

Curriculum vitae

**GILAD YOSSFON**

Associate Professor

**PERSONAL**

Address: Faculty of Mechanical Engineering  
Technion – Israel Institute of Technology  
Haifa, 32000. Israel

Tel.: (+972) 4-829 3366

Fax: (+972) 4-829 5711

Email: [yossifon@technion.ac.il](mailto:yossifon@technion.ac.il)

Web site: [http://meeng.technion.ac.il/Gilad\\_Yossifon.htm](http://meeng.technion.ac.il/Gilad_Yossifon.htm) (Faculty)  
<http://MNFL.technion.ac.il> (Lab)

**ACADEMIC DEGREES**

2008	Ph.D., Tel-Aviv University, Israel
2003	M.Sc. <i>with distinction</i> Electrical Engineering, Tel-Aviv University, Israel
1999	M.Sc. Mechanical Engineering, Technion – Israel Institute of Technology, Israel
1994	B.Sc. <i>Summa Cum Laude</i> Mechanical Engineering, Technion – Israel Institute of Technology, Israel

**ACADEMIC APPOINTMENTS**

11/2015	Associate Professor, Faculty of Mechanical Engineering, Technion – I.I.T., Haifa, Israel
2012- 11/2015	Assistant Professor, Faculty of Mechanical Engineering, Technion – I.I.T., Haifa, Israel
2009-2012	Senior Lecturer <sup>†</sup> , Faculty of Mechanical Engineering, Technion – I.I.T., Haifa, Israel
2007-2009	Post-Doctoral Research Associate, Chemical and Biomolecular Engineering Department, University of Notre Dame, Indiana, USA

<sup>†</sup> Position title was changed from “Senior Lecturer” to “Assistant Professor” during 2012

## RESEARCH INTERESTS

Electrohydrodynamics and Electrokinetics  
Ion transport through permselective media  
Non-linear electrokinetics in micro- and nano-fluidics  
Induced-charge-electro-kinetics  
Electrokinetics based Lab-on-a-chip devices  
Micro-heat exchangers

## TEACHING EXPERIENCE

### Design of new courses

036076                      Electrokinetics in Nano- and Micro-Fluidics (graduate level)

### Lecturer in the courses

034013                      Fluid Mechanics 1 (undergraduate)

034041                      Heat Transfer (undergraduate)

## TECHNION ACTIVITIES

2013 to date    Member, Norman and Helen Asher Space Research Institute (ASRI)  
2012 to date    Member, Stephen and Nancy Grand Water Research Institute (GWRI)  
2011 to date    Member, Center for Security Science and Technology (CSST)  
2010 to date    Member, Russell Berrie Nanotechnology Institute (RBNI)  
2010 to date    Member, Grand Technion Energy Program (GTEP)  
2010 to date    Member, