BIOGRAPHICAL SKETCH

NAME **Eyal Kurzbaum**	Position: Senior Researcher Senior Lecturer

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
Tel-Hai Academic College, Israel.	B.Sc.	10.2004	Biotechnology and Environmental sciences
Tel Aviv University, Israel.	M.Sc.	1.2007	Ecology and environmental quality sciences.
Technion-Israel Institute of Technology, Israel.	Ph.D.	5.2011	Environmental Engineering
Israel Oceanographic & Limnological Research, The Yigal Allon Kinneret Limnological Laboratory.	Post-doc	12.2013	Microbiology

A. Personal Statement

MSc in ecology and environmental studies and a PhD in environmental microbiology in the wastewater treatment field, with 14 years of experience in environmental research. My research focuses on the study, development and optimization, of processes of water treatment for different kind of influents (domestic and industrial) and other issues in environmental microbiology such as microalgae ecology and water disinfection. Using laboratory and field pilot scale systems dedicated to wastewater treatment, research has been devoted to improve performances (removal of organics, phosphorus and nitrogen) intensify systems (compactness) and develop associations of conventional systems with innovative systems (such as biological and advanced oxidative processes, membranes and bacterial encapsulation and more).

Expertise and role in proposed research

I bring to this project my expertise in environmental microbiology and submerged culture bioprocess experience.

B. Positions and Honors

Positions and Employment

2011-2013	Head, Water Technologies Dep., Practical Engineering, Ohalo academic college.	Lecturer
2011	Project manager in a start-up company (Bio-castle)	
2011-2022	Lecturer - different courses (at Tel Hai, Ohalo and Kinneret academic collages)	Lecturer
2011-2013	Researcher (Post-doc) at Israel Oceanographic & Limnological Research.	
2013-2014	Head of Water Sciences Center, Kinneret college.	
2013-2018	Researcher at Shamir Research Institute	Researcher
2018-	Researcher at Shamir Research Institute (Environmental microbiology) and Senior Lecturer (rank from University of Haifa)	Senior Researcher and Senior Lecturer (rank from University of Haifa)

Other Experience and Professional Memberships

2006/12	Member, The Israeli Association for Aquatic Studies
2004-2010	Member, Israeli Society of Ecology and Environmental Sciences
2010-2017	Member, Israeli water association
2006	Member, Phycological Society of America
2009	Member, Israeli Space Society
2009-2018	Member, Israel Society for Microbiology

Honors

2008	Henrietta & Thelma Zackin award for excellent PhD students, The Grand Water Research Institute, Technion, Israel.
2008-9	The Rieger Foundation Program for Environmental Studies, California.
2010	Israel Society for Microbiology (ISM) Travel Award for active participation in an international conference (Portugal).
2010	Outstanding presentation contest award, Israeli water association conference, Israel.
2013	Distinguished Lecturer, The Kinneret Academic College.

C. Selected Peer-reviewed Publications (last five years):

1. **Kurzbaum E.**, Raizner Y., Cohen O., Suckeveriene R.Y., Kulikov A., Hakimi B., Iasur-Kruh L., Farber Y., Armon R., Menashe O. (2017) Encapsulated *Pseudomonas putida* for phenol biodegradation: Use of a structural membrane for construction of a well-organized confined particle. Water research, 121, 37–45. IF 7.051, WATER RESOURCES 1/90 (Q1). CITED BY:43

2. Vardanian A., **Kurzbaum E.**, Farber Y., Butnariu M., Armon R. (2018) Facilitated enumeration of the silicate bacterium *Paenibacillus mucilaginosus* comb. nov. (formerly *Bacillus mucilaginosus*) via tetrazolium chloride incorporation into a double agar-based solid growth medium. Folia Microbiologica, 63(3),401–404. IF 1.448, BIOTECHNOLOGY & APPLIED MICROBIOLOGY 133/162 (Q4). CITED BY:13

3. Kumar R., Raizner Y., Iasur Kruh L., Menashe O., Azaizehe H., Kapur S., **Kurzbaum E.** (2018) Extracellular laccase production and phenolics degradation by an olive mill wastewater isolate. Grasas y Aceites, 69(1), 231-241. IF 0.891, CHEMISTRY, APPLIED 55/71 (Q3). CITED BY:2

4. Cohen O., Gamliel A., Katan J., **Kurzbaum E.,** Riov J., Bar P. (2018) Controlling the seed bank of the invasive plant *Acacia saligna*: comparison of the efficacy of prescribed burning, soil solarization, and their combination. Biological Invasions, 20, 2875-2887. DOI: 10.1007/s10530-018-1738-8. IF 2.897, BIODIVERSITY CONSERVATION 12/59 (Q1). CITED BY:13

