

## CURRICULUM VITAE AND LIST OF PUBLICATIONS

### • **Personal Details**

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**Name:** Aharon (Roni) Azagury

**Date and place of birth:** January 15<sup>th</sup>, 1980, Israel

**Regular military service (dates):** July 1998 – June 2000

**Address and telephone number at work:** Ariel University, Departments of Chemical, Materials and Biotechnology Engineering, Faculty of Engineering, Ariel University  
Kiryat Hamada Ariel 40700, Israel

**Office phone number:** +972-36453193

**Cellphone number:** +972-546277955

Home address: Ha-Yasmin 111/68, Zip code: 8209673, Israel.

### • **Education**

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#### Undergraduate and Graduate Studies

**Ph.D. - 2009-2013** - Ben Gurion University of the Negev. Beer-Sheva, Israel. –  
Department of Chemical engineering.

**Advisor:** Prof. Joseph Kost.

**Title of thesis:** Effect of ultrasound and chemical penetration enhancers on transport phenomena of the chorioamnion membrane

**M.Sc. with excellence - 2007-2009** - Ben Gurion University of the Negev. Beer-Sheva, Israel. – Department of Chemical engineering.

**Advisor:** Prof. Joseph Kost.

**Title of thesis:** Chemical Enhancers for Noninvasive Detection of Amniotic Fluid Analytes

**B.Sc. with excellence (also valedictorian) - 2003-2007** - Ben Gurion University of the Negev. Beer-Sheva, Israel. – Department of Chemical engineering

#### Post-Doctoral Studies

**November 2014 - November 2019 - Postdoctoral Research Associate** at Brown University, Department of Biomedical Engineering & Department of Molecular Pharmacology, Physiology and Biotechnology (MPPB). **Supervisor:** Prof. Edith Mathiowitz.

**2013-2014 - Short-term Postdoctoral Fellow** at Ben Gurion University of the Negev, Department of Chemical Engineering. **Supervisor:** Prof. Joseph Kost.

## • Academic Ranks and Tenure in Institutes of Higher Education

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**March 2020 – Present - Assistant Professor (senior lecturer)** in the Department of Chemical, Materials, and Biotechnology Engineering, Ariel University, Israel.

## • Professional Activities

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### 1. Positions in academic administration (Departmental, Faculty, and University)

- a. **2020 – Present - Departmental search committee** for new faculty members – Department of Chemical Materials and Biotechnology Engineering
- b. **2020 – Present - Departmental Ph.D. students' acceptance ("Third-degree studies") committee** – Department of Chemical Materials and Biotechnology Engineering
- c. **2021 – Present - Member** of Ariel Center for Applied Cancer Research (ACACR)

### d. Professional functions outside universities/institutions

Editor or member of editorial board of scientific or professional journal

- a. **January 2020 – Present** – Leading editor of *Advanced Functional Materials* (IF: 16.836) special edition focused on "Advanced Materials for Drug Delivery and Theranostics" (assisted by my co-editors: Prof. Edith Mathiowitz and Prof. Joseph Kost)
- b. **2017- Today** – Reviewer in the fields of drug delivery, Ultrasound, and chemical penetration enhancers – for the journals *Small* (IF: 11.459) and *Advanced Functional Materials* (IF: 16.836), Wiley Online Library.
- c. **2020-Today** – Reviewer for the journal *Pharmaceutics* (IF: 6.321).

