

CURRICULUM VITAE

• **Personal Details**

Name: Hadar Ben-Yoav
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• **Education**

B.Sc. 2001–2004, Tel Aviv University, Multidisciplinary program in Physics and Biological Sciences

M.Sc. 2004–2006, Tel Aviv University, Department of Biotechnology
Advisor: Professor Amihay Freeman
Title of thesis: “Antimicrobial activity of silver-glucose oxidase hybrid”

Ph.D. 2006–2010, Tel Aviv University, Department of Electrical Engineering - Physical Electronics, School of Electrical Engineering
Advisors: Professor Yosi Shacham-Diamand (Electrical Engineering - Physical Electronics) and Professor Amihay Freeman (Biotechnology)
Title of thesis: “Electrochemical whole-cell low profile bio-chips”

• **Employment History**

2021–Present Associate Professor
Department of Biomedical Engineering, Faculty of Engineering Sciences,
Ben-Gurion University of the Negev, Beer-Sheva, Israel
2023–Present Visiting Scientist
Research Laboratory of Electronics (RLE), Massachusetts Institute of
Technology, MA, United States.
2015–2021 Senior Lecturer
Department of Biomedical Engineering, Faculty of Engineering Sciences,
Ben-Gurion University of the Negev, Beer-Sheva, Israel
2011–2015 Post-Doctoral Research Associate
Department of Electrical and Computer Engineering, Institute of Systems
Research, University of Maryland College Park, MD, United States
2010–2011 Research Associate, “Printed Electronics” project manager
RAMOT at Tel Aviv University LTD., Israel
2004–2005 Research Assistant

fMRI Research Center, Ichilov Hospital, Israel
 2002–2004 Research Assistant
 Nanoscience and Nanotechnology Center, Tel Aviv University, Israel

• **Professional Activities**

(a) Positions in Academic Administration

2020–Present Member, Steering Committee, Nanofabrication Center, BGU
 2020–Present Head, Users Committee, Nanofabrication Center, BGU
 2020–Present Dissemination Officer, Israel Electrochemical Society (ISEL)
 2020–Present Board Member, Israel Electrochemical Society (ISEL)
 2020–Present Head, Academia-Industry relations, Dept. of Biomedical Engineering, BGU
 2015–Present Member, Users Committee, Nanofabrication Center, BGU
 2008–2010 Chairman, Tel Aviv University Student Chapter, Electrochemical Society

(b) Professional Functions Outside the University

2019 Member, Organizing Committee, Israel Electrochemistry
 (“Israelectrochemistry”) Meeting
 2018 Member of the Scientific Program Committee and “Medical Diagnostics”
 Session Chair, 11th International Conference on Biomedical Electronics and
 Devices (Biodevices 2018), Funchal, Portugal
 2018 Session Chair, 23rd Topical Meeting of the International Society of
 Electrochemistry, Vilnius, Lithuania
 2017–2022 Israeli representative, European COST Action “European Network for the
 Promotion of Portable, Affordable and Simple Analytical Platforms”
 (PortASAP)
 2016 Member, Scientific Program Committee; Chair, American Graphene Forum
 Session, the American Advanced Materials Congress (AAMC)

(f) Membership in Professional/Scientific Societies

2022–Present Israel Society for Oxygen and Free Radical Research (ISOFRF)
 2022–Present Society for Free Radical Research – Europe
 2020–Present Israel Electrochemical Society (ISEL)
 2008–Present International Society of Electrochemistry (ISE)
 2018–2019 IEEE Instrumentation and Measurement Society
 2014–2016 Biomedical Engineering Society (BMES)
 2008–2016 Electrochemical Society (ECS)

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

2004 Tel Aviv University, Dean's list 3rd Year Undergraduate Student Award
 2008 Tel Aviv University, Trotzki Award for outstanding Ph.D. students
 2008 The International Society of Electrochemistry, 2nd best poster award at the 7th
 International Symposium on Electrochemical Micro & Nanosystem
 Technologies 2008 Conference

2009	Tel Aviv University, The Miriam and Aaron Gutwirth scholarship for outstanding Ph.D. students
2010	Weizmann Institute of Science, Katzir travel award for outstanding Ph.D. students
2016	International Association of Advanced Materials Scientist Medal for the year 2016, IAAM.
2018	Best poster award at the 11 th International Conference on Biomedical Electronics and Devices (BIODEVICES/BIOSTEC)
2018	Electrochimica Acta Travel Award for Young Electrochemists
2020	Brain & Behavior Research Foundation, Klerman Prize Honorable Mention
2022	Ben-Gurion University of the Negev, Toronto Prize for Excellence in Research
2023	Ben-Gurion University of the Negev, Innovative teacher award

• Scientific Publications

From ISI:

H-index: 17 (Google Scholar: 21)

Total # of Citations: 598 (Google Scholar: 1278)

Total # of Citation Excluding Self-Citations: 561

Student ^S, Post-doctoral fellow ^{PD}, Technician/laboratory assistant ^T, Co-researcher ^C, Principal Investigator ^{PI}

(a) Refereed Chapters in Collective Volumes, Conference Proceedings, Festschrifts, etc.

1. **Ben-Yoav^S, H.**, Yorish^{PD}, S., Elad^S, T., Vernick^S, S., Belkin^{PI}, S. and Shacham-Diamand^{PI}, Y. 2007. A novel micro-fluidic whole cell biosensor for water toxicity analysis using bioluminescence detection. *Proceedings of MicroTAS 07 v2*, Paris, France, pp. 1049-1052.
2. **Ben-Yoav^S, H.**, Shacham-Diamand^{PI}, Y., Freeman^{PI}, A., Biran^S, A., Pedahzur^C, R., Belkin^{PI}, S., Buchinger^C, S., and Reifferscheid^{PI}, G. 2008. A novel microfluidic whole cell biosensor based on electrochemical detection for water toxicity analysis. *ECS Transactions* 16(11), pp. 187-197.
3. **Ben-Yoav^S, H.**, Cohen-Hadar^C, N., and Freeman^{PI}, A. 2010. Biomedical implications of the porosity of microbial biofilms. In: Editor, Vafai, K. *Porous Media: Applications in Biological Systems and Biotechnology*. Taylor & Francis Group. pp. 121-171.
4. **Ben-Yoav^S, H.**, Freeman^{PI}, A., Sternheim^C, M., Fishelson^T, N., Rubin^S, A., Biran^S, A., Pedahzur^C, S., Belkin^{PI}, S., and Shacham-Diamand^{PI}, Y. 2010. Electronically directed integration of whole-cell biosensors on bio-chips. *ECS Transactions* 33(8), pp. 49-58.
5. Cristea^S, D.-G., **Ben-Yoav^S, H.**, Shacham-Diamand^{PI}, Y., Basch^S, M.-E., Tiponut^{PI}, V., and Haraszy^{PI}, Z. 2010. VLSI universal signal conditioning circuit for electrochemical and bioluminescent sensors. *2010 IEEE 26-th Convention of Electrical and Electronics Engineers in Israel*, Eilat, Israel, pp. 249-252.
6. Kim^S, Y. W., Mosteller^S, M. P., Meyer^S, M. T., **Ben-Yoav^{PD}, H.**, Bentley^{PI}, W. E., and Ghodssi^{PI}, R. 2012. Microfluidic biofilm observation, analysis and treatment (Micro-BOAT) platform. *Proceedings of the 2012 Hilton Head Solid-State Sensors, Actuators and Microsystems Workshop*, Hilton Head, South Carolina, United States, pp. 233-236.

