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RESUME

Full name: Ori Lahav
I.D. No.: 058315995
Date and place of birth: September 28, 1963, Haifa, Israel.
Marital Status: Married + 3
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Academic Degrees

1992	B.Sc., Water Engineering, Faculty of Agricultural Engineering, Technion - Israel Institute of Technology. *Cum Laude*
1994	M.Sc., Environmental Engineering, Faculty of Civil Engineering, Technion - Israel Institute of Technology.
1998	Ph.D., Environmental Engineering, Faculty of Agricultural Engineering, Technion – Israel Institute of Technology.

Academic Appointments

4.2018 - present	Guangdong-Technion (GTIIT, Shantou, China). Head of the Environmental Engineering department.
4.2018 – 10.2020	Guangdong-Technion (GTIIT, Shantou, China). Dean of Undergraduate Studies
2016	Albert and Ann Mansfield Chair in Water Science and Technology.
2014	Professor, Faculty of Civil and Environmental Engineering, Technion, Israel Institute of Technology.
1.2015 – 9.2017	Head of the Grand Water Research Institute, Technion.
2007 – 2014	Associate Professor, Faculty of Civil and Environmental Engineering, Technion, Israel Institute of Technology.
2013 –2014	Visiting Scholar, Duke University (sabbatical)
2003 –2007	Senior Lecturer, Faculty of Civil and Environmental Engineering, Technion, Israel Institute of Technology.
2001 – 2003	Senior Research Associate, Faculty of Agricultural Engineering, Technion, Israel Institute of Technology.
1999 – 2001	Post-Doctoral Fellow, University of Cape Town, Civil Engineering Department. Host: Prof. Richard Loewenthal.

Research interests

Aquatic chemistry; Water and wastewater treatment; focus on physical-chemical process development; Desalination; Aquacultural engineering

Teaching Experience

Aquatic Chemistry (undergraduate level). March 2003 – present.
Chemistry of environmental processes (graduate level). 2007 - 2012.
Subsurface Drainage Engineering (undergraduate level). 2002 - 2006.
Urban Drainage Engineering (undergraduate + graduate level). 2002 - 2006.
Water and Wastewater Treatment 1 (graduate level): October 2014 – 2017.
Advanced Water Treatment (graduate level): 2019 -
Fundamentals of Chemistry (1st semester undergrad 5-credit introductory chemistry course). GTIIT, 2017 & 2018.

Public Professional Activities

2004-2007 Member of both the Physical Quality and Water Treatment Sub-Committees of the Committee for the Revision of Potable Water Quality (Adin's Committee), Israeli Ministry of Health (Author of the new Israeli criteria for quality of desalinated water).

2006-2008 Member of the Research Committee (Water and Soil Research), Ministry of Agriculture, Israel.

2007-2007 Member of the Research Committee of BARD (US-Israel Bi-national Agricultural Research and Development Fund)

2008-2012 Member of the Research Committee (Increasing water usage efficiency), Ministry of Agriculture, Israel.

2012 - 2014 Member of editorial board of the Israeli Journal Water and Irrigation.

2013 Member of the ISF research committee (Chemical and Environmental Eng.).

2014 - 2015 Member of the Advisory Committee for Drinking Water Quality, Ministry of Health, Israel

2014 - 2015 Member of the Editorial Board of the journal "Scientific Reports" (IF = 5.07). Nature Publishing Group, England.

2014 - 2015 Member of the Israeli Council for Higher Education Committee for evaluating the new (MSc) Water study program proposed by Tel Hay College.

2016 - Member of the Editorial Board of the journal "ChemEngineering" (ISSN 2305-7084), MDPI, Switzerland.

Technion/Faculty activities

2008 – 2012	Chairman of the departmental Graduate Committee.
2008 –2012; 2014 - 2015	Member of the Faculty Graduate Committee.
2004-2008; 2011-2012	Member of the Research Committee, GWRI.
2012	Member of the Grand Water Institute Equipment Committee.
2014 – 2015; 2016	Faculty representative at TGIT program.
2015 -	Head of research centers, Department of Env., Water & Agri. Eng.