### e. Significant professional consulting

1. **2019** – Consulting for ADAMA R&D team, Israel
2. **2018-2019** - Engineering consultant in a patent court trial

### f. Membership in professional/scientific societies

1. **2016 – 2018** – Member of the National Academy of Inventors (NAI)
2. **2008 – 2018** – Member of the Controlled Release Society (CRS)
3. **2008 - 2014** – Member of the Israeli Chapter of Controlled Release Society (ICRS)  
Name of society
4. **2008 – 2014** – Member of the Israeli Institute of Chemical Engineers (IChE)

## • Educational activities

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### (a) Courses taught in Recent Years

**2020-2022** - Advanced Reactors and Bioreactors Design (With Prof. Polichuk)

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- Mass Transport Phenomena in Biological Systems
- Advanced Scientific Writing for Chemical Engineers
- Seminar in English for Biotechnology Engineering
- Biomimetic and Bioinspired Biomaterials in Medical Applications
- Kinetics and Design of Reactors and Bioreactors Lab
- Separation Processes in Biotechnology Lab

**2015-2016** *Polymer Science* (guest lecturer and temporary lecturer) – Graduate level - Brown University

**2013** *Mass Transport Phenomena and Separation Processes* (lecturer) - Undergrad level - Jerusalem College of Engineering (Azrieli), Department of Pharmaceutical Engineering

**2010** *Introduction to Biochemical Engineering* (TA, in Beer-Sheva Campus and Lecturer in Ashdod Campus) – Undergrad level - Sami Shamoon College of Engineering, Department of Chemical Engineering)

**2007-2013** *Separation Processes in Chemical Engineering*

*Introduction to Biochemical Engineering*

*Chemical Engineering Laboratory 1*

*Chemical Engineering Laboratory 2*

*Upstream & Downstream Biotechnological Processing*

*Process Design and Engineering Project in Chemical Engineering 1*

*Process Design and Engineering Project in Chemical Engineering 2*

**TA in all - Undergrad level** - Ben Gurion University of the Negev, Department of Chemical Engineering

### **(b) Supervision of Research Students**

**Ph.D. student\*** – Shani Shchori (in collaboration with Dr. Shibi Drori), Valeria Rahamim (supervised by Prof. Michael Firer), and Amiad Navon (supervised by Prof. Rivka Cohen).

**Master students** – Sarah Coopersmith and Eliyahu Drori

**Undergrads** - Karin Litvark and Odaya Kfir, Emil Avraham, Ella Frolov, Inbal Bar, and Revital Shik.

\*Since I am a new PI in the department I am obligated to have a “supervising” professor.

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

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#### **Honors, Citation Awards (including during studies)**

**2020** **Admission, accommodation, and travel Fellowship** to ILANIT 2020, Eilat, Israel - Contact center for Israeli Researchers, Israel Academy of Sciences and Humanities

**2012** **Third place poster** at the eighth Biannual Convention of the Israeli chapter of the Controlled Release Society (ICRS), Ma'alot Tarshiha, Israel

**2010** **First place poster** at the 46<sup>th</sup> Biannual Convention of the Israeli Institute of Chemical Engineers (IICHE), Haifa, Israel

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- 2009 Converging Technologies Scholarship** from the Israeli Council for Higher Education. Utilized at the Department of Chemical Engineering, Ben Gurion University of the Negev
- 2009 Negev scholarship for Ph.D. students** from the Kreitman School of Advanced Graduate Studies. Utilized at the Department of Chemical Engineering, Ben Gurion University of the Negev
- 2008 Second place poster** at the 44<sup>th</sup> Biannual Convention of the Israeli Institute of Chemical Engineers (IICHE), Tel-Aviv, Israel
- 2007 Department of Chemical Engineering Excellence** for previous academic year achievement, Ben Gurion University of the Negev
- 2006 Makhteshim Excellence Award scholarship**
- 2006 TEVA pharmaceuticals Excellence Award scholarship**
- 2005 Department of Chemical Engineering Excellence Award** for academic year achievement, Ben Gurion University of the Negev

### • Scientific Publications

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#### Citation Index

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**H-index (ISI/Google Scholar): 6/7**

**Total number of citations of all articles (ISI/Google Scholar): 203/326**

**Total number of citations without self-citations (ISI/Google Scholar): 192/305**

#### Authored books

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#### Books Chapter

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1. Kost, Joseph, and **Aharon Azagury**. Blotting from PhastGel to Membranes by Ultrasound (Editors: Kurien, Biji T. and Scofield, R. Hal). *Western blotting: Methods and Protocols* 1312, pp. 237-246, 2015, Springer publications (**2 citations**).