7. **Ben-Yoav^{PD}, H.**, Brown^S, A. D., Pomerantseva^{PD}, E., Kelly^{PI}, D. L., Culver^{PI}, J. N., and Ghodssi^{PI}, R. 2012. Tobacco mosaic virus biotemplated electrochemical biosensor. *Proceedings of the 2012 Hilton Head Solid-State Sensors, Actuators and Microsystems Workshop*, Hilton Head, South Carolina, United States, pp. 193-196.
8. **Ben-Yoav^{PD}, H.**, Winkler^S, T. E., Kim^C, E., Kelly^{PI}, D. L., Payne^{PI}, G. F., and Ghodssi^{PI}, R. 2013. Catechol-modified chitosan system as a bio-amplifier for schizophrenia treatment analysis. *Proceedings of the 2013 MRS Spring Meeting 2013*, San Francisco, California, United States.
9. Zhang^S, F., Fan^S, X. Z., Gerasopoulos^S, K. D., **Ben-Yoav^{PD}, H.**, Brown^S, A. D., Culver^{PI}, J. N., and Ghodssi^{PI}, R. 2013. Scale-down effects: towards miniaturization of an electrochemical sensor using biomolecules. *IEEE Sensors 2013*, Baltimore, Maryland, United States, pp. 1408-1411.
10. **Ben-Yoav^{PD}, H.**, Chocron^S, S. E., Winkler^S, T. E., Kim^C, E., Kelly^{PI}, D. L., Payne^{PI}, G. F., and Ghodssi^{PI}, R. 2013. The effect of vitamin C in point-of-care blood analysis using an electrochemical biosensor. *IEEE Sensors 2013*, Baltimore, Maryland, United States, pp. 141-144.
11. **Ben-Yoav^{PD}, H.**, Winkler^S, T. E., Chocron^S, S. E., Restaino^S, S. M., Costa^S, G. R., Kim^C, E., Kelly^{PI}, D. L., Payne^{PI}, G. F., and Ghodssi^{PI}, R. 2013. Bio-amplifying lab-on-a-chip for antipsychotic clozapine treatment monitoring. *Proceedings of the 17th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers '13)*, Barcelona, Spain, pp. 317-320.
12. **Ben-Yoav^{PD}, H.**, Winkler^S, T. E., Chocron^S, S. E., Costa^S, G. R., Restaino^S, S. M., Woolsey^S, N., Kim^C, E., Kelly^{PI}, D. L., Payne^{PI}, G. F., and Ghodssi^{PI}, R. 2013. Towards personalized mental healthcare: an electrochemically-amplified biosensor for clozapine antipsychotic treatment monitoring. *17th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS 2013)*, Freiburg, Germany, pp. 1167-1169.
13. Winkler^S, T. E., **Ben-Yoav^{PD}, H.**, Kelly^{PI}, D. L., and Ghodssi^{PI}, R. 2014. Microsystem for particle counting and sizing with tunable sensitivity and throughput. *Proceedings of the 2014 Hilton Head Solid-State Sensors, Actuators and Microsystems Workshop*, Hilton Head, South Carolina, United States, pp. 251-254.
14. Winkler^S, T. E., **Ben-Yoav^{PD}, H.**, Kelly^{PI}, D. L., and Ghodssi^{PI}, R. 2015. Osmotic erythrocyte lysis for chemical- and label-free impedance cytometry. *Proceedings of the 18th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers '15)*, Anchorage, Alaska, United States.
15. **Ben-Yoav^{PI}, H.**, Dykstra^S, P. H., Bentley^{PI}, W. E., and Ghodssi^{PI}, R. 2017. Microfluidic arrayed lab-on-a-chip for electrochemical capacitive detection of DNA hybridization events. In: Editors, Prickril, B. and Rasooly, A., *Biosensors and Biodection: Methods and Protocols, Volume 2: Electrochemical, Bioelectronic, Piezoelectric, Cellular and Molecular Biosensors*, Springer New York, pp. 71-88.
16. **Ben-Yoav^{PI}, H.** 2018. Intelligent multi-electrode arrays for next generation diagnostic biodevices. *Proceedings of the 11th International Conference on Biomedical Electronics and Devices (BIODEVICES/BIOSTEC)*, Madeira, Portugal.
17. Mazafi^S, A., Silue^S, A., Shukla^S, R. P., McDowell^S, B. W., Shukla^{PD}, S., Lavon^C, A., Peixoto^{PI}, N., and **Ben-Yoav^{PI}, H.** 2018. Intelligent multi-electrode arrays as the next generation of electrochemical biosensors for real-time analysis of neurotransmitters. *Proceedings of the*