Army Service (IDF): Armored forces. Released from active duty in 2005 at Lieutenant Colonel.

GRADUATE STUDENTS

Completed theses

1. Yuval Alfia. M.Sc. 2004. Investigation of the clogging mechanism, and development of operation parameters for a passive-aeration novel biological vertical bed.
2. Amitai Sagiv. M.Sc. 2004. Modification, calibration and verification of a model depicting hydrogen sulfide emission rates in gravity sewers.
3. Sivan Klas. M.Sc. 2005. Development of a cost effective and simple process for nitrate removal from intensive aquaculture systems by denitrification using intrinsic organic carbon source.
4. Dan Firer. M.Sc. 2006. Investigation of the use of iron salts to control odor and corrosion in urban sewer systems (co-supervision with E. Friedler).
5. Tsabar Mor. M.Sc. 2007. Removal of $NH_{3(g)}$ from broiler house emissions and its subsequence use as fertilizer.
6. Inbal Abraham. M.Sc. 2007. Development of a general method for calculation and allocation of river strips for a spatial drainage system.
7. Gendel, Yuri. M.Sc. 2007. Investigation of a chemical-biological process for H_2S removal from biogas emissions.
8. Iris Bar-Massada. M.Sc. 2007. Study of the parameters that affect anaerobic ammonia oxidation (anammox) as part of a process aimed at complete removal of nitrogen species from recirculating aquaculture systems.

9. Somaya Falah. M.Sc. (2009) Deliberate struvite precipitation from the supernatant of sludge dewatering facilities for both phosphorus recycling and decrease in nutrients load on wastewater treatment plants.
10. Halil Eid. M.Sc. (2009). Calibration and implementation of "QUEST" method as a basis for developing a tool for the assessment of sewer exfiltration and its minimization (co-supervision with E. Friedler).
11. Naomi Levi. M.Sc. (2009) Investigation of the kinetics of low-pH ferrous oxidation by O_2 as part of a process aimed at $H_2S_{(g)}$ removal from biogas.
12. Liat Birnhack. Ph.D. (2010) Development and modeling of a cost effective and advantageous post treatment process for desalinated water.
13. Klas Sivan. Ph.D. (2010) Removal of heavy metals by their stable incorporation into ferrites at ambient temperature: process development and modeling.
14. Elya Ofer M.Sc. (2010) Stabilization of the ferrite crystal as part of a process aimed at heavy metals removal from industrial wastes at ambient temperature. Co-supervision with Yael Dubowski.
15. Noga Fridman. M.Sc. (2010) Minimization of bromate formation as part of the operation of a non-thermal-plasma method for oxidation of refractory organic compounds.
16. Mizrahi Anat. M.Sc. in Tel Hay College. (2011) Removal of Methyl Tert-Butyl Ether (MTBE), Trichloroethylene (TCE) and Azo dye from drinking water by a new plasma-based advanced oxidation technology: a kinetics study. Co-supervision with I. Tal-Or (Tel Hai college).
17. Shaul Oren. M.Sc. (2011) Development of a post treatment process for magnesium addition to inorganic carbon rich desalinated brackish water.
18. Yuri Gendel Ph.D. (2012). Indirect ammonia electro-oxidation: Reaction mechanism investigation and implementation on intensive aquaculture ponds.
19. Yuval Shwartz. M.Sc. (2013) Development of a process for treatment of swine wastes using ion exchange and electrochemical regeneration.
20. Tali Ben Dov. M.Sc. (2013) Development of an electrochemical process for regeneration of ion exchange resins used for ammonia removal in industrial processes.
21. Amir Zivan. MSc. (2013) Development of a cost effective and environmental method for commercial breeding of mullet fish (Mugil cephalus) in low-salinity waters.
22. Raz Ben Asher. (2013) M.Sc. Development of a biological process for combined removal of nitrogen and phosphorus compounds from effluents of intensive aquaculture systems.
23. Marina Telzhensky, Ph.D. (2015) Selective separation of Mg^{2+} from seawater via ion-exchange assisted nanofiltration: process development and determination of controlling ion-separation mechanisms.
24. Oded Nir. PhD. (2015). Removal of boron from seawater by reverse osmosis membranes: new operational approach and advanced process simulation.
25. Orly Lehman. M.Sc. (2015) 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.
26. Paz Nativ. MSc. (2016) Membrane based methods for selective separation of Mg^{2+} and Ca^{2+} ions from seawater, for improving the quality of soft and desalinated waters
27. Liron Ophek. MSc. (2016) Improving the energy efficiency of combined boron and TDS rejection within seawater reverse osmosis systems.
28. David Lehman. MSc. (2017) Separation of NH_4^+ from municipal wastewater and oxidation to $N_{2(g)}$ using an electrochemically-regenerated ion exchange process.
29. Yaron Aviezer. MSc. (2017) Development of a process of preparation of raw material for a thermal reduction retort, for the production of solid magnesium from sea water RO brines.
30. Inbal Fux. MSc. (2017) A sustainable physical-chemical method for removing nitrate from drinking water.