#### Articles

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1. **Aharon Azagury**, Cameron Baptista, Kosta Milovanovic, Hyeseon Shin, Peter Morello III, James Perez-Rogers, Victoria Goldenshtein, Travis Nguyen, Arianna Markel, Soham Rege, Stephanie Hojsak, Alexander Perl, Carder Jones, Megan Fife, Stacia Furtado, and Edith Mathiowitz "Biocoating—A Critical Step Governing the Oral Delivery of Polymeric Nanoparticles." *Small* 2107559, 2022
2. Rahamim, Valeria, Faina Nakonechny, **Aharon Azagury**, and Marina Nisnevitch. "Continuous Bioethanol Production by Fungi and Yeast Working in Tandem." *Energies* 15, no. 12:4338, 2022
3. Kost, Joseph, Edith Mathiowitz, and **Aharon Azagury**. "Advances in Drug Delivery and Theranostics." *Advanced Functional Materials* (Q1 7/411, 5-years IF 17.355): 2108838, 2021

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4. Rahamim, Valeria, and **Aharon Azagury**. "Bioengineered Biomimetic and Bioinspired Noninvasive Drug Delivery Systems." *Advanced Functional Materials* (Q1 7/411, 5-years IF 17.355, 1 citation): 2102033, 2021
5. Cameron Baptista, **Aharon Azagury**, Christopher M. Baker, and Edith Mathiowitz. The Characterization and Quantification of the Pressure-Temperature Induced Mesophases of Poly-L-Lactic Acid. *Polymer Journal* (Q1 12/158, 5-years IF 4.094), 226, 123822, 2021
6. Cameron Baptista\*, **Aharon Azagury\***, Christopher M. Baker, Eileen Ly, Rachel Lee, Edith Mathiowitz. The Effect of Pressure and Temperature on Polycaprolactone Morphology. *Polymer Journal* (Q1 12/158, 5-years IF 4.094, 7 citations), 191, 122227, 2020. \*Co first-authors.
7. Kenneth M. Estrellas, Mark Fiecas, Bryan Laulich, Daniel Y. Cho, Alexis Mancini, Stacia Furtado, **Aharon Azagury**, and Edith Mathiowitz. Time-dependent Mucoadhesion of Conjugated Bioadhesive Polymers. *Colloids and Surfaces B: Biointerfaces* (Q1 7/54, 5-years IF 4.957, 3 citations) 173, pp 454–469, 2019
8. **Azagury, Aharon**, Vera C. Fonseca, Daniel Y. Cho, James Perez-Rogers, Christopher M. Baker, Elaine Steranka, Victoria Goldenshtein, Dominick Calvao, Eric M. Darling, and Edith Mathiowitz. Single Step Double-walled Nanoencapsulation (SSDN). *Journal of Controlled Release* (Q1 4/166, 5-years IF 8.747, 3 citations) 280, pp. 11-19, 2018
9. Labriola NR, **Azagury A**, Gutierrez R, Mathiowitz E, and Darling EM. Concise Review: Fabrication, Customization, and Application of Cell Mimicking Microparticles in Stem Cell Science. *Stem Cells Translational Medicine* (Q1 5/81, 5-years IF 6.251, 12 citations) 7, pp. 232-240, 2018
10. **Aharon Azagury**, Eliz Amar-Lewis, Reut Appel, Mordechai Hallak and Joseph Kost. Amplified CPEs Enhancement of Chorioamnion Membrane Mass Transport by Encapsulation in Nano-sized PLGA Particles. *European Journal of Pharmaceutics and Biopharmaceutics* (Q1 11/166, 5-years IF 5.500, 4 citations) 117, pp. 292-299, 2017
11. **Aharon Azagury**, Eliz Amar-Lewis, Yana Yudilevitch, Carol Isaacson, Brenda Laster, and Joseph Kost. Ultrasound Effect on Cancerous versus Non-Cancerous Cells. *Ultrasound in Medicine & Biology* (Q1 8/43, 5-years IF 3.071, 7 citations) 42(7), pp. 1560-7, 2016
12. Baker, Christopher M., **Aharon Azagury**, and Edith Mathiowitz. Effect of Pressure on Poly-L-Lactic Acid Morphology. *Polymer Journal* (Q1 12/158, 5-years IF 4.094, 6 citations) 99, pp. 250-262, 2016
13. Lior Wolloch, **Aharon Azagury**, Riki Goldbart, Tamar Traitel, Gabriel Groisman, Mordechai Hallak, and Joseph Kost. Fetal Membrane Transport Enhancement Using