- 2018 IEEE International Symposium on Medical Measurements & Applications (MeMeA 2018), Rome, Italy.
18. Shukla^S, R. P., Lavon^C, A., and **Ben-Yoav^{PI}, H.** Integration of sensor cells into hardware platforms. In: Editors, Belkin, S. and Freemont, P., *Handbook of Cell Biosensors: Fundamentals and Genetics for Cell Biosensors Applications*, Springer, 2018.
 19. Shukla^S, R. P., Cazelle^{PD}, R., Kelly^C, D. L., and **Ben-Yoav^{PI}, H.** 2019. Reduced graphene oxide-modified microelectrode for antipsychotic clozapine detection in finger-pricked blood. *Proceedings of MicroTAS*, Basel, Switzerland.
 20. **Ben-Yoav^{PI}, H.**, Ragonas^C, H., Pandey^S, R., Fiashi^S, G., and Shacham-Diamand^{PI}, Y. Electrodes for cell sensors interfacing. In: Editors, Belkin, S. and Freemont, P., *Handbook of Cell Biosensors: Fundamentals and genetics for cell biosensors applications*, Springer, 2018.
 21. **Ben-Yoav^{PI}, H.** 2019. Section news: Israel section. *The Electrochemical Society Interface*, 28, 72.
 22. Lin^S, W., Ruiz^{PD}, C., Aroosh^S, M., **Ben-Yoav^{PI}, H.**, and Huang^{PI}, Q. 2022. Functional characterization and correction of biofouling in multi-receptor biosensors, *IISE Annual Conference and Expo 2022*. Ellis, K., Ferrell, W. & Knapp, J. (eds.).
- (b) Refereed Articles and Refereed Letters in Scientific Journals
1. **Ben-Yoav^S, H.** and Freeman^{PI}, A. 2008. Enzymatically attenuated in situ release of silver ions to combat bacterial biofilms: a feasibility study. *Journal of Drug Delivery Science and Technology* 18(1), pp. 25-29.
 2. Elman^S, N. M., **Ben-Yoav^S, H.**, Sternheim^C, M., Rosen^T, R., Krylov^C, S., and Shacham-Diamand^{PI}, Y. 2008. Towards toxicity detection using a lab-on-chip based on the integration of MOEMS and whole-cell sensors. *Biosensors and Bioelectronics* 23, pp. 1631-1636.
 3. **Ben-Yoav^S, H.**, Elad^S, T., Shlomovits^S, O., Belkin^C, S., and Shacham-Diamand^{PI}, Y. 2009. Optical modeling of bioluminescence in whole cell biosensors. *Biosensors and Bioelectronics* 24(7), pp. 1969-1973.
 4. **Ben-Yoav^S, H.**, Biran^S, A., Pedahzur^C, R., Belkin^{PI}, S., Buchinger^C, S., Reifferscheid^{PI}, G., and Shacham-Diamand^{PI}, Y. 2009. A whole cell electrochemical biosensor for water genotoxicity bio-detection. *Electrochimica Acta* EMNT 2008 special issue 54(25), pp. 6113-6118.
 5. Almog^{PD}, R., Daniel^S, R., Vernick^S, S., Ron^S, A., **Ben-Yoav^S, H.**, and Shacham-Diamand^{PI}, Y. 2010. On-chip detection of cellular activity. *Advances in Biochemical Engineering - Biotechnology* 117, pp. 179-191.
 6. Buchinger^C, S., Grill^S, P., Morosow^S, V., **Ben-Yoav^S, H.**, Shacham-Diamand^{PI}, Y., Biran^S, A., Pedahzur^C, R., Belkin^{PI}, S., and Reifferscheid^{PI}, G. 2010. Evaluation of chrono-amperometric signal detection for the analysis of genotoxicity by a whole cell biosensor. *Analytica Chimica Acta* 659, pp. 122-128.
 7. Shacham-Diamand^{PI}, Y., Belkin^{PI}, S., Rishpon^{PI}, J., Elad^S, T., Melamed^S, S., Biran^S, A., Yagur-Kroll^{PD}, S., Almog^{PD}, R., Daniel^S, R., **Ben-Yoav^S, H.**, Rabner^S, A., Vernick^S, S., Elman^{PD}, N., and Popovtzer^{PI}, R. 2010. Optical and electrical interfacing technologies for living cell bio-chips. *Current Pharmaceutical Biotechnology* 11(4), pp. 376-383.
 8. Biran^S, A., Yagur-Kroll^C, S., Pedahzur^C, R., Buchinger^C, S., Reifferscheid^{PI}, G., **Ben-Yoav^S, H.**, Shacham-Diamand^{PI}, Y., and Belkin^{PI}, S. 2010. Bacterial genotoxicity bioreporters. *Microbial Biotechnology* 3(4), pp. 412-427.

9. Biran^S, A., **Ben-Yoav^S, H.**, Yagur-Kroll^C, S., Pedahzur^C, R., Buchinger^C, S., Shacham-Diamand^{PI}, Y., Reifferscheid^{PI}, G., and Belkin^{PI}, S. 2011. Microbial genotoxicity bioreporters based on *sulA* activation. *Analytical and Bioanalytical Chemistry* 400 (9), pp. 3013-3024.
10. **Ben-Yoav^S, H.**, Freeman^{PI}, A., Sternheim^C, M., and Shacham-Diamand^{PI}, Y. 2011. An electrochemical impedance model for integrated bacterial biofilms. *Electrochimica Acta* 56, pp. 7780-7786.
11. **Ben-Yoav^S, H.**, Amzel^S, T., Sternheim^C, M., Belkin^{PI}, S., Rubin^S, A., Shacham-Diamand^{PI}, Y., and Freeman^{PI}, A. 2011. Signal amelioration of electrophoretically deposited whole-cell biosensors using external electric fields. *Electrochimica Acta* 56 (26), pp. 9666-9672.
12. **Ben-Yoav^S, H.**, Amzel^S, T., Biran^S, A., Sternheim^C, M., Belkin^{PI}, S., Freeman^{PI}, A., and Shacham-Diamand^{PI}, Y. 2011. Bacterial biofilm-based water toxicity sensor. *Sensors and Actuators B: Chemical* 158 (1), pp. 366-371.
13. **Ben-Yoav^S, H.**, Melamed^S, S., Freeman^{PI}, A., Shacham-Diamand^{PI}, Y., and Belkin^{PI}, S. 2011. Whole cell biochips for bio-sensing: integration of live cells and inanimate surfaces. *Critical Reviews in Biotechnology* 31(4), pp. 337-353.
14. Cristea^S, D. G., Basch^S, M. E., **Ben-Yoav^S, H.**, Tiponut^{PI}, V., and Shacham-Diamand^{PI}, Y. 2012. Universal signal conditioning system for amperometric sensors. *Advances in Electrical and Computer Engineering* 12 (1), pp. 19-24.
15. **Ben-Yoav^{PD}, H.**, Dykstra^S, P. H., Bentley^{PI}, W. E., and Ghodssi^{PI}, R. 2012. A microfluidic-based electrochemical biochip for label-free diffusion-restricted DNA hybridization analysis. *Biosensors and Bioelectronics* 38 (1), pp. 114-120.
16. **Ben-Yoav^S, H.**, Ofek Almog^S, R., Sverdlov^T, Y., Sternheim^C, M., Belkin^{PI}, S., Freeman^{PI}, A., and Shacham-Diamand^{PI}, Y. 2012. Modified working electrodes for electrochemical whole-cell microchips. *Electrochimica Acta* 82 (1), pp. 109-114.
17. Ofek Almog^S, R., **Ben-Yoav^S, H.**, Sverdlov^T, Y., Shmilovich^S, T., Krylov^{PI}, S., and Shacham-Diamand^{PI}, Y. 2012. Integrated polypyrrole flexible conductors for biochips and MEMS applications. *Journal of Atomic, Molecular, and Optical Physics* vol. 2012, Article ID 850482.
18. **Ben-Yoav^S, H.**, Biran^S, A., Sternheim^C, M., Belkin^{PI}, S., Freeman^{PI}, A., and Shacham-Diamand^{PI}, Y. 2013. Functional modeling of electrochemical whole-cell biosensors. *Sensors and Actuators B: Chemical* 181, pp. 479-485.
19. Kelly^{PI}, D. L., **Ben-Yoav^{PD}, H.**, Stock^{PD}, V., Winkler^S, T., Payne^{PI}, G., Chocron^S, S., Kim^C, E., Vyas^C, G., Love^C, R., Wehring^C, H. J., Sullivan^C, K. M., Feldman^C, S., Liu^{PD}, F., McMahon^C, R. P., and Ghodssi^{PI}, R. 2013. Development of a lab-on-a-chip biosensor for clozapine monitoring. *Neuropsychopharmacology* 38, pp. S237-S238.
20. **Ben-Yoav^{PD}, H.**, Winkler^S, T. E., Kim^C, E., Chocron^S, S. E., Kelly^{PI}, D. L., Payne^{PI}, G. F., and Ghodssi^{PI}, R. 2014. Redox cycling-based amplifying electrochemical sensor for *in situ* clozapine antipsychotic treatment monitoring. *Electrochimica Acta* 130, pp. 497-503.
21. Gordonov^S, T., Kim^C, E., Cheng^{PD}, Y., **Ben-Yoav^{PD}, H.**, Ghodssi^{PI}, R., Rubloff^{PI}, G., Yin^C, J.-J., Payne^{PI}, G. F., and Bentley^{PI}, W. E. 2014. Electronic modulation of biochemical signal generation. *Nature Nanotechnology* 9, pp. 605-610.
22. **Ben-Yoav^{PD}, H.**, Dykstra^S, P. H., Gordonov^S, T., Bentley^{PI}, W. E., and Ghodssi^{PI}, R. 2014. A microfluidic-based electrochemical biochip for label-free DNA hybridization analysis. *Journal of Visualized Experiments* 91, e51797.