31. Hadas Segal. MSc. (2018) Development of a second pass as part of an energy efficient seawater RO process aimed at boron and TDS removal.
32. Noam Harlev. MSc. (2018, BGU) Acidification, de-carbonization and in-situ free chlorine generation in seawater; a potential pretreatment for biofouling control in SWRO membranes. Moshe Herzberg as principal supervisor.
33. Raz Ben Asher. Ph.D. (2018) Novel and advantageous physical-chemical treatment approach for growing warm-water fish in recirculated aquaculture systems (RAS).
34. Noa Rolider. M.Sc. (2018) Improvement and quantitative assessment of a physical-chemical approach for growing striped-bass in a freshwater recirculated aquaculture system.

Theses in progress

35. Yaron Aviezer. Ph.D. Kinetic and mechanistic investigation of supercritical water oxidation of hazardous species in RO brine of secondary municipal effluents. Expected graduation: April 2021.
36. Shimon Somer. MSc. Rehabilitation of water distribution systems following a cadmium contamination intrusion. End of 2020.
37. Yoni Graber. MSc. Operational and economic optimization of a process aimed at adding Mg^{2+} to desalinated water. End of 2021.
38. Chen Dagan. Ph.D. Preparation and characterization of novel polymer-based membranes for selective separation of alkali metal ions from seawater. Expected graduation, June 2024.

Supervision of research staff

Emily Shlafman (B.Sc.). October 2002 to October 2003; Sharon Molchanov (M.Sc.). September 2004 to September 2006; Sivan Klas (M.Sc.). January 2005 to September 2006; Beni Lew (Ph.D.) April 2007 to April 2008; Adina Moshe (M.Sc.). October 2006 to December 2008; Irina Zuev (Ph.D.). Post doc, April 2009 – December 2009; Liat Birnhack (Ph.D). Research Associate. March 2011 – present; Samuel Tang (Ph.D). Post Doc. November 2015 – November 2017. Noga Fridman-Bishop (PhD), Post Doc. October 2017 – May 2020. Raz Ben Asher (PhD), November 2018 – present.

Research Grants (External sources)

1. 2003 – 2006, Lake Kineret Drainage Authority, $75,000. Research on vegetated channels from both hydraulic and ecological perspectives (PIs: Shavit, Lahav, Carmel).
2. 2003 – 2004, Israel Oceanographic and Limnological Research Ltd., $5500. Development of a cost effective and simple process for nitrate removal from intensive aquaculture system by denitrification using intrinsic carbon source.
3. 2004 – 2007, BARD, $167,000. Elimination of Emissions of Ammonia and Hydrogen Sulfide from Confined Animal and Feeding Operations (CAFO) Using an Adsorption/Liquid-Redox Process with Biological Regeneration (PIs: Lahav, Broday).
4. 2005 – 2006, Haifa municipality + Keren Sapir: Prevention of odors and corrosion from gravity sewers – investigation into engineering and economical aspects. $32,000, (PIs: Friedler, Lahav).
5. 2005 – 2008, Min. of the Environment, Israel. $55,000. Calibration and implementation of "QUEST" method as a basis for developing a tool for the assessment of sewer exfiltration and its minimization (PIs: Friedler, Lahav).
6. 2005 – 2008, $111,000, Ministry of Agriculture: Monitoring of Recirculated Aquaculture Systems.
7. 2005– 2008, Ministry of Agriculture. Optimal management and maintenance of recirculated aquaculture systems. (PIs: Lahav, Mozes, Halachmi). Technion's part = $18,600 (out of $53,000).