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Ultrasound. *Pharmaceutical Research* (Q1 36/246, 5-years IF 3.886, 8 citations) 32, pp. 403–413, 2015

14. **Aharon Azagury**, Luai Khoury, Yair Adato, Lior Wolloch, Ilana Ariel, Mordechai Hallak and Joseph Kost. The Synergistic Effect of Ultrasound and Chemical Penetration Enhancers on Chorioamnion Mass Transport. *Journal of Controlled Release* (Q1, IF 8.747, 9 citations) 200, pp. 35-41, 2015
15. Eliz Amar-Lewis, **Aharon Azagury**, Riki Goldbart, Tamar Traitel, Jackson Prestwood, Dalit Landesman-Milo, Dan Peer and Joseph Kost. Quaternized Starch-Based Carrier for siRNA Delivery: from Cellular Uptake to Gene Silencing. *Journal of Controlled Release* (Q1 4/166, IF 8.747, 45 citations) 185, pp. 109-120, 2014
16. **Aharon Azagury**, Eliz Amar-Lewis, Ella Mann, Raz Jelinek, Mordechai Hallak and Joseph Kost. A Novel Approach for Noninvasive Sensing and Delivery through the Amniotic Sac. *Journal of Controlled Release* (Q1 4/166, 5-years IF 8.747, 6 citations) 183C, pp. 105-113, 2014
17. **Aharon Azagury**, Luai R. Khoury, Giora Enden, and Joseph Kost. Ultrasound Mediated Transdermal Drug Delivery. *Advanced Drug Delivery Reviews* (Q1 1/166, IF 13.885, 213 citations) 72, pp. 127-143, 2014

#### **Unrefereed professional articles and publication**

1. **Aharon Azagury**, Ultrasound Effect on Cancerous versus Non-Cancerous Cells, *Atlas of Science* September 15, 2016. <https://atlasofscience.org/ultrasound-effect-on-cancerous-versus-non-cancerous-cells/>

#### **Classified articles and reports**

1. **Aharon Azagury** and Edith Mathiowitz – Characterization and analysis of green algae (by Transalgae™) morphology and interactions with the small intestine, submitted to Transalgae™ R&D team.

#### **Lectures and Presentations at Meetings and Invited Seminars not followed by Published Proceedings**

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1. **2022 – Poster** - Eli Drori, Sarah Coopersmith, Daniel Cochavy, Chen Drori, and **Aharon Azagury**. Developing Nanosized Algal-Based Oral Drug Delivery System. The 6<sup>th</sup> Conference of the Israel Society for Biotechnology Engineering, December 2022, Tel Aviv, Israel.
2. **2020 - Oral presentation** – invited presentation Biomaterial's session, “Enhancing the mass transport across biological membranes”, 9<sup>th</sup> FISEB/ILANIT February 2020, Eilat, Israel.
3. **2019 - Poster:** Cameron Baptista, **Aharon Azagury**, Christopher M. Baker, Hyeseon Shin, Eileen Ly, Rachel Lee, and Edith Mathiowitz. The Effect of