23. Winkler^S, T. E., **Ben-Yoav^{PD}, H.**, Chocron^S, S. E., Kim^C, E., Kelly^{PI}, D. L., Payne^{PI}, G. F., and Ghodssi^{PI}, R. 2014. Electrochemical study of the catechol-modified chitosan system for clozapine treatment monitoring. *Langmuir* 30, pp. 14686-14693.
24. Kim^S, Y.W., Subramanian^S, S., Gerasopoulos^{PD}, K., **Ben-Yoav^{PD}, H.**, Wu^S, H.-C., Quan^S, D., Carter^S, K., Meyer^S, M.T., Bentley^{PI}, W.E., Ghodssi^{PI}, R. 2015. Effect of electrical energy on the efficacy of biofilm treatment using the bioelectric effect. *npj Biofilms and Microbiomes* 1, pp. 15016.
25. Kim^C, E., Xiong^C, Y., Cheng^C, Y., Wu^C, H.-C., Liu^C, Y., Morrow^S, B., **Ben-Yoav^{PD}, H.**, Ghodssi^{PI}, R., Rubloff^{PI}, G., Shen^{PI}, J., Bentley^{PI}, W., Shi^{PI}, X., and Payne^{PI}, G. 2015. Chitosan to connect biology to electronics: fabricating the bio-device interface and communicating across this interface. *Polymers special issue on "Chitin and Chitosans"* 7, pp. 1-46.
26. **Ben-Yoav^{PD}, H.**, Dykstra^S, P. H., Bentley^{PI}, W. E., and Ghodssi^{PI}, R. 2015. A controlled microfluidic electrochemical lab-on-a-chip for label-free diffusion-restricted DNA hybridization analysis. *Biosensors and Bioelectronics* 64, pp. 579-585.
27. Chocron^S, S. E., Weisberger^S, B. M., **Ben-Yoav^{PD}, H.**, Winkler^S, T. E., Kim^C, E., Kelly^{PI}, D. L., Payne^{PI}, G. F., and Ghodssi^{PI}, R. 2015. Multidimensional mapping method using an arrayed sensing system for cross-reactivity screening. *PLoS ONE* 10, pp. e0116310.
28. Kim^C, E., Chocron^S, S. E., **Ben-Yoav^{PD}, H.**, Winkler^S, T. E., Liu^C, Y., Glassman^C, M., Wolfram^S, C., Kelly^{PI}, D. L., Ghodssi^{PI}, R., and Payne^{PI}, G. F. 2015. Programmable "semismart" sensor: relevance to monitoring antipsychotics. *Advanced Functional Materials* 24(14), pp. 2156-2165.
29. **Ben-Yoav^{PD}, H.**, Chocron^S, S. E., Winkler^S, T. E., Kim^C, E., Kelly^{PI}, D. L., Payne^{PI}, G. F., and Ghodssi^{PI}, R. 2015. An electrochemical micro-system for clozapine antipsychotic treatment monitoring. *Electrochimica Acta* 163, pp. 260-270.
30. Meyer^S, M. T., Subramanian^S, S., Kim^S, Y. W., **Ben-Yoav^{PD}, H.**, Gnerlich^{PD}, M., Gerasopoulos^{PD}, K., Bentley^{PI}, W. E., and Ghodssi^{PI}, R. 2015. Multi-depth valved microfluidics for biofilm segmentation. *Journal of Micromechanics and Microengineering* 25, pp. 095003.
31. Gnerlich^{PD}, M., **Ben-Yoav^{PD}, H.**, Culver^{PI}, J. N., Ketchum^{PI}, D. R., and Ghodssi^{PI}, R. 2015. Selective deposition of nanostructured ruthenium oxide using Tobacco mosaic virus for micro-supercapacitors in solid Nafion electrolyte. *Journal of Power Sources* 293, pp. 649-656.
32. Kelly^{PI}, D. L., **Ben-Yoav^{PI}, H.**, Payne^{PI}, G. F., Winkler^S, T. E., Chocron^S, S. E., Kim^C, E., Stock^C, V., Vyas^C, G., Love^C, R. C., Wehring^C, H. J., Sullivan^C, K. M., Feldman^C, S., Liu^C, F., McMahon^C, R. P., and Ghodssi^{PI}, R. 2018 (Epub 2015). Blood draw barriers for treatment with clozapine and development of point-of-care monitoring device. *Clinical Schizophrenia & Related Psychoses* 12(1), pp. 23-30.
33. Winkler^S, T. E., **Ben-Yoav^{PI}, H.**, Ghodssi^{PI}, R. 2016. Hydrodynamic focusing for microfluidic impedance cytometry: a system integration study. *Microfluidics and Nanofluidics* 20, pp. 134.
34. Kim^C, E., Liu^C, Y., **Ben-Yoav^{PI}, H.**, Winkler^S, T. E., Yan^C, K., Shi^C, X., Shen^C, J., Kelly^{PI}, D. L., Ghodssi^{PI}, R., Bentley^{PI}, W. E., and Payne^{PI}, G. F. 2016. Fusing sensor paradigms to acquire chemical information: an integrative role for smart biopolymeric hydrogels. *Advanced Healthcare Materials* 5(20), pp. 2595-2616.
35. Winkler^S, T. E., Dietrich^S, R., **Ben-Yoav^{PI}, H.**, Kim^C, E., Kelly^{PI}, D. L., Payne^{PI}, G. F., Ghodssi^{PI}, R. 2017. The interplay of electrode- and bio-materials in a redox cycling- based clozapine sensor. *Electrochemistry Communications* 79, pp. 33-36.