8. 2005 – 2006, Israeli Water Commission office. $9,000. Theoretical investigation of the "Red Water" phenomenon.
9. 2006 – 2009, US-AID, MERC. Land-based Mariculture Wastewater Treatment - keeping the Red Sea clean. In collaboration with National Center for Mariculture in Eilat and Jordanian researchers from Aqaba. Technion's part (PI: Lahav) = $54,000 (out of $500,000).
10. 2006 – 2008, Mekorot, $19,000, Studies into struvite precipitation from wastewater treatment plants.
11. 2007 – 2008. Gurwin Fund, $35,000. Development of a cost effective and advantageous post treatment process for desalinated water.
12. 2007 – 2010, BMBF-MOS, $170,000. Removal of heavy metals by their stable incorporation into ferrites at ambient temperature: process development and modeling, and application to wastewater from a plating and galvanization industries (PIs: Lahav, Dubovski).
13. 2007 – 2009. Mekorot. $70,000 Development of an analytical technique and investigation of odor removal from drinking water (PIs Dubowski, Lahav).
14. 2007 – 2009. Development of a novel cost effective post-treatment process for producing balanced nutrients composition and stabilized drinking water from desalinated and soft waters. Startup funding from private investors. In collaboration with Technion's R&D Foundation. Total startup sum: $1,400,000 for two years.
15. 2007 – 2008. Tahal. $17,500. Theoretical and empirical investigation into the effects of blending desalinated water with other water sources (With Dr. Ostfeld).
16. 2009. A novel process for removal of ammonia from piggery wastes. Renewable Resources Ltd. 150,000 NIS (~$35,000).
17. Minimization of bromate formation as part of a plasma-based process advanced oxidation technology. AquaPure Ltd. 50,000 NIS (~$13,000). 1.1.09 – 1.1.11.
18. 2009 – 2012. Assessment of Shamir well water for agriculture. 550,000 NIS (~$140,000). With Prof. Shaviv and Prof. Dozoretz.
19. 2010. Renewable Resources. $15,000. "Development of a novel cost effective post-treatment process for desalinated water".
20. 2010-2012. Agricultural Ministry 279,000 NIS (~$75,000), RAS monitoring project (continuation).
21. 2010 – 2013 BARD. $155,000. A novel physical-chemical-biological treatment process for swine wastes (with Prof. Green).
22. 2010 - 2014 ISF. $185,000. Selective separation of Mg^{2+} from seawater via combined ion-exchange and nanofiltration while minimizing Cl^- concentration. With Profs. Dozoretz and Semiat.
23. 2010 – 2013 Ministry of Agriculture. 300,000 NIS (~$80,000). Promoting the cultivation of the Dakar fish species.
24. BMBF/MOS 2011-2012 (one year project), 80,000 Euro. Extraction of phosphorus compounds from wastewater for reuse as struvite fertilizer, via dosage of cheap seawater-based Mg^{2+} ions, separated using a novel NF-based method (with Prof. Eisen).
25. 2013-2015, BMBF/MOS (two-year continuation, separate research proposal), 123,000 Euro. Extraction of phosphorus compounds from wastewater for reuse as struvite fertilizer, via dosage of cheap seawater-based Mg^{2+} ions, separated using a novel NF-based method (with Prof. Eisen).
26. 2014-2017, Israeli Ministry of Agriculture, Chief Scientist Fund, 375,000 NIS ($107,000). Development and testing of a novel physico-chemical based process for growth of valuable fish in recirculating aquaculture systems.
27. 2014-2018, ISF, 704,000 NIS ($206,000). Development, calibration, evaluation and application of a new model for simulating weak-acid species cross-membrane reactive-transport in reverse osmosis: $B(OH)_3$ as a case study.