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- Temperature and Pressure on Polycaprolactone Morphology. 46<sup>th</sup> Annual Meeting & Exposition of the Controlled Release Society (CRS), July 2019, Valencia, Spain
4. **2019 - Poster:** Cameron Baptista, **Aharon Azagury**, Shiffoni Sukhlal, Vera C. Fonseca, Eric M. Darling, Edith Mathiowitz. Characterization of Insulin Loaded Poly-L-Lactic Acid Nanoparticles by Atomic Force Microscopy. 46<sup>th</sup> Annual Meeting & Exposition of the Controlled Release Society (CRS), July 2019, Valencia, Spain
  5. **2018 - Poster:** Cameron Baptista, **Aharon Azagury**, and Edith Mathiowitz. The Characterization of Pressure-temperature Induced Mesophases In Poly-l-lactic Acid. 45<sup>th</sup> Annual Meeting & Exposition of the Controlled Release Society (CRS), July 2018, New York, USA
  6. **2017 - Poster:** **Aharon Azagury**, Vera C. Fonseca, Cameron Baptista, Daniel Y. Cho, James Perez-Rogers, Christopher M. Baker, Eric M. Darling, and Edith Mathiowitz. Single Step Double-walled Nanoencapsulation (SSDN). 44<sup>th</sup> Annual Meeting & Exposition of the Controlled Release Society (CRS), July 2017, Boston, USA
  7. **2015 - Poster:** **Aharon Azagury** and Edith Mathiowitz 2015. Controlling Polymeric Particle Size and Distribution by Adjusting the Applied Mechanical Force. 42<sup>nd</sup> Annual Meeting & Exposition of the Controlled Release Society (CRS), July 2015, Edinburgh, Scotland
  8. **2012 - Poster:** **Aharon Azagury**, Yair Adato, and Prof. Joseph Kost. The Mechanism of Ultrasound Effect on Chorioamnion Membrane Mass Transport. Eighth Annual Meeting of the Israeli Chapter of the Controlled Release Society (ICRS), September 2012, Ma'alot Tarshiha, Israel
  9. **2012 - Podium Presentation and Poster:** Nitsa Buaron, **Aharon Azagury**, Riki Goldbart, Tamar Traitel, and Joseph Kost. Ultrasound Effect on DNA Permeability through Amniotic Membrane. Eighth Annual Meeting of the Israeli Chapter of the Controlled Release Society (ICRS), September 2012, Ma'alot Tarshiha, Israel
  10. **2011 – Podium presentation and Poster:** **Aharon Azagury**, R. Apel, T. Traitel, R. Goldbart, D. Shmilovitch, M. Hallak, and J. Kost. Applying Chemical Penetration Enhancers as a Novel Method for Non-Invasive Detection of Amniotic Fluid. 38<sup>th</sup> Annual Meeting & Exposition of the Controlled Release Society (CRS), August 2011, Maryland, USA
  11. **2011 - Poster:** Shlomit Edri, **Aharon Azagury**, and J. Kost. The Effect of Ultrasound on Fluorescent Marker Release Profile from PLGA Nanospheres. Israel

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Institute of Chemical Engineers (IICHE) 47<sup>th</sup> Annual Convention, June 2011,  
Ramat Gan, Israel