36. Winkler^S, T. E., Brady^S, S. L., Kim^C, E., **Ben-Yoav^{PI}, H.**, Kelly^{PI}, D. L., Payne^{PI}, G. F., Ghodssi^{PI}, R. 2017. Molecular processes in an electrochemical clozapine sensor. *Biointerphases* 12(2), pp. 02B401.
37. **Ben-Yoav^{PI}, H.**, Schroeder^S, M. A., Noked^{PI}, M. 2017. Chitosan bio-functionalization of carbon nanotube arrayed electrode. *Advanced Materials Letters* 8(12), pp. 1166.
38. Banis^S, G. E., Winkler^S, T. E., Barton^S, P., Chocron^S, S. E., Kim^C, E., Kelly^{PI}, D. L., Payne^{PI}, G. F., **Ben-Yoav^{PI}, H.**, and Ghodssi^{PI}, R. 2017. The binding effect of proteins on medications and its impact on electrochemical sensing: antipsychotic clozapine as a case study. *Pharmaceuticals* 10(3), pp. 69.
39. Shukla^{PD}, S. K., Lavon^C, A., Shmulevich^S, O., and **Ben-Yoav^{PI}, H.** 2018. The effect of loading carbon nanotubes onto chitosan films on electrochemical dopamine sensing in the presence of biological interference. *Talanta* 181, pp. 57-64.
40. Shukla^S, R. P. and **Ben-Yoav^{PI}, H.** 2019. A chitosan-carbon nanotube-modified microelectrode for *in situ* detection of serum levels of the antipsychotic clozapine in a finger-pricked sample volume. *Advanced Healthcare Materials*, pp. 1900462.
41. Silue^S, T. A., Lewitus^C, V., Hussam^C, A., **Ben-Yoav^C, H.**, and Peixoto^{PI}, N. 2019. Functionals aspects and simultaneous detection of dopamine, ascorbic acid and uric acid using chitosan-catechol graphene and carbon nanotube modified electrodes. *Journal of Biomedical Engineering and Technology* 7(1), pp. 5-13.
42. Zorea^S, J., Shukla^S, R. P., Elkabets^C, M., and **Ben-Yoav^{PI}, H.** 2020. Probing antibody surface density and analyte antigen incubation time as dominant parameters influencing the antibody-antigen recognition events of a non-faradaic and diffusion-restricted electrochemical immunosensor. *Analytical and Bioanalytical Chemistry* 412(7), pp. 1709-1717.
43. Shukla^S, R. P., Belmaker^C, R. H., Bersudsky^C, Y., and **Ben-Yoav^{PI}, H.** 2020. A platinum black-modified microelectrode for in situ olanzapine detection in microliter volumes of undiluted serum. *Journal of Neural Transmission* 127(2), pp. 291-299.
44. Shukla^S, R. P., Cazelles^{PD}, R., Kelly^C, D. L., and **Ben-Yoav^{PI}, H.** 2019. A reduced-graphene oxide-modified microelectrode for a repeatable detection of antipsychotic clozapine using microliters-volumes of whole blood. *Talanta* 209, pp. 120560.
45. Laganovska^S, K., Zolotarjovs^S, A., Vazquez^C, M., Donnell^C, K. M., Liepins^C, J., **Ben-Yoav^C, H.**, Karitans^S, V., and Smits^{PI}, K. 2020. Portable low-cost open-source wireless spectrophotometer for fast and reliable measurements. *HardwareX* 7, pp. e00108.
46. Shukla^S, R. P., Rapier^{PD}, C., Glassman^T, M., Liu^T, F., Kelly^C, D. L., and **Ben-Yoav^{PI}, H.** 2020. An integrated electrochemical microsystem for real-time treatment monitoring of clozapine in microliter volume samples from schizophrenia patients. *Electrochemistry Communications* 120, pp. 106850.
47. Noked^{PI}, M., **Ben-Yoav^{PI}, H.**, and Keinan^{PI}, E. 2021. Rosarium Philosophorum on Electrochemistry. *Israel Journal of Chemistry* 61, pp. 3.
48. Cazelles^{PD}, R., Shukla^S, R. P., Ware^{PI}, R. E., Vinks^{PI}, A. A., and **Ben-Yoav^{PI}, H.** 2021. Electrochemical determination of hydroxyurea in a complex biological matrix using MoS₂-modified electrodes and chemometrics. *Biomedicines* 9, pp. 6.
49. Shukla^S, R. P., Aroosh^S, M., Matzafi^S, A., and **Ben-Yoav^{PI}, H.** 2021. Partially functional electrode modifications for rapid detection of dopamine in urine. *Advanced Functional Materials* 2004146.

- Publication has been selected to be featured on a frontispiece in the issue

50. Vázquez^{PI}, M., Anfossi^{PI}, L., **Ben-Yoav^{PI}, H.**, Dieguez^{PI}, L., Karopka^{PI}, T., Della Ventura^{PI}, B., Abalde-Cela^C, S., Minopoli^C, A., Di Nardo^C, F., Shukla^S, V. K., Teixeira^C, A., Tvarijonaviciute^{PI}, A., and Franco-Martínez^{PI}, L. 2021. Use of some cost-effective technologies for a routine clinical pathology laboratory. *Lab on a Chip* 21, pp. 4330-4351.
51. Biton Hayun^S, S., Shukla^S, R. P., and **Ben-Yoav^{PI}, H.** 2022. Diffusion- and chemometric-based separation of complex electrochemical signals that originated from multiple redox-active molecules. *Polymers* 14, pp. 717.
 - *Publication has been selected as a featured paper in the issue*
52. Rapier^{PD}, C. E., Jagadeesan^{PD}, S., Vatine^{PI}, G., and **Ben-Yoav^{PI}, H.** 2022. Microfluidic channel sensory system for electro-addressing cell location, determining confluency, and quantifying a general number of cells. *Scientific Reports* 12, pp. 3248.

