Curriculum Vitae February 26, 2025

Moran Bercovici

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Scholar: https://scholar.google.com/citations?user=_Pr3Q_cAAAAJ

ACADEMIC DEGREES

09/2006 - 12/2010: Ph.D., GPA: 4.0/4.0
Department of Aeronautics and Astronautics
Research in Mechanical Engineering's Microfluidics Laboratory
Stanford University, CA, USA

03/2003 - 06/2006: M.Sc., *summa cum laude*, GPA: 94.4/100
Faculty of Aerospace Engineering
Technion - Israel Institute of Technology, Haifa, Israel

10/1998 - 06/2001: B.Sc., *summa cum laude*, GPA: 92.6/100
Faculty of Aerospace Engineering
Technion - Israel Institute of Technology, Haifa, Israel

ACADEMIC APPOINTMENTS

01/2023 – present: Professor, Faculty of Mechanical Engineering
Technion – Israel Institute of Technology, Haifa, Israel

09/2024 – present: Senior Fellow, Collegium Helveticum
The joint Institute for Advanced Studies of ETH, UZH, and ZHdK

08/2024 – present: Visiting Professor, Department of Material Science
ETH Zurich, Switzerland.

10/2017 – 12/2022: Associate Professor, Faculty of Mechanical Engineering
and Faculty of Biomedical Engineering (by courtesy, since 10/2019).
Technion – Israel Institute of Technology, Haifa, Israel

09/2018 – 05/2019: Harrington Faculty Fellow, Department of Mechanical Engineering
University of Texas at Austin

10/2011 – 09/2017: Assistant Professor, Faculty of Mechanical Engineering
Technion – Israel Institute of Technology, Haifa, Israel

01/2011 – 09/2011: Postdoctoral Research Fellow, Department of Urology
School of Medicine, Stanford University, CA, USA
Developed microfluidic assays for rapid detection of bacterial infections.

PROFESSIONAL EXPERIENCE

09/2006-12/2010: Graduate Research Assistant
Department of Mechanical Engineering, Stanford University, CA, USA

09/2001-09/2006: Research Engineer
R&D Directorate, RAFAEL, Israel

06/2000-07/2001: Student Position
R&D Directorate, RAFAEL, Israel

AWARDS AND HONORS

'12 - '23 Elected 12 times as Technion excellent lecturer (top 4% of Technion)
2023 Crown van Guard Award for Science and Technology, Technion
2023 Hershel Rich Technion Innovation Award, Technion
2021 Hershel Rich Technion Innovation Award, Technion
2021 SPIE 2021 3D Printing, Fabrication, and Manufacturing Award
2020 Ray and Miriam Klein Fund Research Prize
2019 Selected as one of 100 young scientists worldwide to participate in the 2nd World Laureates Association (WLA) Forum, Shanghai.
2019 Selected by JSPS as one of 150 'Young Leaders' to participate in the 16th Science and Technology in Society (STS) Forum, Kyoto.
2019 Blavatnik Award for Young Scientists in Israel
2018 Harrington Faculty Fellowship, University of Texas at Austin
2018 Hershel Rich Technion Innovation Award
2015 Yanai Prize for Excellence in Academic Education
2015 Krill Prize for Excellence in Scientific Research, Wolf Foundation
2015 Elected to the "40 under 40" list of The Marker magazine.
2015 Daniel Shiran Memorial Prize for an outstanding research in Bio-Medicine
2013 The Henri Gutwirth Prize for the Promotion of Research
2012 Horev Fellow, Leaders in Science and Technology – Taub Foundation
2010 LabAutomation 2010 best poster award (of 170)
2006-2010 Stanford Graduate Fellowship in Engineering and Science
2006-2008 Fulbright Doctoral Fellowship
2002 Best Students' Project Award, 42nd Israel Conference on Aerospace Sciences
1998-2001 Technion's president list for academic achievements

TEACHING EXPERIENCE

2012- present: Lecturer, Technion – Israel Institute of Technology

034013 Fluid Mechanics 1, undergraduate level.
Elected three times as Technion excellent lecturer, top 4%.

036086 Flow and transport in microdevices, graduate level. New course developed.

035013 *Computational methods in Mechanical Engineering, undergraduate. Course redesigned.*

2008-2009: Teaching Assistant, Stanford University
ME 457 (graduate) - Flow in Microdevices, Spring '08,'09
ME 354 (graduate) - Experimental Methods in Fluid Mechanics, Fall '09,'10
Held weekly office hours, provided homework solutions, gave several guest lectures, and served as instructor for final projects.

1999: Lecturer, ASAT, Technion Student Association
"Classical Mechanics" course. Lectured a three months course in classical mechanics, preparing students for Technion's classification exams in physics. Presented all lectures and was solely responsible for the development of the course syllabus, lecture notes, and homework assignments.

PUBLIC PROFESSIONAL ACTIVITIES

Journals

- Editorial advisory board member, FLOW, Cambridge University Press, 2024-.
- Editorial advisory board member, Biomicrofluidics, American Institute of Physics (AIP), 2017-2018.

Conference organization

- Conference organizer and co-chair, Batsheva de Rothschild Seminar on Physics of Microfluidics, Jan 3-8 2017, Sde-Boker, Israel. https://2moran.wixsite.com/microfluidics2017
- Conference organizer and chair, Harrington Symposium on Physics of Microfluidics, June 9-11 2019, Austin, Texas. https://2moran.wixsite.com/austinmicrofluidics
- Conference organizer and co-chair, The Art and Science of Liquid Interfaces, March 25-26, Collegium Helveticum, Zurich. http://liquid-interfaces.com

Reviewer for funding agencies

- EU Horizon 2020 FETOPEN
- Israel Science Foundation (ISF)
- Binational Science Foundation (BSF)
- Azrieli Fellowships
- Banting Fellowships

Reviewer for archived journals

- Advanced Materials
- Analyst
- Analytica Chemica Acta
- Analytical Chemistry
- Angewandte Chemie
- Biomedical Microdevices
- Biomicrofluidics

- Biosensors and Bioelectronics
- Chemical Reviews
- Diagnostics
- Electrophoresis
- Journal of Chromatography A
- Journal of Electrostatics
- Journal of Fluid Mechanics
- Lab on a Chip
- Langmuir
- Microfluidics and Nanofluidics
- Nature photonics
- Nanoscale
- Physical Review Fluids
- Physical Review Letters
- Physics of Fluids
- PNAS
- Scientific Reports
- SPIE Optical Engineering

Professional associations

- American Physical Society (APS)
- American Chemical Society (ACS)

Scientific board membership

- 2016 – 2019 Scientific board member, Pearls of Wisdom association for the advancement of nanotechnologies in Israel.

TECHNION ACTIVITIES

- 2022 – 2024, member, Professor of creative arts search committee.
- 2019 – 2022, vice dean for graduate studies in the Faculty of Mechanical Engineering.
- 2019 – 2022, member, Faculty of Mechanical Engineering search committee.
- 2018 – 2021, member, Faculty of Mechanical Engineering, committee for curriculum revision.
- 2015 – 2018, member, President's Interdisciplinary Search Committee.
- 2015, member, Faculty of Mechanical Engineering, preparation committee for international evaluation.
- 2013, member, committee for curriculum revision, nanoscience and nanotechnology program.
- 2011-2018, member, the interdepartmental committee for nanoscience and nanotechnology.