28. 2015-2018, Ministry of Science and Technology, 1,594,000 NIS (~$400,000) Development of a thermal-reduction-based technology for producing solid magnesium ($Mg_{(s)}$) from Mg(II) separated from seawater RO brines. With Prof. Egyon (BGU, 48% of budget).
29. 2016-2019, BMBF/MOST, 165,000 Euro. Separating multivalent and monovalent ions and implementation in FCDI/RED. Co-PI: Youri Gendel.
30. 2016-2017, Uzi and Michal Halevi fund for innovative applied research at the Technion. $20,000. Development of a Nanofiltration-DiaNanofiltration based method for selective separation of Mg and Ca ions and its incorporation in brackish and SWRO applications.
31. 2017-2020. Israeli Ministry of Science and Technology. Rehabilitation of water distribution systems following a chemical contamination intrusion –a solution based on water quality and water distribution systems modeling. 750,000 NIS (~$215,000), with Avi Ostfeld.
32. 2018-2021 Israeli Ministry of Energy. 600,000 NIS (~$170,000). Minimization of specific energy consumption in desalination plants. With Oded Nir, BGU.
33. 2019-2020. EIT Food, as part of EU funding. 420,000 Euro. A new method for increasing loads in transportation of aquaculture species. With Youri Gendel.
34. 2019-2021. Biofishency. 950,000 NIS (~$260,000). A new RAS approach for growing edible fish. With Youri Gendel.
35. 2020 – 2021, Uzi and Michal Halevi fund for innovative applied research at the Technion. $20,000. Development of a new water treatment method for improving the longevity and bio-density of live aquaculture species' transportation.
36. 2020 – 2022, BIRD, $72,000. A new process for maximizing the recovery ratio of very hard, sulfate laden, brackish water.

PUBLICATIONS

Theses

Ph.D.: A physical-chemical-biological process for the removal of nitrogen compounds from secondary effluents (1998).
M.Sc.: Reuse of wastewater effluents in the urban sector in Israel (1994).

Papers in peer reviewed journals

Google Scholar: https://scholar.google.com/citations?user=CBWQ9es-AAAAJ&hl=en
Web of Science: https://publons.com/researcher/2906359/ori-lahav/metrics/
Scopus: https://www.mendeley.com/impact/ori-lahav/

1. Green M., Mels A., Lahav O., Tarre S. (1996) Biological - ion exchange process for ammonium removal from secondary effluent. *Water Sci. Technol*. 34(1-2): 449-458.
2. Lahav O., Green M. (1998) Ammonium removal using ion exchange and biological regeneration. *Water Research*. 32(7): 2019-2028.
3. Lahav O and Loewenthal RE (2000) Rapid communication. Measurement of VFA in anaerobic digestion: the five-point titration method revisited. *Water SA*, 26(3): 389-393.
4. Lahav O., Green M. (2000) Bioregenerated ion exchange process: The effect of the biofilm on the ion exchange capacity and kinetics. *Water SA*, 26(1): 51-58.
5. Lahav O., Green M. (2000) Ammonium removal from primary and secondary effluents using a bioregenerated ion-exchange process. *Water Sci. Technol*., 42(1-2): 179-186.
6. Lahav O., Artzi E., Tarre S., Green M (2000) Ammonium removal using a novel unsaturated-flow biological filter with passive aeration. *Water Research* 35(2): 397-404.
7. Lahav O, Morgan BE and Loewenthal RE (2001) Measurement of pH, alkalinity and acidity in ultra-soft waters. *Water SA*, 27(4), 423-431.
8. Morgan B.E., Loewenthal R.E. and Lahav O. (2001) Rapid Communication. Fundamental study of a one-step Ambient Temperature Ferrite Process for treatment of acid mine drainage waters. *Water SA*, 27(2) 277-282.