- **Lectures and Presentations at Meetings and Invited Seminars**

- (a) Invited Plenary Lectures at Conferences/Meetings

1. 2015, Electrochemical biosensors for point-of-care monitoring in mental health, 2015 Israel Electrochemistry Annual Meeting, Beer Sheva, Israel.
2. 2016, Nano-biofabricated electronic films for functional lab-on-a-chip micro-systems, Israel Vacuum Society 34th Annual Conference, Beer Sheva, Israel.
3. 2016, Improving mental health treatment with mobile devices, Biomedical Engineering 2016, Israel Society for Medical and Biological Engineering (ISMBE), Haifa, Israel.
4. 2016, Semi-smart bioelectronic micro-system for point-of-care monitoring in mental health, American Advanced Materials Congress, Miami, United States.
5. 2017, Nano-bio-electronic films as functional materials for analytical micro-systems, Isranalytica 2017, Tel-Aviv, Israel.
6. 2017, Bioelectronic micro-systems for molecular analysis, Poster presented at the Third Israeli-American Kavli Frontiers of Science Symposium, Israel Academy of Sciences and Humanities - U.S. National Academy of Sciences, Irvine, California, United States.
7. 2017, Bioelectronic films as functional materials for analytical micro-systems, The 8th Eastern Mediterranean Chemical Engineering Conference, Haifa, Israel
8. 2018, Smart analytical bio-nano-systems for environmental monitoring applications, Israel-Italy Scientific Workshop in Nano-Materials & Nano Technologies in Clean-Tech Applications, Tel-Aviv, Israel.
9. 2018, Intelligent multi-electrode arrays as the next generation of electrochemical biosensors for real-time analysis of redox biomarkers in biofluids, The 17th International Conference on Electroanalysis (ESEAC 2018), Rhodes, Greece.
10. 2018, Intelligent multi-electrode arrays as the next generation of electrochemical biosensors for real-time analysis of biomarkers in biofluids, 69th Annual Meeting of the International Society of Electrochemistry, Bologna, Italy.
11. 2018, Intelligent multi-electrode arrays for *in situ* bioanalysis of biofluids, CECE 2018 – 15th International Interdisciplinary Meeting on Bioanalysis, Brno, The Czech Republic.
12. 2019, Intelligent multi-electrode arrays for *in situ* analysis of biomolecules, Organs-on-a-Chip, Museum of Natural History, Tel Aviv University, Tel-Aviv, Israel.

13. 2019, Intelligent redox-responsive film-modified multi-electrode arrays for *in situ* analysis of biofluids, The Annual Conference on Wearable Devices for Medical Diagnosis, Technion – Israel Institute of Technology, Haifa, Israel.
14. 2019, Smart multi-electrode arrays for *in situ* analysis of biofluids, Xidian University's 2019 Workshop in "Smart Sensors", Xi'an, China.
15. 2019, Intelligent multi-microelectrode arrays for water analysis, Mini-Symposium on Recent Advances in Water Quality Monitoring, The Hebrew University of Jerusalem, Jerusalem, Israel.
16. 2020, Electrochemical micro-sensors for real-time detection of biomarkers, Biomedical Engineering 2020, The Israel Society for Medical and Biological Engineering (ISMBE), Haifa, Israel.
17. 2021, Intelligent multi-electrode arrays for *in-situ* detection of redox biomarkers, 2021 Annual Conference on Chemical Sensors and Wearable Devices (2021 CSWD), Technion, Israel.
18. 2022. Lab-on-a-chip micro-systems for precision medicine. Biomed Israel 2022, Tel-Aviv, Israel.
19. 2022. Electrochemical sensing micro-systems for bioanalysis. VIT India (online).

(b) Presentation of Papers at Conferences/Meetings (Oral or Poster)

Presented in Person:

1. **Ben-Yoav, H.**, Yorish, S., Elad, T., Vernick, S., Belkin, S., and Shacham-Diamand, Y. 2007. A novel micro-fluidic whole cell biosensor for water toxicity analysis using bioluminescence detection. Oral paper presented at the *NanoBio-Europe 2007*, Munster, Germany.
2. **Ben-Yoav, H.**, Biran, A., Pedahzur, R., Belkin, S., Buchinger, S., Reifferscheid, G., and Shacham-Diamand, Y. 2008. A novel micro-fluidic whole cell biosensor based on electrochemical detection for water toxicity analysis. Poster presented at the *7th International Symposium on Electrochemical Micro & Nanosystem Technologies 2008 Conference*, Ein-Gedi, Israel.
3. **Ben-Yoav, H.**, Biran, A., Pedahzur, R., Belkin, S., Buchinger, S., Reifferscheid, G., Freeman, A., and Shacham-Diamand, Y. 2008. A novel microfluidic whole cell biosensor based on electrochemical detection for water toxicity analysis. Oral paper presented at the *PRiME 2008 – Joint international meeting: 214th Meeting of The Electrochemical Society and 2008 Fall Meeting of The Electrochemical Society of Japan*, Hawaii, United States.
4. **Ben-Yoav, H.**, Biran, A., Pedahzur, R., Belkin, S., Buchinger, S., Reifferscheid, G., and Shacham-Diamand, Y. 2008. A novel microfluidic whole cell biosensor based on electrochemical detection for water toxicity analysis. Oral paper presented at the *Israel Vacuum Society 2008 Meeting*, Herzliya, Israel.
5. **Ben-Yoav, H.**, Biran, A., Pedahzur, R., Belkin, S., Buchinger, S., Reifferscheid, G., and Shacham-Diamand, Y. 2009. A novel microfluidic whole cell biosensor based on electrochemical detection for water toxicity analysis. Poster presented at the *Nano Israel 2009*, Jerusalem, Israel.
6. **Ben-Yoav, H.**, Biran, A., Pedahzur, R., Belkin, S., Buchinger, S., Reifferscheid, G., Freeman, A., and Shacham-Diamand, Y. 2009. A whole cell electrochemical biosensor for water genotoxicity bio-detection. Oral paper presented at the *Israel Society for Microbiology 2009 Meeting*, Bar-Ilan University, Israel.