5. * Bar Oz Y., Mamane H., Menashe O., Cohen-Yaniv V., Kumar R., Iasur-Kruh L., **Kurzbaum E.** (2018) Treatment of olive mill wastewater using ozonation followed by an encapsulated acclimated biomass. Journal of Environmental Chemical Engineering, 6(4), 5014-5023. IF 4.300, ENGINEERING/CHEMICAL 29/143 (Q1). CITED BY:223

6. ***Kurzbaum E.,** Bar Shalom O. (2019) Phosphate removal from dairy wastewater and domestic effluents. Horizons in Geography, 95, 60-69. (Heb.) No IF in JCR. CITED BY: not known

7. *Cohen O., Bar P., Gamliel A., Katan J., **Kurzbaum E.**, Weber G., Schubert I., Riov J. (2019) Rain-based soil solarization for reducing the persistent seed banks of invasive plants in natural ecosystems - Acacia saligna as a model. Pest Management Science, 75(7), 1933-1941. IF 3.750, ANTOMOLOGY 7/101 (Q1). CITED BY:4

8. *Eckert W, Leunert F., Yacobi YZ, Köhler J. **Kurzbaum E**. (2019) Diurnal changes of the delayed fluorescence integral from a *Chlorella vulgaris* culture under ambient light. Photosynthetica, 7(1), 40-46. IF 2.562, PLANT SCIENCES 67/234 (Q2). CITED BY:0

9. ***Kurzbaum E.**, Iliasafov L., Kolik L., Starosvetsky J., Bilanovic D., Butnariu M., Armon R. (2019) From the Titanic and other shipwrecks to biofilm prevention: The interesting role of polyphenol-protein complexes in biofilm inhibition. Science of the Total Environment, 25, 658:1098-1105. doi: 10.1016/j.scitotenv.2018.12.197. IF 6.551, ENVIRONMENTAL SCIENCES 22/265 (Q1). CITED BY:18

10. ***Kurzbaum E.**, Raizner Y., Kuc M.E., Kulikov A., Hakimi B., Iasur-Kruh L., Menashe O. (2019) Phenol biodegradation by bacterial cultures encapsulated in 3D microfiltration-membrane capsules. Environmental Technology, 2019, 1-9. DOI: 10.1080/09593330.2019.1587005. IF 2.213, ENVIRONMENTAL SCIENCES 143/265 (Q3). CITED BY: 5

11. *Bilanovic D., Iliassafov L., **Kurzbaum E.**, Armon R. (2019) Preparing Xanthan-Chitosan Composites in Glycerol. ChemistrySelect, 4(21), 6451-6457. DOI: 10.1002/slct.201803368. IF 1.811, CHEMISTRY, MULTIDISCIPLINARY 111/177 (Q3). CITED BY:1

12. *Seroussi D.E., Rothschild N., **Kurzbaum E**., Yaffe Y., Hemo T. (2019) Teachers' Knowledge, Beliefs, and Attitudes about Climate Change. International Education Studies, 12(8), 33-45. No IF in JCR. CITED BY:10

13. *Vaddadi L.P., Avisar D., Vadivel V.K., Menashe O., **Kurzbaum E**., Cohen-Yaniv V., Mamane H. (2020) LP-UV-Nano MgO2 Pretreated Catalysis Followed by Small Bioreactor Platform Capsules Treatment for Superior Kinetic Degradation Performance of 17α-Ethynylestradiol. Materials, 13(1), 83. IF 3.623, METALLURGY ENGINEERING 17/80 (Q1). CITED BY:2

14. * Menashe O., Raizner Y., Kuc M.E., Cohen-Yaniv V., Kaplan A., Mamane H., Avisar D., **Kurzbaum E.** (2020) Biodegradation of the Endocrine-Disrupting Chemical 17α-Ethynylestradiol (EE2) by Rhodococcus zopfii and Pseudomonas putida Encapsulated in Small Bioreactor Platform (SBP) Capsules. Applied Sciences, 10, 336. IF 2.474, ENGINEERING, MULTIDISCIPLINARY 32/91 (Q2). CITED BY:5

15. ***Kurzbaum E.**, Raizner Y., Kuc M.E., Menashe O. (2020) Small bioreactor platform capsules provide persistent digestive biomass for continuous bioreactors operated under short hydraulic retention times. Journal of Water Process Engineering, 37, 101516. IF 5.485, WATER RESOURCES 9/98 (Q1). CITED BY: 3

16. *Shelly Y., Kuk M., Iasur Kruh L., Azarred S., **Kurzbaum E.** (2020) A new Acinetobacter isolate is an extremely efficient biofilm-formative denitrifying bacterium. Frontiers in Environmental Science, 8, 184. IF 4.581, ENVIRONMENTAL SCIENCES 82/274 (Q2). CITED BY: 0

17. *Menashe O., Rosen-Kligvasser J., **Kurzbaum E.**, Suckeverien R. (2020) Structural properties of a biotechnological capsule confined by a 3D-cellulose acetate membrane. Polymers for Advanced Technologies. 2020 1-9. IF 3.665, POLYMER SCIENCE 28/88 (Q2). CITED BY:2