GRADUATE STUDENTS

* Primary adviser, unless otherwise mentioned

Completed M.Sc. theses

1. Merav Karsenty — M.Sc. — 2012-2014
2. Ortal Schwartz — M.Sc. in Nanoscience and Nanoengineering — 2012-2014
   Nanoscience and Nanotechnology graduate program
   Awards: Leonard and Diane Sherman Interdisciplinary Graduate School Fellow, 2013
3. Nethanel Ganor — M.Sc. in Mechanical Engineering — 2013-2014
   Awards: Sidney and Beatrice Wolberg Award, 2014
   Graduated *summa cum laude*
4. Nadya Ostromohov — M.Sc. in Mechanical Engineering — 2013-2015
5. Ofer Dagan — M.Sc. in Mechanical Engineering — 2011-2015
   Graduated *cum laude*
6. Rebecca Khalandovsky — M.Sc. — 2014-2016
7. Ayalon Levi — M.Sc. in Mechanical Engineering — 2014-2016
8. Dor Suki — M.Sc. in Mechanical Engineering — 2021-2023

Completed Ph.D. theses

1. Rita Vilensky — 2011-2015
   Co-adviser: Assoc. Prof. Ester Segal
2. Tal Zeidman — 2012-2017
3. Jonathan Avesar — 2012-2018
   Co-adviser: Prof. Shulamit Levenberg, Biomedical Engineering, Technion.
4. Tally Rosenfeld — 2012-2018
   Direct track Ph.D., Azrielli Fellow.
5. Xander van Kooten — 2015-2018
   Co-adviser: Dr. Govind Kaigala, IBM Research Zurich.
6. Federico Paratore — 2014-2018
   Co-adviser: Dr. Govind Kaigala, IBM Research Zurich.
7. Nadya Ostromohov — 2015-2019
8. Evgeniy Boyko — 2014-2020
   Direct track Ph.D., Adams Fellow.
9. Ran Eshel — 2016-2021
   Direct track PhD.
10. Baruch Rofman — 2017-2022

11. Vesna Bacheva 2018-2022
Co-adviser: Dr. Govind Kaigala, IBM Research Zurich.

12. Israel Gabay B.Sc., Mechanical Eng., Technion, Israel 2018-2024
Direct track Ph.D., Azrielli Fellow, ISEF Fellow.
Co-adviser: Assoc. Prof. Amir Gat, Technion.

Ph.D. theses in progress

1. Omer Luria M.Sc., Mechanical Eng., Tel Aviv Uni. Israel 2025-
2. Noam Moscovich B.Sc., Material Science, Technion, Israel 2025-
3. Daniel Widerker B.Sc., Mechanical Eng., Technion, Israel 2018-
Direct track Ph.D.
Co-adviser: Dr. Govind Kaigala, IBM Research Zurich.
4. Mor Elgarisi B.Sc., Mechanical Eng., Ort Braude, Israel 2020-
Direct track Ph.D., ISEF Fellow, MOST Ilan Ramon Fellow, Clore Fellow.
5. Jonathan Ericson B.Sc. Optical Eng., Ort Braude, Israel 2021-
Direct track Ph.D.,
6. Erez Hochman B.Sc. Mechanical Eng., Ben-Gurion University 2022-
Direct track Ph.D., co-advised by Prof. Aaron Sprecher

M.Sc. theses in progress

1. Ofek Efraim B.Sc. Civil and Environmental Engineering, Technion 2022-
2. Boaz Gabriel B.Sc. Aerospace Engineering, Technion 2023-

POST DOCTORAL SCIENTISTS

Former postdoctoral trainees

1. Chandra Kumar Dixit, Postdoc 2013-2014
Ali Kaufman Fellowship
The PBC Fellowship for Outstanding Post-doctoral Researchers from China and India, Council of Higher Education, 2013-2014.
2. Shimon Rubin, Postdoc 2013-2016
Lady Davis Postdoctoral Fellow, 2014-2016
3. Valeri Frumkin Ph.D., Technion, Israel 2016-2020

MAJOR RESEARCH GRANTS

PERIOD	TITLE	SOURCE	AMOUNT	PI
2012-2016	Microfluidic assay for rapid multiplexed detection of bacterial urinary tract infections	EU FP7 Marie Curie PCIG9-GA-2011-293576	100K Euro	Moran Bercovici
2012-2016	Accelerated nucleic acid hybridization on surface-based biosensors using isotachophoresis	Israel Science Foundation (ISF), Research grant, 515/12 and 1698/12	2.1M NIS	Moran Bercovici
2013-2014	Electrokinetics in porous media – developing a new toolkit for high sensitivity paper based Immunoassays	German Israel Foundation (GIF), 2287-2235.5/2011	34K Euro	Moran Bercovici
2014-2018	"Virtual vials" for enhanced biomolecular analysis	EU FP7 EID, PITN-GA-2013-607322 (Coordinator)	750K Euro	Moran Bercovici (coordinator) and Govind Kaigala (IBM Research Zurich)
2014-2015	Paper-based microfluidic device for high sensitivity biomolecular diagnostics using isotachophoresis	Ministry of Economy, NOFAR 50660	500K NIS	Moran Bercovici
2015-2016	Microfluidic platform for amplification-free detection of pathogens using isotachophoresis and peptide nucleic acids	Mérieux Research Grants	100K Euro	Moran Bercovici
2016-2021	Dynamic Microfluidic Structures for Analysis of Single Cell Systems	European Research Council (ERC) Starting grant #678734	1.75M Euro	Moran Bercovici
2017-2020	Electroosmotic control of flow patterns on superhydrophobic surfaces	German Israel Foundation (GIF), I-1346-401.10/2016	180K Euro	Moran Bercovici and Steffen Hardt (TU Darmstadt)
2019-2022	3D bio-integrated microfluidics for miniaturized medical devices	Ministry of Science and Technology	165K USD	Moran Bercovici

2020-2021	Bidirectional flow filter: microfluidic device for separation of biomolecules	ERC PoC	150K Euro	Moran Bercovici
2020-2021	Exosome separation using bidirectional electroosmotic flow	Merck GmbH	130K Euro	Moran Bercovici
2020-2021	Amplification-free detection of viral RNA using isotachophoresis and morpholino probes	Israel Innovation Authority	440K NIS	Moran Bercovici
2020-2024	Tunable bidirectional electroosmotic flow for diffusion-based separation, with applications to microscale sample preparation and biomolecular analysis	Israel Science Foundation (ISF)	1.2M NIS	Moran Bercovici
2021-2022	Fabrication of optical components in space by Fluidic Shaping	Ministry of Science and Technology	250k NIS	Moran Bercovici
2022-2027	Fluidic shaping of optical components on earth and in space	ERC consolidator grant	2.34M Euro	Moran Bercovici

PUBLICATIONS

Throughout, trainees under my supervision are underlined. Presenters in conferences marked in **bold**.

Theses

T1. Bercovici M., "High resolution simulations of isotachophoresis and experimental studies of indirect detection and identification of analytes using fluorescent carrier ampholytes," Ph.D. dissertation, Stanford University, California, 2010. Adviser: Prof. Juan G. Santiago.

T2. Bercovici M., "Evolution of Forebody Vortices over Slender Bodies at High Angles of Attack," M.Sc. Thesis, Faculty of Aerospace Engineering, Technion, Israel, 2006. Adviser: Prof. Gil Iosilevskii.

Refereed papers in professional journals

J1. Bercovici M., Lele S.K., and Santiago J.G. (2009), "Open source simulation tool for electrophoretic stacking, focusing, and separation," *Journal of Chromatography A*, **1216**, 1008–1018. (Featured in Science News, PhysOrg, and Chemical and Engineering News)

J2. Bercovici M., Lele S.K., and Santiago J.G. (2010), "Compact adaptive-grid scheme for high numerical resolution simulations of isotachophoresis," *Journal of Chromatography A,* **1217**, 588-599.