12. **2011 - Poster: Aharon Azagury**, R. Apel, T. Traitel, R. Goldbart, D. Shmilovitch, M. Hallak, and J. Kost. Noninvasive Approaches for Sampling Amniotic Fluid Using Chemical Enhancers Encapsulated in Nano-Sized Particles and Ultrasound. Israel Institute of Chemical Engineers (IICHE) 47<sup>th</sup> Annual Convention, June 2011, Ramat Gan, Israel
13. **2010 - Oral Presentation and Poster: Aharon Azagury**, Lior Wolloch, Riki Goldbart, Tamar Traitel, Mordechai Hallak, Janice Jang, and Joseph Kost. Effect of Ultrasound and Chemical Penetration Enhancers on Transport Phenomena of the Chorion Membrane. Seventh Annual Meeting of the Israeli chapter of the Controlled Release Society (ICRS), October 2010, Haifa, Israel
14. **2010 - Podium Presentation and Poster: Aharon Azagury**, L. Wolloch, T. Traitel, R. Goldbart, D. Shmilovitch, M. Hallak, and J. Kost. Use of Chemical Enhancers and Ultrasound for Non-Invasive Detection of Amniotic Fluid. Israel Institute of Chemical Engineers (IICHE) 46<sup>th</sup> Annual Convention, June 2010, Haifa, Israel
15. **2009 - Poster: Lior Wolloch, Aharon Azagury**, T. Traitel, R. Goldbart, D. Shmilovitch, M. Hallak, and J. Kost. Ultrasound for Non-Invasive Detection of Amniotic Fluid. 36<sup>th</sup> Annual Meeting and exposition of the Controlled Release Society (CRS), July 2009, Copenhagen, Denmark
16. **2009 - Poster: Aharon Azagury**, L. Wolloch, T. Traitel, R. Goldbart, D. Shmilovitch, M. Hallak, and J. Kost. Chemical Penetrating Enhancers for Non-Invasive Detection of Amniotic Fluid. 36<sup>th</sup> Annual Meeting and Exposition of the Controlled Release Society (CRS), July 2009, Copenhagen, Denmark
17. **2008 - Poster: Lior Wolloch, Aharon Azagury**, T. Traitel, R. Goldbart, D. Shmilovitch, M. Hallak, and J. Kost. Ultrasound for Non-Invasive Detection of Amniotic Fluid. Israel Institute of Chemical Engineers (IICHE) 44<sup>th</sup> Annual Convention, November 2008, Tel-Aviv, Israel
18. **2008 - Poster: Aharon Azagury**, L. Wolloch, T. Traitel, R. Goldbart, D. Shmilovitch, M. Hallak, and J. Kost. Chemical Enhancers for Noninvasive Detection of Amniotic Fluid. Israel Institute of Chemical Engineers (IICHE) 44<sup>th</sup> Annual Convention, November 2008, Tel-Aviv, Israel
19. **2007 - Poster: Aharon Azagury**, L. Wolloch, J. Kost. Ultrasound effect on Biological Membranes. Sixth Annual Meeting of the Israeli Chapter of the Controlled Release Society (ICRS), September 2007, Keisaria, Israel

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20. **2007 - Oral presentation – Aharon Azagury.** Ultrasound Effect on Biological Membranes, 2<sup>nd</sup> Soft Matter Meeting of Ben Gurion University of the Negev & Technion University Chemical Engineering Departments

### **Seminar presentations at Universities and Institutions**

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1. 2020 – Ariel young faculty seminar – Ariel University
2. 2019 – Department of Biotechnology Engineering – ORT Braude
3. 2019 – Department of Biomedical Engineering – Tel-Aviv University
4. 2019 – Chemistry Department – Bar-Ilan University
5. 2019 – Chemistry Department - Ariel University
6. 2019 – Department of Chemical, Materials and Biotechnology Engineering - Ariel University
7. 2019 – Special postdoc seminar - Brown University
8. 2014 – Department of Chemical Engineering – Ben Gurion University of the Negev
9. 2009 – Department of Chemical Engineering – Ben Gurion University of the Negev
10. 2007 – Department of Chemical Engineering – Ben Gurion University of the Negev

### **Patents**

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1. Kost Joseph, Halak Mordechai, Shmilovitch Drora, Triatel Tamar, Riki Goldbart, **Azaguri Aharon**, Wollach Lior, Pharmaceutical Composition and System for Permeabilizing Fetal Membranes (US20110319790A1), USA & Europe Patent Offices (**11 citations**).
2. Kost Joseph, **Azaguri Aharon**, Yudkovich Yelena. Low-Intensity Ultrasound Therapy (US10,960,233 B2), USA Patent Office (**2 citations**)
3. Edith Mathiowitz, **Aharon Azagury**, Cameron Baptista. Oral formulations with increased uptake (US20210186880A1), USA & Europe Patent Offices