9. Green M., Ruskol Y., Lahav O., Tarre S. (2001) Chalk as the carrier for nitrifying biofilm in a fluidized bed reactor. *Water Research* 35(1):284-290.
10. Lahav O., Morgan B.E., Loewenthal R.E. (2002) Rapid, simple and accurate method for measurement of VFA and carbonate alkalinity in anaerobic reactors. *Environmental Science and Technology* 36(12), 2736-2741.
11. Lahav O. and Loewenthal RE. (2002) Note on "Measurement of pH, alkalinity and acidity in ultra-soft waters". *Water SA,* **28**(3), 346 – 348.
12. Green M, Denekamp N, Tarre S., Lahav O (2002) Production of gaseous nitrogen in a novel process for ammonium removal. *Water Science & Technology* 46(1-2): 215-222.
13. Morgan B.E., Hearne G., Loewenthal R.E., Lahav O. (2003) A seeded ambient temperature ferrite process for the treatment of AMD waters: magnetite formation in the presence of high calcium concentration under steady state conditions. *Water SA* 29(2), 117-124.
14. Lahav O, Morgan BE, Hearne G, and Loewenthal RE (2003) One-step ambient ferrite process for treatment of AMD waters. *Journal of Environmental Eng*., 129(2), 155-161.
15. Green M., Gidron E., Lahav O., Tarre S. (2004) Treatment of dairy wastewater using a vertical bed with passive aeration. *Environmental Technology,* 25(10), 1123-1131.
16. Lahav O., Lu Y., Shavit U., Loewenthal R.E. (2004) Modeling $H_2S_{(g)}$ emission rates in gravity sewage collection systems. *Journal of Environmental Eng*., 130(11), 1382-1390.
17. Lahav O., Ritvo G., Slijper I, Hearne G and Cochva M. (2004) The potential of using iron-oxide rich soils for minimizing the detrimental effects of H_2S in aquaculture systems. *Aquaculture.* 238(1-4), 263-281.
18. Lahav O., Morgan B. (2004) Appropriate methodologies for monitoring of anaerobic digestion in developing countries - a Review. *Journal of Chemical Technology and Biotechnology,* 79**,** 1331-1341.
19. Lahav O, Shlafman E., Cochva M. (2005) Determination of low citric acid concentrations in a mixture of weak acid/bases. *Water SA,* 31(4):1-6.
20. Morgan B.E., Lahav O., and Loewenthal R.E. (2005) Advances in seeded ambient temperature ferrite formation for treatment of acid mine drainage. *Environmental Science and Technology*, 39(19), 7678-7683.
21. Lahav O. (2005) Note on "Modeling Hydrogen sulfide emission rates in gravity sewage collection systems". *Journal of Environmental Engineering*, ASCE, 131(12), 1762-1764.
22. Admon S., Tarre S., Sabbah I., Lahav O. and Green M. (2005) Treatment of pre-settled municipal wastewater using a passively aerated vertical bed. *Environmental Engineering Science.* 22(6), 707-715.
23. Lahav O, Sagiv A., Friedler E. (2006) A different approach for predicting $H_2S_{(g)}$ emission rates in gravity sewers. *Water Research*, 40(2), 259-266.
24. Lahav O., Binder A., Friedler E. (2006) A different approach for predicting reaeration rates in gravity sewers and completely mixed tanks. *Water Environ. Research*, 78(7*)*, 730-739.
25. Eshchar M., Lahav O, Mozes N., Peduel A., Ron B. (2006) Intensive Fish Culture at High Ammonium and Low pH. *Aquaculture*, 255(1-4), 301-313.
26. Friedler E., Lahav O., Jizhaki H., Lahav T. (2006) Study of urban population attitudes towards various wastewater reuse options: Israel as a case study. *Journal of Environmental Management,* 81: 360-370.
27. Klas S., Mozes N., Lahav O. (2006) Development of a single-sludge denitrification method for nitrate removal from RAS effluents: lab-scale results vs. model prediction. *Aquaculture,* 259, 342-353.
28. Klas S., Mozes N., Lahav O. (2006) A conceptual, stoichiometry-based model for single-sludge denitrification in recirculating aquaculture systems. *Aquaculture*, 259, 328-341.
29. Friedler E., Lahav O. (2006). Centralized Urban Wastewater Reuse: What is the Public Attitude? *Water Science and Technology*, 54(6-7):423-430.