7. **Ben-Yoav, H.**, Freeman, A., Shacham-Diamand, Y. 2009. A whole cell electrochemical biosensor for water genotoxicity bio-detection. Oral paper presented at the *International Student Education Foundation Conference*, Hebrew University of Jerusalem, Israel.
8. **Ben-Yoav, H.**, Biran, A., Pedahzur, R., Belkin, S., Buchinger, S., Reifferscheid, G., Freeman, A., and Shacham-Diamand, Y. 2009. A whole cell electrochemical biosensor for water genotoxicity bio-detection. Oral paper presented at the *Nanotechnology Students Conference*, Bar-Ilan University, Israel.
9. **Ben-Yoav, H.**, Freeman, A., Sternheim, M., and Shacham-Diamand, Y. 2009. Electrochemical impedance analysis of bacterial biofilms on bio-chips. Oral paper presented at the *14th Israel Materials Engineering Conference*, Tel Aviv University, Israel.
10. **Ben-Yoav, H.**, Amzel, T., Freeman, A., Belkin, S., Biran, A., Pedahzur, R., Sternheim, M., and Shacham-Diamand, Y. 2010. Effects of external electrical fields on biochip integrated bacterial biofilms for biosensing applications. Poster presented at the *8th International Symposium on Electrochemical Micro & Nanosystem Technologies 2010 Conference*, Cannes Mandelieu, France.
11. **Ben-Yoav, H.**, Freeman, A., Sternheim, M., and Shacham-Diamand, Y. 2010. Electrochemical impedance analysis of bacterial biofilms on bio-chips. Oral paper presented at the *8th International Symposium on Electrochemical Impedance Spectroscopy*, Algarve, Portugal.
12. **Ben-Yoav, H.**, Freeman, A., Sternheim, M., Amzel T., Fishelson N., Biran A., Pedahzur R., Belkin S., Buchinger S., Reifferscheid G., and Shacham-Diamand, Y. 2010. Electrochemical low profile whole-cell bio-chips. Oral paper presented at the *8th International Symposium on Electrochemical Micro & Nanosystem Technologies 2010 Conference*, Cannes Mandelieu, France.
13. **Ben-Yoav, H.**, Freeman, A., Sternheim, M., Amzel T., Fishelson N., Biran A., Pedahzur R., Belkin S., Buchinger S., Reifferscheid G., and Shacham-Diamand, Y. 2010. Electrochemical low profile whole-cell bio-chips. Oral paper presented at the *218th Meeting of The Electrochemical Society*, Las Vegas, Nevada, United States.
14. **Ben-Yoav, H.**, Dykstra, P. H., and Ghodssi, R. 2011. A label-free microfluidic-based electrochemical impedance spectroscopy biosensor for DNA hybridization analysis. Poster presented at the *2011 Fischell Festival*, College Park, Maryland, United States.
15. **Ben-Yoav, H.**, Dykstra, P. H., and Ghodssi, R. 2011. Microfluidic arrayed electrochemical lab-on-a-chip for biomolecules detection at the point-of-care. Oral paper presented at the *2011 Bioscience Research & Technology Review Day*, College Park, Maryland, United States.
16. **Ben-Yoav, H.**, Dykstra, P. H., Bentley, W. E., and Ghodssi, R. 2012. A label-free microfluidic-based electrochemical impedance spectroscopy biosensor for DNA hybridization analysis. Poster presented at the *2012 Mid Atlantic Micro/Nano Alliance Spring Symposium*, Annapolis, Maryland, United States.
17. **Ben-Yoav, H.**, Dykstra, P. H., Bentley, W. E., and Ghodssi, R. 2012. A microfluidic-based electrochemical nano-biochip for label-free diffusion-restricted DNA hybridization analysis. Poster presented at the *22nd Anniversary World Congress on Biosensors*, Cancun, Mexico.
18. **Ben-Yoav, H.**, Pomerantseva, E., Gnerlich, M., and Ghodssi, R. 2012. Tobacco mosaic virus nanotemplates for next generation energy storage and electrochemical sensing. Poster presented at the *2012 ONR Naval Science and Technology Partnership Conference*, Arlington, Virginia, United States.

19. **Ben-Yoav, H.**, Winkler, T. E., Kim, E., Kelly, D. L., Payne, G. F., and Ghodssi, R. 2012. Lab-on-a-chip biosensor for schizophrenia treatment analysis. Poster presented at the *2012 Fischell Festival*, College Park, Maryland, United States.
20. **Ben-Yoav, H.**, Winkler, T. E., Kim, E., Kelly, D. L., Payne, G. F., and Ghodssi, R. 2012. Lab-on-a-chip biosensor for schizophrenia treatment analysis. Poster presented at the *2012 Bioscience Research & Technology Review Day*, College Park, Maryland, United States.
21. **Ben-Yoav, H.**, Dykstra, P. H., Bentley, W. E., and Ghodssi, R. 2012. A programmable microfluidic electrochemical nano-biochip for label-free diffusion-restricted DNA hybridization analysis. Oral paper presented at the *22nd Anniversary World Congress on Biosensors*, Cancun, Mexico.
22. **Ben-Yoav, H.**, Winkler, T. E., Kim, E., Kelly, D. L., Payne, G. F., and Ghodssi, R. 2013. Lab-on-a-chip biosensor for schizophrenia treatment analysis. Poster presented at the *2013 Mid Atlantic Micro/Nano Alliance Spring Symposium*, Gaithersburg, Maryland, United States.
23. **Ben-Yoav, H.**, Winkler, T. E., Chocron, S. E., Restaino, S. M., Costa, G. R., Kim, E., Kelly, D. L., Payne, G. F., and Ghodssi, R. 2013. Bio-amplifying lab-on-a-chip for antipsychotic clozapine treatment monitoring. Poster presented at the *2013 Fischell Festival*, College Park, Maryland, United States.
24. **Ben-Yoav, H.**, Winkler, T. E., Chocron, S. E., Restaino, S. M., Costa, G. R., Kim, E., Kelly, D. L., Payne, G. F., and Ghodssi, R. 2013. Bio-amplifying lab-on-a-chip for antipsychotic clozapine treatment monitoring. Poster presented at the *2013 Bioscience Research & Technology Review Day*, College Park, Maryland, United States.
25. **Ben-Yoav, H.**, Chocron, S. E., Winkler, T. E., Kim, E., Kelly, D. L., Payne, G. F., and Ghodssi, R. Towards personalized mental healthcare: an electrochemically-amplified biosensor for clozapine antipsychotic treatment monitoring. Poster presented at the *Medical MEMS and Sensors 2014*, Detroit, Michigan, United States.
26. **Ben-Yoav, H.**, Winkler, T. E., Chocron, S. E., Kim, E., Payne, G. F., Kelly, D. L., and Ghodssi, R. 2014. Microsystems for brain health. Poster presented at the *2014 Hilton Head Solid-State Sensors, Actuators and Microsystems Workshop*, Hilton Head, South Carolina, United States.
27. **Ben-Yoav, H.**, Winkler, T. E., Banis, G., Chocron, S. E., Kim, E., Kelly, D. L., Payne, G. F., and Ghodssi, R. 2016, Hydrogel-integrated electrochemical biosensors for point-of-care monitoring in mental health. Oral paper presented at the *17th Israel Materials Engineering Conference*, Ramat-Gan, Israel.
28. **Ben-Yoav, H.**, Winkler, T. E., Banis, G., Chocron, S. E., Kim, E., Kelly, D. L., Payne, G. F., and Ghodssi, R. Electrochemical biosensors for point-of-care monitoring in mental health. Poster presented at the *NanoIsrael 2016*, Tel-Aviv, Israel.
29. **Ben-Yoav, H.** 2017. Bioelectronic films as functional materials for smart electrochemical biosensors. Oral paper presented at the *4th Conference of the Israel Society for Biotechnology Engineering*, Tel-Aviv, Israel.
30. **Ben-Yoav, H.** 2018. Intelligent multi-electrode arrays for next generation diagnostic biodevices. Poster presented at the *11th International Conference on Biomedical Electronics and Devices (BIODEVICES/BIOSTEC)*, Madeira, Portugal.
31. Shukla, R. P., Biton, S., Mazafi, A., Lavon, A., and **Ben-Yoav, H.** 2018. Electrochemical lab-on-a-chip integrated with bioelectronic films for real-time probing of biomarkers in biofluids. Oral paper presented at the *1st meeting of the COST Action CA16215 – European Network for*