### **Synopsis of research, including reference to publications and grants in above lists**

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My first research experience was working on the effect of ultrasound on the skin for transdermal drug delivery (11, 15). We focused on further understanding of the sonophoresis' induced cavitation, specifically microjets and shockwaves. We found that microjets are more effective in enhancing transdermal mass transport. Then, I wrote a book

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chapter with my mentor, Prof. Joseph Kost regarding the recovery of proteins from gels by using ultrasound (see book chapter citation 1). For my M.Sc. and Ph.D. degrees, I worked on enhancing the mass transport across the chorioamnion membrane using ultrasound and chemical penetration enhancers. I have evaluated the effect of CPEs on human CA mass transport *in vitro* and *ex vivo* (14). The results show that the tested CPEs exhibit an enhancing effect on CA mass transport. Based on the permeability results, two mechanisms of action were suggested: “extractors” and “fluidizers”. I have also assessed the effect of US on mass transport across the CA membrane. The greatest enhancement in mass transport (43-fold) *in vitro* and (23-fold) *ex vivo* for alpha-fetoprotein ( $\alpha$ FP) (12). Lastly, I have also utilized nanoparticles (NPs) to further develop the proposed method (8). Since the use of CPEs is mainly limited due to their toxicity/irritation levels, I have evaluated the effect of encapsulating CPEs in nano-sized polymeric particles on the CA membrane mass transport. This led to a decrease by a 10,000-fold in CPEs concentration (8). These results also collimated to one patent application (patents reference 1). In addition to my main Ph.D. project, I have also participated in collaborations and side projects that I have initiated. For example, I have developed a theory regarding the selective treatment of cancerous cells with Ultrasound which yielded one paper and one patent (9 and 3 respectively). Another project involved developing a modified starch vehicle for gene therapy (13).

In 2015, I joined the group of Prof. Edith Mathiowitz at Brown University. My work has mainly focused on oral drug delivery systems for large and small pharmaceutical agents (paper is currently under review and another one is classified). I have worked on improving the understanding of how polymeric nano and microparticles interact with the gastrointestinal tract for the development of improved oral drug delivery systems (paper under review). I worked on characterizing algae systems and their interaction with the gastrointestinal tract (confidential unpublished work (1)). In addition, I have developed a novel single-step method for producing double-walled nanoparticles with high yield and encapsulation efficiency (6). I have also collaborated on further understanding of mucoadhesive polymers and their time-dependent properties (5). I have also collaborated in writing a concise review on the fabrication, customization, and application of cell mimicking microparticles in stem cells (7). Finally, I have also worked extensively on polymers' properties and their induced phases by temperature and pressure (3-4, and 10).

These days I am developing in my lab noninvasive biomimetic and bioinspired drug delivery systems and published a review paper on the subject (2). I have also served as the lead editor of the special edition of Advanced Functional Materials on drug delivery systems and theranostics (1). In my research (which I have submitted this year for the first time both ISF and

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BSF-NSF grant proposals) I am harvesting the membranes on specific cells that can be used to manufacture novel drug vehicles or as coatings to polymeric nanoparticles. I have already succeeded in developing a custom-made method to measure the bioadhesive force of semi-liquid materials (such as membranes and gels). Moreover, I have established and started collaboration projects with my postdoc mentor (Prof. Edith Mathiowitz, USA), two colleagues from my department (Dr. Elyashiv (Shivi) Drori and Prof. Michael Firer) and I plan to collaborate with Dr. Faina Nakonechny and Prof. Marina Nisnevitch. Moreover, I have also established a collaboration with Dr. Jonathan Gorelick from the R&D center in Kiryat Arba. Additionally, I have also joined the Ariel Center for Applied Cancer Research (ACACR). In the near future, I plan to write two more papers, finish developing and writing five graduate-level courses, and hopefully (within time limitations) a book chapter.