30. Lahav O., Birnhack L. (2007) Quality criteria for desalinated water following post treatment. *Desalination,* 207, 286-303.
31. Molchanov S., Gendel Y., Ioslvich I., Lahav O. (2007) An improved experimental and computational methodology for determining the kinetic equation and extant kinetic constants of Fe(II) oxidation by *Acidithiobacillus ferrooxidans*. *Applied and Environmental Microbiology*, 73(6), 1742-1752.
32. Alfia Y., Green M., Lahav O. (2007) Modeling the aeration efficiency of a passively aerated vertical-flow biological filter. *Journal of Environ. Engineering, ASCE,* 133(10), 970-978.
33. Morgan B.E., Lahav O. (2007) The effect of pH on the kinetics of spontaneous ferrous oxidation by O_2 in aqueous solution – basic principles and a simple heuristic description. *Chemosphere,* 68(11), 2080-2084.
34. Birnhack L., Lahav O. (2007) A new post treatment process for attaining Ca^{2+}, Mg^{2+}, SO_4^{2-} and alkalinity criteria in desalinated water. *Water Research*, 41(17), 3989-3997.
35. Yermiyahu U., Tal A., Ben-Gal A., Bar-Tal A., Tarchitzky J., and Lahav O. (2007) Rethinking desalinated water quality and agriculture. *Science,* 318, 920-921.
36. Birnhack L., Penn R., Lahav O. (2008) Quality criteria for desalinated water and introduction of a novel, cost effective and advantageous post treatment process. *Desalination,* 221, 70-83.
37. Firer D., Friedler E., Lahav O. (2008) Control of sulfide in sewer systems by dosage of iron salts: comparison between theoretical and experimental results, and practical implications. *Science of the Total Environment,* 392, 145-156.
38. Petrick L., Dubowski Y., Klas S., Lahav O. (2008) Incorporation of Co^{2+} into ferrite lattice: effects of inflow Fe^{2+}/Co^{2+} ratio, temperature and intermediate solid ferrous species concentration. *Water, Air and Soil Pollution,* 190(1-4), 245-257.
39. Lahav O., Mor T., Heber A.J., Molchanov, S., Ramirez J.C., Li C., Broday D. (2008) A new Approach for Minimizing Ammonia Emissions from Poultry Houses. *Water, Air and Soil Pollution*, 191(1-4), 183-197.
40. Seginer I., Mozes N., Lahav O. (2008) Optimal water refreshment rate in recirculating aquaculture systems. *Aquacultural Engineering*, 38, 171-180.
41. Gendel Y., Lahav O. Accurate determination of Fe(II) concentrations in the presence of a very high soluble Fe(III) background. (2008) *Applied Geochemistry, 23*, 2123-2129.
42. Lahav O., Salomons E., Ostfeld A. (2009) Chemical stability of inline blends of desalinated, surface and ground waters: A plea for higher alkalinity values in desalinated water. *Desalination,* 239, 334-345.
43. Lahav O., Bar Massada I., Yackoubov D., Zelikson R., Mozes N., Tal Y., Tarre S. (2009) Quantification of anammox activity in a denitrification reactor for a recirculating aquaculture system. *Aquaculture*. 288:76-82.
44. Lew B., Cochva M. and Lahav O. (2009) Potential effects of desalinated water quality on the operation stability of wastewater treatment plants. *Science of the Total Environment*, 407, 1404-2410.
45. Birnhack L., Fridman N., Lahav O. (2009) Potential applications of quarry dolomite for post treatment of desalinated water. *Desalination and Water Treatment,* 1, 58-67.
46. Penn R., Birnhack L., Adin A., Lahav O. (2009) New desalinated drinking water regulations are met by an innovative post-treatment process for improved public health. *Water Science and Technology - Water Supply* 9(3):225-231.
47. Even-Ezra I., Mizrahi A., Gerrity D., Snyder S., Salveson A., Lahav O. (2009) Application of a novel plasma-based advanced oxidation process for efficient and cost effective destruction of refractory organics in tertiary effluents and contaminated groundwater. *Desalination and Water Treatment* 11:1–9.
48. Gendel Y., Levi N., Lahav O. (2009) $H_2S_{(g)}$ removal using a modified, low-pH liquid redox sulfur recovery (LRSR) process with electrochemical regeneration of the Fe catalyst couple. *Environmental Science and Technology,* 43(21):8315-8319.

49. Birnhack L., Penn R., Oren S, Lehman O., Lahav O. (2010) Pilot scale evaluation of a novel post-treatment process and introduction of a modification based on CO_2-calcite dissolution to attain a wide range of product water qualities. *Desal. & Water Treatment* 13, 128-136.
50. Birnhack L., Oren S., Lehman O., Lahav O. (2010) Development of an additional step to CO_2-based $CaCO_{3(s)}$ dissolution post treatment processes for cost effective Mg^{2+} supply to desalinated water. *Chemical Engineering Journal*, 160:48-56.
51. Lahav O., Kochva M. and Tarchitzky J. (2010) Potential drawbacks associated with agricultural irrigation with treated wastewaters from desalinated water origin and possible remedies. *Water Science and Technology*, 61(10):2451-2460.
52. Birnhack L. Shlesinger N., Lahav O. (2010) A cost effective method for improving the quality of inland desalinated brackish water destined for agricultural irrigation. *Desalination*, 262, 152-160.
53. Lew B., Phalah S., Sheindorf H., Kummel M., Rebhun M., Lahav O. (2010) Favorable operational conditions for obtaining high value struvite-product from filtrate of sludge dewatering systems. *Environmental Engineering Science*, 27(9), 733-741.
54. Gendel Y., Lahav O. (2010) A new approach to increasing the efficiency of low-pH Fe-electro-coagulation applications. *Journal of hazardous Materials*, 183, 596-601.
55. Birnhack L., Voutchkov N., Lahav O. (2011). Fundamental chemistry and engineering aspects of post-treatment processes for desalinated water - a review. *Desalination*, 273, 6-22.
56. Klas S., Dubowski Y., Pritosiwi G., Gerth J., Calmano W., Lahav O. (2011) Extent and mechanism of metal ion incorporation into moderate-temperature precipitated ferrites. *Journal of Colloid and Interface Science*, 358, 129-135.
57. Ostfeld A., Salomons E., Lahav O. (2011) Chemical Water Stability Inclusion in Optimal Operation of Water Distribution Systems. *J. of Water Resources Planning and Management*.
58. Fridman N., Lahav O. (2011) Formation and minimization of bromate ions within non-thermal-plasma advanced oxidation. *Desalination*, 280, 273-280.
59. Klas, S., Dubowski Y. and Lahav O. (2011) Chemical stability and extent of isomorphous substitution in ferrites precipitated under ambient temperatures. *Journal of Hazardous Materials*, 193, 59-64.
60. Telzhensky M., Birnhack L, Lehmann O., Windler E., Lahav O. (2011) Selective separation of seawater Mg^{2+} ions for use in downstream water treatment processes. *Chemical Engineering Journal*, 175, 136-143.
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Honors

- ❖ 2007 Hershel Rich Technion Innovation Award for the work "Development of a cost effective and advantageous post treatment process for desalinated water".
- ❖ 2007 Patent No.2005/10110, Acid Mine Drainage treatment was the recipient of the Innovation Fund Patent Incentive Fund award of the South African Government.
- ❖ 2010 Recipient of the France-Israel Foundation Award for Academic Excellence in the field of Water.

- ❖ 2014 Hershel Rich Technion Innovation Award for the work "A novel and advantageous approach for operating intensive fish production systems".
- ❖ 2016 Distinction of excellence for teaching the course "Aquatic Chemistry" at the Technion (upper 12% grade in students' survey).

Patents

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