J3. Bahga S.S., Bercovici M., and Santiago J.G. (2010), "Ionic strength effects on electrophoretic focusing and separations," *Electrophoresis*, **31**, 910–919. 19

J4. Bercovici M., Kaigala G.V., Backhouse C.J., and Santiago J.G. (2010), "Fluorescent carrier ampholytes assay for portable, label-free detection of chemical toxins in tap water," *Analytical Chemistry*, ***82,*** 1858–1866. (Featured as "Toxin detection, in the palm of your hand" in Analytical Chemistry)

J5. Bercovici M., Kaigala G.V., and Santiago J.G. (2010), "Method for analyte identification using isotachophoresis and a fluorescent carrier ampholytes assay," *Analytical Chemistry*, ***82,*** 2134–2138.

J6. Kaigala G .V., Bercovici M., Behnam M., Elliott D., Santiago J.G. (2010), and Backhouse C.J., "Miniaturized system for isotachophoresis assays", *Lab on a Chip*, **17**, 2242.

J7. Bahga S.S., Kaigala G.V., Bercovici M., and Santiago J.G. (2011), "High sensitivity indirect chemical detection using on-chip isotachophoresis with variable cross-section geometry", *Electrophoresis,* **32**, 563–572.

J8. Bercovici M., Kaigala G.V., Mach K.E., Han C.M., Liao J.C., and Santiago J.G. (2011), "Rapid detection of urinary tract infections using isotachophoresis and molecular beacons", *Analytical Chemistry*, **83**, 4110-4117.

J9. Garcia G., Bercovici M., Marshall L.A., and Santiago J.G. (2011), "Sample dispersion in isotachophoresis", *Journal of Fluid Mechanics*, **679**, 455-475.

J10. Mohan, R., Mach, K.E., Bercovici, M., Pan, Y. (2011), Dhulipala, L., Wong, P.K. and Liao, J.C., "Clinical Validation of Integrated Nucleic Acid and Protein Detection on an Electrochemical Biosensor Array for Urinary Tract Infection Diagnosis" *PLoS ONE,* **6**, e26846.

J11. Bercovici M. Han C.M., Liao J.C. (2012), and Santiago J.G. "Rapid DNA hybridization using isotachophoreis", *Proceedings of the National Academy of Sciences,* **109**, 11127–11132.

J12. Bahga S.S., Bercovici M., and Santiago J.G. (2012), "Robust and high-resolution simulations of nonlinear electrokinetic processes in variable cross-section channels", *Electrophoresis*, **33,** 3036-3051.

J13. Rubin S., Schwartz O., and Bercovici M. (2014), "Sample distribution in peak mode isotachophoresis.", *Physics of Fluids* **26**, 012001.

J14. Karsenty M., Rubin S., and Bercovici M. (2014), "Accelerated surface hybridization reactions using isotachophoretic focusing", *Analytical Chemistry*, **86 (6)**, 3028–3036.

J15. Dagan O. and Bercovici M., (2014), "Simulation tool coupling non-linear electrophoresis and reaction kinetics for design and optimization of biosensors", *Analytical Chemistry* **86 (15),** 7835-7842.

J16. Schwartz O. and Bercovici M., (2014) "Microfluidic Assay for Continuous Bacteria Detection Using Antimicrobial Peptides and Isotachophoresis", Analytical Chemistry **86 (20)**, 10106-10113.

- *Selected as ACS Editors' choice.*
- *Featured on Chemical and Engineering News.*
- *Featured on the cover page of Analytical Chemistry*

J17. Rosenfeld T. and Bercovici M., (2014), "1000-fold sample focusing on paper-based microfluidic devices", *Lab on a Chip*, **14**, 4465-4474.

- *Featured on the cover page of Lab on a Chip*
- *Featured on Material Research Society*
- *Chosen as Lab on a Chip highest impact papers (top 10%)*

J18. Karsenty M., Rosenfeld T., Gommed K., and Bercovici M., (2015) "Current monitoring in microchannel with repeated constrictions for accurate detection of sample location in isotachophoresis", *Analytical Chemistry* **87 (1)**, 388–393.

J19. Ostromohov N., Schwartz O., and Bercovici M., (2015), "Focused upon Hybridization: Rapid and High Sensitivity Detection of DNA Using Isotachophoresis and Peptide Nucleic Acid Probes", *Analytical Chemistry* **87 (18)**, 9459–9466.

J20. GanOr N., Rubin S., Bercovici M., (2015), "Diffusion dependent focusing regimes in peak mode counterflow isotachophoresis", *Physics of Fluids* **27,** 072003.

J21. Vilensky R., Bercovici M., Segal E., (2015), "Oxidized porous silicon nanostructures enabling electrokinetic transport for enhanced DNA detection", *Advanced Functional Materials* 25, 6725–6732

- *Featured on the cover page of Advanced Functional Materials*

J22. Boyko E., Rubin S., Gat A.D., and Bercovici M., (2015), "Flow Patterning in Hele-Shaw Configurations using Non-Uniform Electroosmotic Slip", *Physics of Fluids* **27,** 102001.

J23. Ostromohov N., Bercovici M., and Kaigala G. V., (2016), "Delivery of Minimally Dispersed Liquid Interfaces for Sequential Surface Chemistry", *Lab on a Chip **16**, 3015-3023.*

- *Featured on the back cover of Lab on a Chip*

J24. Boyko E., Bercovici M., and Gat A.D., (2016), "Flow of Power-Law Liquids in a Hele-Shaw Cell Driven by Non-Uniform Electroosmotic Slip in the Case of Strong Depletion", *Journal of Fluid Mechanics,* vol. **807**, 235-257.

J25. Rubin S., Suss M., Bieshaveul M., and Bercovici M., (2016) "Induced-Charge Capacitive Deionization: The Electrokinetic Response of a Porous Particle to an External Electric Field", *Physical Review Letters*, **117,** 234502.

J26. Rubin S., Tulchinsky A., Gat A.D., and Bercovici M., (2017), "Elastic deformations driven by non-uniform lubrication flows", *Journal of Fluid Mechanics,* **812**, 841-865.

J27. Paratore F., Zeidman-Kalman, T., Rosenfeld T., Kaigala G.V., and Bercovici M., (2017) "Isotachoporesis-based surface immunoassay", *Analytical Chemistry* **89***,* 7373-7381.

- *Featured on the front cover of Analytical Chemistry.*

J28. Avesar J., Dado D., Truman M., Geffen Y., Bercovici M., Levenberg S., (2017) "Rapid phenotypic antimicrobial susceptibility testing using Stationary Nanoliter Droplet Arrays", *Proceedings of the National Academy of Sciences,* **114**, E5787–E5795.

J29. Boyko E., Bercovici M., and Gat A.D., (2017), "Viscous-elastic dynamics of power-law fluids within an elastic cylinder ", *Physical Review Fluids* ***2****, 73301.*

J30. van Kooten X.F., Truman-Rosentsvit M., Kaigala G.V., and Bercovici M., (2017), "Focusing analytes from 10 uL into 500 pL: on-chip processing of large volumes using isotachophoresis", *Scientific Reports,* ***7****, 10467.*

J31. Arshavsky-Graham S., Massad-Ivanir N., Paratore F., Scheper T., Bercovici M. and Segal E. (2017), On Chip Protein Pre-Concentration for Enhancing the Sensitivity of Porous Silicon Biosensors, *ACS Sensors, 2 (12)*, 1767–1773 .

J32. Zeidman Kalman T., Khalandovsky R., Tenenbaum E., and Bercovici M., (2018) "Monitoring Dissociation Kinetics during Electrophoretic Focusing to Enable High-Specificity Nucleic Acid Detection ", *Angewandte Chemie International Edition,* ***57****, 3343-3348.*

- *Selected as a 'Hot Paper'*

J33. Rosenfeld T., Bercovici M., (2018) "Amplification-free detection of DNA in a paper-based microfluidic device using electroosmotically balanced isotachophoresis", *Lab on a Chip,* **18**, 861-868.

- *Featured on the cover of Lab on a Chip*

J34. Ostromohov N., Huber D., Bercovici M., and Kaigala G.V. (2018), "Real-time monitoring of fluorescence in situ hybridization kinetics", *Analytical Chemistry*, 90, 11470−11477.

