions in pressure-driven membrane processes *Nanofiltration 2022*, Karlsruhe Institute of Technology, Achalm, Germany (Poster, recieved Best Poster Award)
 22. M. Chaudhary, A. Ronen, M. Sela Adler, O. Nir, Mixed Matrix Composite Nanofiltration Membranes for Enhanced Removal of PFOA from Contaminated Water, *Nanofiltration 2022*, Karlsruhe Institute of Technology, Achalm, Germany (Oral)
 23. C. S. Nnebuo, O. Nir, Backwashable hollow-fibre polyelectrolyte multilayer membranes enable high recovery effluent nanofiltration, *MELPRO 2022*, Prague (Oral)
 24. S. Das, A. Chandra, J. Gilron, O. Nir, Polyaniline modified Cation Exchange membrane for improved monovalent selectivity, *MELPRO 2022*, Prague (Oral)
 25. A. Chandra, S. Das, J. Gilron, O. Nir A Facile Tuning of Polyelectrolyte Cross-linking Chemistry for Improved Permselectivity and Stability of a Cation Exchange Membrane, *Euromembrane 2022*, Sorrento, Italy. (Oral)
- (c) Presentations at informal international seminars and workshops
1. 2015, *Network Young Mem-brains (NYM)*, an event for young membrane researchers, RWTH-Aachen University, Advanced modeling and simulation of reverse osmosis processes, Germany.
- (d) Seminar presentations at universities and institutions
1. 2015, Chemical Process Engineering (CVT), RWTH-Aachen University, Boron removal by reverse osmosis membranes: efficient removal at high pH and advanced process simulation.
 2. 2015, Israel Geological Survey, Improving the accuracy of ocean paleo-pH reconstruction by the boron stable isotopes proxy method.
 3. 2015, Zuckerberg Institute for Water Research, Ben-Gurion University in the Negev, The Boron challenge in seawater desalination by reverse-osmosis: Efficient single-pass removal at high pH and advanced process modeling & simulation.
 4. 2019, Mechanical Engineering, Northwestern University, Advanced process simulation of reverse-osmosis
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