- the Promotion of PORTable, Affordable and Simple Analytical Platforms (PortASAP)*, Porto, Portugal.
32. Mazafi, A. and **Ben-Yoav, H.** Intelligent multi-electrode array for simultaneous detection of neurotransmitters dopamine and norepinephrine in urine. Poster presented at the *23rd Topical Meeting of the International Society of Electrochemistry*, Vilnius, Lithuania.
 33. Shukla, S. K., Shukla, R. P., Biton, S., Mazafi, A., Lavon, A., and **Ben-Yoav, H.** 2018. Miniaturized electrochemical biosensors integrated with functional bioelectronic films for real-time probing of biomarkers in biofluids. Oral paper presented at the *23rd Topical Meeting of the International Society of Electrochemistry*, Vilnius, Lithuania.
 34. Mazafi, A., Silue, A., Shukla, R. P., McDowell, B. W., Shukla, S., Lavon, A., Peixoto, N., and **Ben-Yoav, H.** 2018. Intelligent multi-electrode arrays as the next generation of electrochemical biosensors for real-time analysis of neurotransmitters. Oral paper presented at the *2018 IEEE International Symposium on Medical Measurements & Applications (MeMeA 2018)*, Rome, Italy.
 35. Shukla, R.P., Biton, S., Mazafi, A., Lavon, A., and **Ben-Yoav, H.** 2019. Electrochemical lan-on-a-chip integrated with bioelectronic films for real-time probing of biomarkers in biofluids. Poster presented at the *MC meeting of the COST Action CA16215 – European Network for the Promotion of PORTable, Affordable and Simple Analytical Platforms (PortASAP)*, Varazdin, Croatia.
 36. Shukla, R. P., Friedman, A., Zagardan, T., Aroosh, M., Kleiman, S., Kaufman, D., Mayzus, D., Lavon, A., Cazelles, R., and **Ben-Yoav, H.** 2020. Electronic tongues as the next generation of electrochemical biosensors for real-time analysis of biomarkers in biofluids. Poster presented at the *9th ILANIT/FISEB Conference*, Eilat, Israel.
 37. Shukla, R. P., Aroosh, M., Mazafi, A., and **Ben-Yoav, H.** 2020. Intelligent microelectrodes arrays for in situ analysis of biofluids. Oral paper presented at the *Belgrade Online - 71st Annual Meeting of the International Society of Electrochemistry*.
 38. Shukla, R. P., Zagardan, T., Friedman-Tzur, A., Mayzus, D., Lavon, A., and **Ben-Yoav, H.** 2021. Intelligent multi-electrode arrays for in situ analysis of biofluids. Oral paper presented at the *Virtual 21st IEEE International Conference on Nanotechnology (IEEE NANO 2021)*.
 39. Aroosh, M., Shukla, R. P., Ware, R. E., Vinks, A. A., and **Ben-Yoav, H.** 2021. Intelligent microelectrodes array for hydroxyurea prediction in blood. Oral paper presented at the *72nd Annual Meeting of the International Society of Electrochemistry*, Hybrid Meeting - Jeju Island, Korea/Online.
 40. **Ben-Yoav, H.** 2021. Intelligent array of electrochemical sensors for biofluids analysis. Oral paper presented at the *Final Meeting of PortASAP*, Hybrid Meeting – Tallin Estonia/Online.
 41. **Ben-Yoav, H.** 2022. Intelligent microelectrodes arrays for biofluids analysis. Oral paper presented at the *18th International Conference on Electroanalysis (ESEAC 2022)*, Vilnius, Lithuania.
 42. Desagani, D., Furer, A., and **Ben-Yoav, H.** 2022. Intelligent multi-electrode arrayed sensor for rapid detection of lactate in sweat. Oral paper presented at the *Electrochem 2022*, Edinburgh, United Kingdom.
 43. Desagani, D., Furer, A., and **Ben-Yoav, H.** 2023. Intelligent multi-electrode arrayed sensor for rapid detection of lactate in sweat. Flash oral paper and poster presented at the *ILANIT 2023 conference*, Eilat, Israel.

• **Patents**

<i>Year</i>	<i>Inventors</i>	<i>Title of Patent</i>	<i>Patent #</i>	<i>Country of Registration</i>
2010	Shacham-Diamand, Ben-Yoav , Belkin, Pedahzur, Biran, Reifferscheid, Buchinger	System and method for detecting a substance in liquid	US 8,702,959 B2	U.S.
2014	Ben-Yoav , Ghodssi, Kelly, Payne, Kim, Winkler, Chocron	Analytical micro-devices for mental health treatment monitoring	US 9,581,536 B2	U.S.
2014	Winkler, Ben-Yoav , Ghodssi	Integrated and standalone label and reagent-free microfluidic devices and microsystems for differential white blood cell counts	2016/0274020 A1	U.S.
2018	Ben-Yoav , Mazafi	Electrochemical detection device and method	US 2020/0138344 A1	PCT
2020	Ben-Yoav , Zagardan, Kleiman	Apparatus and device for counting fluidic micro-spheres	63/041,926	Provisional patent application
2020	Ben-Yoav , Cazelles, Ware, Vinks	Electrochemical determination of hydroxyurea in a complex biological matrix using MoS ₂ -modified electrodes and chemometrics	63/128,876	Provisional patent application