- *Featured on the cover of Lab on a Chip*

J35. Avesar, J.; Blinder, Y.; Aktin, H.; Szklanny, A.; Rosenfeld, D.; Savir, Y.; Bercovici, M.; and Levenberg, S (2018), "Nanoliter Cell Culture Array with Tunable Chemical Gradients", *Analytical Chemistry,* **90**, 7480-7488.

J36. van Kooten, X.F., Bercovici, M., and Kaigala, G.V. (2018), Extraction of electrokinetically separated analytes with on-demand encapsulation, *Lab on a Chip,* **18**, 3588-3597.

- *Selected as 'Hot Paper'*

J37. Rosenfeld T., Bercovici M., (2019) "Dynamic control of capillary flow in porous media by electroosmotic pumping", *Lab on a Chip,* **19**, 328-334.

J38. Boyko E., Eshel R., Gommed K., Gat A.D., and Bercovici M., (2019) "Elastohydrodynamics of a pre-stretched finite elastic sheet lubricated by a thin viscous film with application to microfluidic soft actuators", *Journal of Fluid Mechanics,* **862**, 732-752.

J39. Paratore F., Boyko E., Kaigala G. V. and Bercovici M. (2019), "Electroosmotic flow dipole: Experimental observation and flow field patterning", *Physical Review Letters,* **122**, 224502.

J40. Paratore F., Bacheva V., Kaigala G. V. and Bercovici M. (2019), "Dynamic microscale flow patterning using electrical modulation of zeta potential", *Proceedings of the National Academy of Sciences*, **116**, 10258-10263.

J41. Frumkin V. and Bercovici M., (2019), "Dipolar thermocapillary motor and swimmer", *Physical Review Fluids, **4**, 074002.*

J42. Van Kooten X.F., Petrini L.F.T., Kashyap A., von Voithenberg L.V., Bercovici M., and Kaigala G.V. (2019), "Spatially resolved genetic analysis of tissue sections enabled by microscale flow confinement retrieval and isotachophoretic purification", *Angewandte Chemie International Edition* **58**, 1–5.

J43. Ostromohov N., Rofman B., Bercovici M., and Kaigala G.V. (2019), "Electrokinetic Scanning Probe", *Small **2019** 1904268.*

J44. Boyko E., Eshel R., Gat A.D, and Bercovici M. (2020), "Non-uniform electro-osmotic flow drives fluid-structure instability", *Physical Review Letters, **124**, 024501.*

J45. Bacheva V., Paratore F., Kaigala G.V., and Bercovici M. (2020), "Tunable bidirectional electroosmotic flow for diffusion-based separation", *Angewandte Chemie International Edition, **132**, 2-8.*

- *Selected as 'Very Important Paper'*

J46. Dehe S., Rofman B., Bercovici M., and Hardt S., (2020),"Electroosmotic flow enhancement over superhydrophobic surfaces", *Physical Review Fluids, **5**, 053701.*

J47. Rofman B., Dehe S., Hardt S., and Bercovici M., (2020),"Intermediate states of wetting on hierarchical superhydrophobic surface ", *Langmuir, **36**, 20, 5517-5523.*

J48. Boyko E., Bercovici M., and Gat A.D. (2020), "Interfacial instability of thin films in soft microfluidic configurations actuated by electro-osmotic flow", *Physical Review Fluids*, 5, 104201.

J49. Spitzberg, J., D.; van Kooten, X., F.; Bercovici, M.; and Meller, A., (2020) "Microfluidic device for coupling isotachophoretic sample focusing with nanopore single-molecule sensing", *Nanoscale*, **12(34)**: 17805-17811.

J50. Gordon R., Weiss L.E., Eshel R., Ferdman B., Nehme E., Bercovici M., and Shechtman Y., (2020) "Dynamic Three-Dimensional Microscopic Surface Profiling by Point-Spread-Function Engineering", *Science Advances,* **6** (44), eabc0332.

J51. Widerker D., Paratore F., Bercovici M., and Kaigala G.V., (2020) "Biointegrated fluidic milling", *Advanced Materials Technologies,* 200843.

J52. Frumkin V., Bercovici M., (2021), "Fluidic shaping of optical components", *Flow*, 1 E1.

- *Inaugrual paper of the journal.*

J53. Boyko E., Bacheva V. Eigenbrod M., Paratore F., Gat A.D., Hardt S., and Bercovici M., (2021) "Microscale Hydrodynamic Cloaking and Shielding via Electro-Osmosis", *Physical Review Letters*, 126, 184502.

- *Selected as Editors' Suggestion, featured on APS Magazine and phys.org.*

J54. Elgarisi M., Frumkin M., Luria O., and Bercovici M., (2021) "Fabrication of freeform optical components by fluidic shaping", *Optic*a, Vol. 8, Issue 11, 1501-1506.

- *Featured on Optica Optics and Photonics News, AAAS.*

J55. Gabay I., Paratore F., Boyko E., Ramos A., Gat A.D., and Bercovici M., (2021) "Shaping liquid films by dielectrophoresis", *Flow,* 1 E13.

J56. Paratore F., Bacheva V., Bercovici M., and Kaigala G.V., (2021) "Reconfigurable microfluidics", *Nature Reviews Chemistry,* 6, 70-80.

J57. Bacheva V., Paratore F., Dolev M.B., Rofman B., Kaigala G.V., and Bercovici M., (2022) "Selective extraction of biomolecules using a bidirectional flow filter", *Analytical Chemistry, 94, 30, 10584-10588.*

J58. Rofman B., Naddaf R., Bar-Dolev M., Gefen T., Ben-Assa N., Gev-Zatorsky N., and Bercovici M., (2022) "Automated device for multi-stage paper-based assays enabled by an electroosmotic pumping valve", *Lab on a Chip*, https://doi.org/10.1039/D2LC00572G.

- Selected as HOT article

J59. Eshel R., Frumkin F., Nice M., Luria O., Ferdman B., Opatovski N., Gommed K., Shusteff M., Shechtman Y., and Bercovici M., (2022) "Programmable thermocapillary shaping of thin liquid films", *Flow,* 2 E27.

J60. Bacheva V., Firouzeh A., Leroy E., Balciunaite A., Davila D., Gabay I., Paratore F., Bercovici M., Shea H., Kaigala G., (2023) "Dynamic control of high-voltage actuator arrays by light-pattern projection on photoconductive switches", *Microsystems and Nanoengineering* 9, 59.

J61. Gabay I., Bacheva V., Ilsar D., Bercovici M., Ramos A., and Gat A.D., (2023) "Dynamics of fixed-volume pinned films–dealing with a non-self-adjoint thin-film problem", Journal of Fluid Mechanics, 969, A17.

J62. Luria O., Elgarisi M., Frumkin V., Razin A., Ericson J., Gommed K., Widerker D., Gabay I., Belikov R., Bookbinder J., Balaban E., and Bercovici M., (2023) "Fluidic Shaping and in-situ Measurement of Liquid Lenses in Microgravity", *npj Microgravity* 9 (1), 74.

J63. Widerker D., Kaigala G.V, Bercovici M, (2023) "Additive manufacturing of multi-metal microstructures by localized electrochemical deposition under hydrodynamic confinement", Advanced Material Technologies, 2301290.

J64. Luria O., Gommed K., Elgarisi M., Frumkin V., Razin A., Ericson J., Widerker D., Gabay I., Dwivedi V., Belikov R., Bookbinder J., Cannon H., Balaban E., and Bercovici M., (2024) "Experimental setup for creation and measurement of spherical liquid mirrors in microgravity by Fluidic Shaping", Journal of Astronomical Telescopes, Instruments, and Systems, Vol 10, Issue 4, 044010.

J65. Elgarisi M., Luria O., Katzman Y., Widerker D., Frumkin V., Bercovici M., (2024) "Fluidic Approach to Corrective Eyewear Manufacturing in Low-Resource Settings", under review, https://arxiv.org/abs/2406.10067.

Patents

(Only granted patents are listed. Additional patents pending.)

P1. Bercovici M., Frumkin V., "Systems and methos for manufacturing articles in space", US-12,151,408.

P2. Frumkin V., Bercovici M., Rubin S., and Rotschild C., "Thermally-actuated devices and use thereof." US-11,294,205.

P3. Meller A., Bercovici M., Van Kooten X.F., and Spitzberg J. "Devices and methods for improved single-molecule detection." US-11,364,499.

P4. Kaigala G., Paratore F., Gokce O, Bercovici M., van Kooten X., Electrokinetically separating, encapsulating and extracting analytes on a microfluidic device, US-11117131-B2, 2021.

P5. Bercovici M., Kaigala G., van Kooten X.F., Ostromohov N., Paratore F., *Device and method for isotachophoretic focusing large sample volumes,* US-11119068-B2.

P6. Bercovici M. and Karsenty M., *Method and device for accelerated surface-based reactions*, US-10890559-B2, 2021.

P7. Kaigala G.V., Ostromohov N., Bercovici M., *Electro-kinectic device for species exchange*, US-10710079-B2, 2020.

P8. Bercovici G., Kaigala G.V., van Kooten X.F, Ostromohov N., Paratore F., *Characterizing kinetic responses of a ligand-functionalized surface*, US-10564158-B2, 2020.

P9. Bercovici M., Schwartz O., *Continuous cell detection by isotachophoresis*, US-10527584-B2, 2020.

P10. Bercovici M., Ostromohov N., Schwartz O., *Detection of genetic sequences using PNA probes and Isotachophoresis*, US-10301669-B2, 2019.

P11. Bercovici M., Karsenty M., Rosenfeld T., *Methods of isotachophoresis detection*, US-10281427-B2, 2019.

P12. Chambers R.D., Santiago J.G., Bercovici M., *Non-focusing tracers for indirect detection in electrophoretic displacement*, US-8721858-B2, 2014.

P13. Santiago J.G., Bercovici M., Kaigala G.V., Chambers R.D., *Fluorescent finger prints for indirect detection in isotachophoresis*, US-8562804-B2,2013.

INVITED LECTURES

Invited lectures at conferences

IL1. **Bercovici M.** Han C.M., Santiago J.G. and Liao J.C., "10,000 fold acceleration of DNA hybridization using isotachophoresis, and applications to rapid disease diagnostics", *Annual conference of the Israel Institute of Chemical Engineers*, Tel Aviv, May 1st 2013.

IL2. **Bercovici M.**, "Isotachophoresis based biosensors", *The second conference of The Israel Society for Biotechnology Engineering (ISBE),* Tel Aviv, Dec 1st 2013.

IL3. **Bercovici M.**, "Isotachophoresis based biosensors", *Nano-Israel,* Tel Aviv, Mar 24th 2014.

IL4. Rosenfeld T., Paratore F., Zeidman T., and **Bercovici M.**, "Electrokinetically Enhanced Microfluidic Paper-Based Analytical Devices," 33rd IVS Annual Conference, Weizmann Institute, Israel, September 9 2015.

IL5. Rosenfeld T. and **Bercovici M.**, "Boosting the sensitivity of paper-based biosensors using isotachophoresis," Negev Global Issues, Ben-Gurion University, Beer Sheva, May 27 – June 1, 2015.

IL6. Bercovici M., "Enhanced biomolecular analysis using isotachophoresis", Israeli Geneticists Conference, Rambam Healthcare campus, Haifa, November 20 2015.

IL7. **Bercovici M.,** "Virtual Vials – Microfluidic devices for rapid bimolecular diagnostics", Israel Society for Clinical Laboratory Sciences (ISCLS), Tel Aviv, Israel March 29-30 2016. (plenary)

IL8. F. Paratore, X. van Kooten, N. Ostromohov, T. Rosenfeld, T. Zeidman, R. Khalandovsky, G.V. Kaigala, and **M. Bercovici**, "Biosensing using isotachophoresis", Batsheva de Rotshchild Seminar on New Concepts in Biosensing, Ein Bokek, Feb 12-16, 2017.

IL9. **M. Bercovici,** Lab on a Chip and Microfluidics World Congress, San-Diego, Oct 2-4, 2017. (keynote)

IL10. **M. Bercovici,** SPIE Photonics West, San Francisco, Jan 27 – Feb 1, 2018. (keynote)

IL11. **M. Bercovici,** 34th international Symposium on Microscale Separations and Bioanalysis (MSB2018), Rio de Janeiro, Brazil, Feb 18-22, 2018. (keynote)

IL12. **M. Bercovici,** Lab on a Chip and Microfluidics Europe, Rotterdam, June 5-6, 2018. (plenary)

IL13. **M. Bercovici,** 17th Brazilian Congress of Thermal Sciences and Engineering (ENCIT2018), Águas de Lindóia, State of Sao Paulo, Brazil, Nov 25-28, 2018. (keynote)

IL14. **M. Bercovici,** 16th International Interdisciplinary Conference on Bioanalysis (CECE2019), Gdansk, Poland, Sep 24-26, 2019. (keynote)

IL15. **M. Bercovici,** Micro-swimmers and soft-robotics, Haifa, Israel, Feb 2-4, 2020.

IL16. **M. Bercovici,** 2nd Annual Conference on Chemical Sensors for Wearable Devices invitation, Haifa, Israel, Feb 4-5, 2020.

IL17. **M. Bercovici,** Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, Chicago, IL, Mar 2-5, 2020.

IL18. **M. Bercovici,** 37th International Symposium on Microscale separation and Bioanalysis (MSB 2021), Virtual Edition, July 13, 2021. (keynote)

IL19. **M. Bercovici,** 14th International Symposium on Electrokinetics (ELKIN 2022), July 4-6 2022.

IL20. **M. Bercovici**, Gordon Research Conference (GRC) - Physics and Chemistry of Microfluidics, Lucca, Italy, June 2023.

IL21. **M. Bercovici,** The 29th International Conference on Miniaturized Systems for Chemistry and Life Sciences, Adelaide, Australia, November 2025 (Pleanary)

Invited lectures at seminars and academic symposia

IL22. Nanotechnology Symposium, Stanford Institute for Immunity Transplantation and Infection, Aug 2011

IL23. Nanoscience Symposium, Universitat Autonoma de Barcelona, Nov 2012

IL24. Jacob Blaustein Institute for Desert Research, Ben-Gurion University, Sede Boker, Dec 2012

IL25. Medical technological innovation, Rambam Hospital, Feb 2013

IL26. Department of Chemistry, Heidelberg University, Nov 2013

IL27. Center for Smart Interfaces, Technical University Darmstadt, Nov 2013

IL28. Department of Chemical Engineering Seminar, Ben Gurion University, Dec 2013

IL29. Center for Bioengineering, University of California in Santa Barbara, July 2014

IL30. Department of Mechanical Engineering, University of Texas in Austin, Oct 2014

IL31. Innovation forum of the food industry, The Hebrew University, Rehovot, Nov 2014

IL32. Israel Institute for Biological Research, Ness Ziona, Israel, Feb 2015

IL33. Researchers conference at Ha'Emek Hospital, Afula, Israel Oct 2015

IL34. Department of Biomedical Engineering, Ben-Gurion University, Jan 2016

IL35. *Quo Vadis Chemie* Lecture Series, Charles University, Prague, Mar 2016

IL36. ICB seminar series, Institute for Chemical and Bioengineering, ETH Zurich, Dec 2016

IL37. Kohlrausch Seminar, Charles University, Prague, June 2017

IL38. Department of Mechanical Engineering, University of Texas at Austin, Oct 2018

IL39. Department of Chemistry, York University, Toronto, Mar 2019

IL40. Department of Chemistry, University of Toronto, Toronto, Mar 2019

IL41. Department of Chemistry, University of Texas at Austin, Mar 2019

IL42. Department of Chemical and Biological Engineering, Colorado State University, May 2019

IL43. Department of Mechanical Engineering, University of Colorado Boulder, May 2019

IL44. NASA Goddard Space Center Engineering Colloquium, Sep 2020

IL45. Department of Chemical Physics, Tel Aviv University, Oct 2020

IL46. Fluids Under Confinement lecture series webinar at IIT Kharagpur, Mar 2021

IL47. Cornell Fluids Seminar, Aug 2021

IL48. Flow Journal Webinar, Oct 2021

IL49. Department of Mechanical Engineering, Stanford University, Dec 2021

IL50. The Inter-University Institute for Marine Sciences, March 2023

IL51. Racademy, Rafael, March 2023

IL52. Department of Material Science, Ben Gurion University of the Negev, March 2023

IL53. MicroTAStic Seminar series, May 2023

CONFERENCES

Refereed papers in conference proceedings

C1. **Bercovici M.**, Bachar O., Bendak S., Ben-Oz Y., Brandeis Y., Detinis I., Epshtein O., Landsman Y., Moldavsky Y., Rabinovich S., Usvyatsov Y., and Atir Y., "Design of twin maneuvering microsatellites for research of the dynamics of the magnetic Field", *42nd Israel Annual Conference on Aerospace Sciences,* Tel Aviv, Israel, 2002.

C2. **Bercovici M.**, Arad A., Seifert A., and Yehoshua T., "On the computational modeling of synthetic Jet actuators", *46th Israel annual conference on aerospace sciences,* Tel-Aviv, Israel, 2006.

C3. **Bercovici M.**, Iosilevskii G., and Arad E., "Evolution of forebody vortices over slender bodies at high angles of attack," *47th Israel annual conference on aerospace sciences*, Tel-Aviv, Israel, 2007.

C4. Khurana T., Bercovici M., **Santiago J.G.**, "Indirect fluorescence detection of non fluorescent analytes using isotachophoretic mobility markers," *The Sixth International Conference on Nanochannels, Microchannels, and Minichannels,* Darmstadt, Germany. June 23-25, 2008.

C5. **Bercovici M.**, Lele S.K. and Santiago J.G., "A fast and accurate isotachophoresis simulation tool", *Proceedings of the 12th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2008),* San Diego, USA, October 12-16, 2008.

C6. Bercovici M., Kaigala G.V., Behnam M., Elliott D., **Santiago J.G**., and Backhouse C.J., "Portable instrument and assay for label free detection of toxins in tap water," *Proceedings of the 13th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2009)*, Jeju, Korea, November 1-5, 2009.

C7. **Bahga S.S**, Kaigala G.V., Bercovici M., and Santiago J.G., "Strongly convergent channels for high sensitivity label-free chemical detection using isotachophoresis," *Proceedings of the 14th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2010)*, Groningen, Netherlands, November 3-7, 2010.

C8. Bercovici M., Kaigala G.V., Liao J.C., and **Santiago J.G.**, "Rapid and high sensitivity detection of urinary tract infections using isotachophoresis," *Proceedings of the 14th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2010)*, Groningen, Netherlands, November 3-7, 2010.

C9. Bercovici M., **Han C.M.**, Liao J.C., and Santiago J.G., "Rapid DNA hybridization reactions using isotachophoresis," *Proceedings of the 15th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2011)*, Seattle, Washington, October 2-6, 2011.

C10. Dagan O. and Bercovici M., "Novel simulation tool coupling non-linear electrophoresis and reaction kinetics", *Proceedings of the 16th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2012)*, Okinawa, Japan, October 28 – November 1, 2012.

C11. Ostromohov N., Schwartz O., and Bercovici M., "Leveraging peptide nucleic acid probes and isotachophoresis for on-chip high sensitivity detection of DNA", *Proceedings of the 17th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2013)*, Freiburg, Germany, October 27 – 31, 2013.

C12. Rosenfeld T. and Bercovici M., "1000-fold sample focusing on paper-based microfluidic devices", *Proceedings of the 18th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2014)*, San Antonio, Texas, October 26 – 30, 2014.

C13. Karsenty M., Rosenfeld T., Gommed K., and Bercovici M., "1000-fold acceleration of surface biosensors using isotachophoresis", *Proceedings of the 18th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2014)*, San Antonio, Texas, October 26 – 30, 2014.

C14. Paratore F., Zeidman-Kalman, T., Rosenfeld T., Kaigala G.V., and Bercovici M., "Isotachoporesis based surface immunoassay". *Proceedings of the 20th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2016)*, Dublin, Ireland, October 9-13, 2016.

C15. van Kooten X.F., Truman-Rosentsvit M., Kaigala G.V., and Bercovici M., "Focusing analytes from 10 uL into 500pL: on-chip processing of large volumes using isotachophoresis". *Proceedings of the 20th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2016)*, Dublin, Ireland, October 9-13, 2016.

C16. Ostromohov N., Bercovici M., and Kaigala G. V. (2016), "Delivery of Minimally Dispersed Liquid Interfaces for Sequential Surface Chemistry", *Proceedings of the 20th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2016)*, Dublin, Ireland, October 9-13, 2016.

C17. Ostromohov N., Bercovici M., and Kaigala G. V. (2017), "Electrokinetic scanning probe for biomolecular analysis", *Proceedings of the 21th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2017)*, Georgia, USA, October 22-26, 2017.

C18. Paratore F., Kaigala G. V., and Bercovici M. (2017), "Patterning electro-osmotic flow using non-uniform surface charge in a Hele-Shaw cell", *Proceedings of the 21th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2017)*, Georgia, USA, October 22-26, 2017.

C19. Paratore F., Bacheva V., Rubin S., Bercovici M. and Kaigala G. V., "Diffusion-Based Separation Using Non-Uniform Electroosmotic Flow", Proceedings of the 22nd International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2018), Kaohsiung, Taiwan, Nov 11–15, 2018.

C20. Paratore F., Boyko E., Gat A., Kaigala G. V. and Bercovici M., "Toward Microscale Flow Control Using Non-Uniform Electro-Osmotic Flow", Proceedings of SPIE 10491, Microfluidics,

BioMEMS, and Medical Microsystems XVI, 104910P, SPIE BiOS, San Francisco, California, United States, 2018.

C21. Bacheva, V., Paratore, F., Rubin, S., Kaigala, G. V., Bercovici, M., "Size-based biomolecular separation enabled by field-effect electroosmosis", *Proceedings of the 23nd International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2019)*, Basel, Switzerland, Oct 27–31, 2019.

C22. Widerker D., Paratore F., Bercovici M., Kaigala G. V.,"Biointegrated Subtractive Microfabrication by Hydrodynamic Flow Confinement", *2020 IEEE 33rd International Conference on Micro Electro Mechanical Systems (MEMS), Vancouver, BC, Canada, pp. 102-105, 2020.*

C23. Bacheva, V., Paratore, F., Dolev, M. B., Rofman, B., Kaigala, G. V., Bercovici, M., "Selective extraction of biomolecules using a bidirectional flow filter", *Proceedings of the 25th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2021)*, Palm Springs, California, USA, Oct 10-14, 2021. (Best talk award)

C24. *Vesna Bacheva*, Amir Firouzeh, Edouard Leroy, Aiste Balciunaite, Diana Davila, Israel Gabay, Federico Paratore, Moran Bercovici, Herbert Shea, Govind Kaigala, "Photoconductive switching of a high-voltage actuator array", *2022 IEEE 35th International Conference on Micro Electro Mechanical Systems (MEMS)*, Tokyo, Japan, Jan 9-13 2022.

C25. Baruch Rofman , Rawi Naddaf , Maya Bar-Dolev , Tal Gefen, Nadav Ben-Assa , Naama Geva-Zatorsky, and Moran Bercovici, "Electroosmotic pumping valve for automation of multi-step paper-pbased assays", Proceedings of the 26th International Conference on Miniaturized Systems for Chemistry and Life Sciences (microTAS2022), Hangzhou, China, Oct 23-27, 2022.

C26. Daniel Widerker, Govind V. Kaigala, Moran Bercovici, (2023) "Localized electrochemical deposition of multi-metal structures by hydrodynamic flow confinement", The 22nd international conference on solid-states sensors, actuators, and microsystems (Transducers2023), Kyoto, Japan, June 25-29, 2023.

Non-refereed conference presentations and posters

1. Bercovici M., Lele S.K., and Santiago J.G., "Simulation and optimization of isotachophoresis", *Thermal and Fluid Sciences Affiliates and Sponsors Conference*, Stanford, CA, February 6-8, 2008.
2. Bercovici M., Lele S.K., and Santiago J.G., "Simulation and optimization of isotachophoresis", Invited, Department of Applied Chemistry, The University of Tokyo, Tokyo, Japan, March 26, 2008.
3. Bercovici M. and Santiago J.G., "Dispersion in isotachophoresis", *61st Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Antonio, Texas, November 23-25, 2008.

4. **Kaigala G.V., Bercovici M.**, Chambers R.D., Backhouse C.J, and Santiago J.G., "Portable instrument for label-free toxin detection," *DARPA N/MEMS S&T Fundamentals meeting*, Sun River, Oregon, USA, July 8,2009.
5. **Kaigala G.V.,** Bercovici M., Chambers R.D., Behnam M., Elliott D., Santiago J.G., and Backhouse C.J., "Portable instrument for label-Free toxin detection," *Gordon Research Conference on Physics and Chemistry of Microfluidics*, Lucca, Italy, June 28-July 3, 2009.
6. **Bercovici M.,** Kaigala G.V., Behnam M., Elliott D., Santiago J.G., and Backhouse C.J., "Fluorescent finger prints for toxin detection in untreated tap water," *Gordon Research Conference on Physics and Chemistry of Microfluidics*, Lucca, Italy, June 28-July 3, 2009.
7. **Garcia G.**, Bercovici M. and Santiago J.G., "Numerical and experimental study of dispersion dynamics in isotachophoresis," *62nd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Minneapolis, Minnesota, November 22-24, 2009.
8. **Bercovici M.**, Kaigala G.V., Backhouse C.J., and Santiago J.G., "Fluorescent carrier ampholyte assay for label-free detection and identification of analytes via isotachophoresis," *13th Annual Meeting of the Israel Analytical Chemistry Society*, Tel-Aviv, Israel, January 19-20, 2010.
9. **Kaigala G.V.**, Bercovici M., Bahga S.S., Behnam M., Elliott D., Backhouse C.J., and Santiago J.G., "Rapid chemical detection and identification with a hand-held device," *Lab Automation 2010 Conference*, Palm Springs, California, January 24-27, 2010. (Selected as finalist for the 2010 Lab Automation Innovation Award)
10. **Bercovici M.,** Kaigala G.V., Backhouse C.J., and Santiago J.G., "Label-Free Toxin Detection Using Fluorescent Fingerprint Assay" *Lab Automation 2010 Conference*, Palm Springs, California, January 24-27, 2010. (Best poster award, of 174 posters).
11. Bercovici M., Kaigala G.V., Bahga S.S., Backhouse C.J., and **Santiago J.G.**, "Rapid chemical detection and identification in a hand held device", *2010 International Chemical Congress of Pacific Basin Societies (Pacifichem)*, Honolulu, Hawaii, December 15-20, 2010. (Invited plenary lecture, presented by B.S.S.)
12. **Bercovici M.**, Kaigala G.V., Mach K.E., Liao J.C., and Santiago J.G., "Novel assay and system for rapid diagnostics of urinary tract infections using on-chip isotachophoresis and molecular beacons" *Lab Automation 2011 Conference*, Palm Springs, California, January 29-February 2, 2011.
13. **Garcia-Schwarz, G.,** M. Bercovici, L.A. Marshall, J.G. Santiago, "Sample dispersion in isotachophoresis", *BioX Interdisciplinary Initiatives Symposium*, Stanford, California, March 11, 2011.
14. M. Bercovici, **C.M. Han**, J.G. Santiago, "Rapid DNA hybridization using isotachophoresis" "Sample dispersion in isotachophoresis", *BioX Interdisciplinary Initiatives Symposium*, Stanford, California, March 11, 2011.
15. **Bercovici M.,** Kaigala G.V., Mach K.E., Han C.M., Liao J.C., and Santiago J.G., "Rapid detection of urinary tract infections using isotachophoresis and molecular beacons", *Gordon Research*

Conference on Physics and Chemistry of Microfluidics, Waterville Valley, New Hampshire, June 26-July 1, 2011.

16. **Bercovici M.** Han C.M., Santiago J.G. and Liao J.C., "Rapid DNA hybridization using isotachophoresis", *Gordon Research Conference on Physics and Chemistry of Microfluidics*, Waterville Valley, New Hampshire, June 26-July 1, 2011.

17. **Bercovici M.** Han C.M., Santiago J.G. and Liao J.C., "10,000 fold acceleration of DNA hybridization reactions using isotachophoresis," *15th Annual Meeting of the Israel Analytical Chemistry Society*, Tel-Aviv, Israel, January 24-25, 2012.

18. Han C., M. Bercovici, L.A. Marshall, G. Garcia-Schwarz, A. Persat, J.C. Liao, and **Santiago J.G.**, "Isotachophoresis for extraction and rapid hybridization of nucleic acids," *International Symposium, Exhibit & Workshop on Electro- and Liquid Phase-Separation Techniques, ITP 2012,* Baltimore, MD, September 30 - October 3, 2012.

19. **Vilensky R.**, Bercovici M., and Segal E., "High sensitivity label-free nucleic acid detection using porous silicon and isotachophoresis *," The second conference of The Israel Society for Biotechnology Engineering (ISBE),* Tel Aviv, December 1st, 2013.

20. **Zeidman T.**, and Bercovici M., "Multiplexed Detection of Nucleic Acid Sequences from Raw Urine Samples Using Isotachophoresis," *The second conference of The Israel Society for Biotechnology Engineering (ISBE),* Tel Aviv, December 1st, 2013.

21. **Karsenty M.**, and Bercovici M., "Accelerated nucleic acid hybridization on surface-based biosensors using isotachophoresis," *The second conference of The Israel Society for Biotechnology Engineering (ISBE),* Tel Aviv, December 1st, 2013.

22. **Schwartz O.,** and Bercovici M., "Microfluidic assay for continuous real-time pathogen detection using antimicrobial peptides and isotachophoresis," *The second conference of The Israel Society for Biotechnology Engineering (ISBE),* Tel Aviv, December 1st, 2013.

23. **Rosenfeld T.**, and Bercovici M., "Electrokinetics on paper-based microfluidic devices: towards low-cost high sensitivity biomolecular diagnostics," *The second conference of The Israel Society for Biotechnology Engineering (ISBE),* Tel Aviv, December 1st, 2013.

24. **Ostromohov N.**, and Bercovici M., "Leveraging peptide nucleic acid probes and isotachophoresis for on-chip high sensitivity detection of DNA ," *The second conference of The Israel Society for Biotechnology Engineering (ISBE),* Tel Aviv, December 1st, 2013.

25. **Levy A.**, Dixit C., Starosvetsky E., Shen-Orr S., and Bercovici M., "Simulation-based design of a microfluidic devie for cell pairing and analysis," *The second conference of The Israel Society for Biotechnology Engineering (ISBE),* Tel Aviv, December 1st, 2013.

26. Ostromohov N., and **Bercovici M.**, "Amplification free detection of DNA sequences at 100 fM concentrations *," Gordon Research Conference on Bioanalytical Sensors,* Newport, Rhode Island, June 27-July 1, 2014.

27. **Karsenty M**, Rubin S., and Bercovici M., "Accelerated nucleic acid hybridization son surface based biosensors under isotachophoresis," *Gordon Research Conference on Bioanalytical Sensors*, Newport, Rhode Island, June 27-July 1, 2014.

28. Rosenfeld T., and Bercovici M., "1000-fold sample focusing on paper-based microfluidic devices ," *Gordon Research Conference on Bioanalytical Sensors*, Newport, Rhode Island, June 27-July 1, 2014.

29. Boyko E., Rubin S., Gat A., and Bercovici M., "2D Flow Patterning using Non-uniform Electroosmotic flow," *Israeli Conference on Mechanical Engineering (ICME),* Tel Aviv. March 2-3, 2015.

30. Rubin S., Boyko E., Gat A., and Bercovici M., "Elastic Surface Deformations Driven by Non-Uniform Electroosmotic Flow in a Hele-Shaw cell," *Fluids & Elasticity,* Biarritz, France, June 22-24, 2015.

31. Rubin S., Boyko E., Gat A., and Bercovici M., "Electroosmotic Flow in Hele-Shaw Configurations with Non- Uniform Surface Charge,", *Gordon Research Conference on Physics and Chemistry of Microfluidics*, Mount Snow, Vermont, May 31 – June 5, 2015.

32. Ostromohov N., Khalandovsky R., and Bercovici M., "Focused upon hybridization: Rapid and high-sensitivity amplification-free detection of DNA using isotachophoresis and peptide nucleic acid probes," *ITP2015*, Helsinki, August 30 - September 5, 2015.

33. Rubin S., Gat A., and Bercovici M., "Elastic deformations in a Hele-Shaw cell driven by local non-homogeneities of fluid properties," *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, Massachusetts, November 22-24, 2015.

34. Boyko E., Rubin S., Gat A., and Bercovici M., "2D Flow patterning in Hele-Shaw configurations using Non-Uniform Electroosmotic Slip," *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, Massachusetts, November 22-24, 2015.

35. Wolowelsky K., Bercovici M., and Rotschild C., "CDI controlled spectral emission," *International conference on capacitive deionization and electrosorption*, Saarbucken Germany, October 26-29 2015.

36. Vilensky R., Bercovici M., and Segal E., "1,000-fold sensitivity enhancement of porous Si biosensors for nucleic acid detection", *10th international conference in porous semiconductors – science and technology*, Tarragona, Spain, March 6 2016.

37. Ostromohov N., Bercovici M., and Kaigala G.V., "Delivery of minimally dispersed liquid interfaces for sequential surface chemistry", *Swiss nano convention*, Basel, Switzerland, June 30 – July 1 2016.

38. E. Boyko, M. Bercovici, and A. D. Gat, "Flow of power-law liquids in a Hele-Shaw cell driven by non-uniform electro-osmotic slip in the case of strong depletion", *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, Oregon, Nov 20-22, 2016.

39. A. D. Gat, E. Boyko, and M. Bercovici, "Viscous-elastic dynamics of power-law fluids within an elastic cylinder", *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, Oregon, November 20-22, 2016.

40. M. Bercovici, E. Boyko, and A. D. Gat, "Deformations of a pre-stretched elastic membrane driven by non-uniform electro-osmotic flow", *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, Oregon, November 20-22, 2016.

41. E. Boyko, S. Rubin, A.D. Gat, and **M. Bercovici,** "Flow and deformation patterning with non-uniform electro-osmotic slip", *Batsheva de Rothschild Seminar on Physics of Microfluidics*, Sde Boker, January 3-8, 2017.
42. **K. Wolwelsky**, E. Guyes, S. Rubin, M. Suss, M. Bercovici, and C. Rotschild, **"**Color control through FRET efficiency modulation using CDI", *SPIE Photonics West* 2017, San Francisco, California, January 28 – February 2, 2017.
43. **Boyko E.**, Gat A.D. and M. Bercovici, "Microscale deformations driven by various actuation mechanisms", Mini-symposium in memoriam of Antonio Castellanos Mata: Electro-hydrodynamics, gas discharges, granular materials, St. Petersburg, June 25-30, 2017.
44. **F. Paratore**, G.V. Kaigala, M. Bercovici, "Experimental demonstration of flow patterning in a Hele-Shaw cell using non-uniform zeta potential", Flow17 Micro and nanofluidics fundamentals and applications, Paris, France, July 3-5, 2017.
45. **V. Frumkin**, and M. Bercovici, "Elastic deformations driven by the thermocapillary effect", Flow17 Micro and nanofluidics fundamentals and applications, Paris, France, July 3-5, 2017.
46. **N. Ostromohov**, G.V. Kaigala, M. Bercovici, "Electrokinetic scanning probe", Flow17 Micro and nanofluidics fundamentals and applications, Paris, France, July 3-5, 2017.
47. **R. Eshel**, E. Boyko, K. Gommed, and M. Bercovici, "Experimental study of elastic deformation driven by electro-osmotic flow", Paris, France, July 3-5, 2017.
48. **E. Boyko**, A. Gat, and M. Bercovici, Deformations of a pre-stretched and lubricated finite elastic sheet", Paris, France, July 3-5, 2017.
49. **Frumkin V.** and Bercovici M., "Elastic deformations driven by the thermocapillary effect", The Annual Meeting of the Israeli Mathematical Union, Rimonim Palm Beach, Acre, Israel, May 25-28, 2017.
50. **Frumkin V.** and Bercovici M., "Elastic deformations driven by the thermocapillary effect", Flow 17, UPMC, Paris, France, July 3-5, 2017.
51. **Boyko E**, Gat A. and Bercovici M., "Deformations of a pre-stretched and lubricated finite elastic membrane driven by non-uniform external forcing", 70th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Denver, Colorado, November 19-21, 2017.
52. **Frumkin V.** and Bercovici M., "Thermocapillary dipole in a Hele-Shaw type confinement", 9th Meeting of the International Marangoni Association, Guilin, China, Aug. 31-September 5, 2018.
53. **Boyko E.**, Gat A. and Bercovici M., "Elastic deformation instability in soft microfluidic configurations induced by non-uniform electro-osmotic flow", 9th Conference of the International Maragoni Association (IMA9), Guilin, August 30 – September 5, 2018.
54. **E. Boyko**, A. Gat and M. Bercovici, "Elastic deformation instability in soft microfluidic configurations induced by non-uniform electro-osmotic flow", 12th European Fluid Mechanics Conference (EFMC12), Vienna, September 9-13, 2018.

55. X.F. van Kooten, G.V. Kaigala and M. Bercovici, "Encapsulation-on-demand: retrieving analytes of interest from on-chip electrokinetic separations", 44th Micro and Nano Engineering Conference (MNE), Copenhagen, September 24-27, 2018.
56. Frumkin V. and Bercovici M., "Thermocapillary dipole in a Hele-Shaw cell", Micro- and Nano-Fluidics: Fundamentals and Applications, Lorentz Center, Leiden, Netherlands, November 12-16, 2018.
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62. Bacheva, V., Paratore, F., Rubin, S., Kaigala, G.V., Bercovici, M., "Size-based biomolecular separation enabled by field-effect electroosmosis", Miniaturized Systems for Chemistry and Life Sciences (microTAS2019)", Basel, Switzerland, Oct 28, 2019.
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earth and in space", 62nd Israel Annual Conference on Aerospace Sciences, Haifa, Israel, 16 March 2023.

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