18. *Azerrad S.P., **Kurzbaum E.** (2021) Chemical Decolorization of Textile Wastewater Via Advanced Oxidation Processes: Case Study of Key Parameters with Acid Blue 25. Water, Air, and Soil Pollution, 232(2) 1. IF 2.52 ENVIRONMENTAL SCIENCES 169/274 (Q3). CITED BY:0

19. *Fradkin O., Mamane H., Kaplan A., Menashe O., **Kurzbaum E.**, Betzalel Y., Avisar D. UV-LED combined with small bioreactor platform (SBP) for degradation of 17α-ethynylestradiol (EE2) at very short hydraulic retention time. Materials. Accepted 7.10.2021. IF 3.623, METALLURGY ENGINEERING 17/80 (Q1). CITED BY:0

20. **Shelly Y., Kuk M., Menashe O., Zeira G., Azerrad S., **Kurzbaum E.** (2021) Nitrate removal from a nitrate-rich reverse osmosis concentrate: Superior efficiency using the bioaugmentation of an Acinetobacter biofilm. Journal of Water Process Engineering, 44(4):102425. IF 5.485, WATER RESOURCES 9/98 (Q1).

21. ****Kurzbaum, E.** (2022). The Partial Contribution of Constructed Wetland Components (Roots, Gravel, Microorganisms) in the Removal of Phenols: A Review. Water, 14(4), 626. IF 3.103, Geography, PLANNING AND DEVELOPMENT (Q1).

22. **Kuc M, Azerrad S, Menashe O., **Kurzbaum E.** (2022) Efficient Biodegradation of Phenol at High Concentrations by Acinetobacter Biofilm under Very Short Hydraulic Retention Times. Journal of Water Process Engineering, 47, 102781. IF 5.485, WATER RESOURCES 9/98 (Q1)

23. ** Bar-Niv N., Azaizeh H., Kuc M., Azerrad S., Haj-Zaroubi M., Menashe O, **Kurzbaum E. (2022)** Advanced oxidation process UV-H2O2 combined with biological treatment for the removal and detoxification of phenol. Accepted 1.6.2022. Journal of Water Process Engineering, 44(4):102425. IF 5.485, WATER RESOURCES 9/98 (Q1).

Patents:

1) ***"Methods and systems for treating liquids including contaminant molecules" (PCT/IB2018/050990; US20210047216A1; PCT Filed 7.2.2019, PCT/IB2019/ 050990). Inventors: **Kurzbaum Eyal**, Mamane Hadas, Menashe Ofir, Avisar Dror

D. Research Support

Ongoing Research Support

Role in Research	Other Researchers (Name & Role)	Title	Funded by (**C** = Competitive Fund)	Amount	Years
PI	Nativ Dudai Co-PI, David Ezra Co-PI	Characterization and application of antimicrobial compounds in microalgae against phytopathogens	C= Ministry of Agriculture and Rural Development	900,000 NIS (my part 450,000)	2017-19
PI		A new biotechnological approach for nitrate and ammonium removal from wastewater using membrane-based bacterial encapsulation	V= German-Israeli Foundation for Scientific Research and Development (**GIF**)	100,000 NIS	*2021
Co-PI	Consortium	Disinfection by product treatment in drinking water	Horizon	4 million euro total (my part 200,000)	2022-2025

Completed Research Support

Role in Research	Other Researchers (Name & Role)	Title	Funded by (**C** = Competitive Fund)	Amount	Years
PI	-	Water disinfection using electromagnetic field	Hydroflow, USA	20,000 NIS	2013
PI	Pinhas fine Co-PI	Phosphorus removal from wastewater	Katzir Keshet, Israel	40,000 NIS	2014
PI	Guy Rubinshtain Co-PI	Phosphorus removal from fish pond water	C=Ministry of Agriculture and Rural Development, Israel	2500 NIS	2014
PI	Guy Rubinshtain	Phosphorus	C=Ministry of	30,000	2015

	Co-PI	removal from fish pond water	Agriculture and Rural Development, Israel	NIS	
PI	Guy Rubinshtain Co-PI, Oded Bar Shalom Co-PI	Phosphorus removal from fish pond water	C=Ministry of Agriculture and Rural Development, Israel	18000 NIS	2016
Co-PI and coordinator	Ofir Menashe PI, Peleg Eistrhan Co-PI,	New technology for Hormones reduction from wastewaters	C=Ministry of Science, Technology and Space	981,000 NIS (275,000 NIS)	2016-18
Co-PI	Pinhas Fine Co-PI, Oded Bar Shalom PI	Phosphorus removal from wastewater	C=Ministry of Science, Technology and Space	250,000 NIS	2016-18
PI	Ofir Menashe Co-PI, Robert Armon Co-PI	New Biofilter for Phosphorus and nitrogen removal in dairy wastewater	C=Ministry of Science, Technology and Space	250,000 NIS	2016-18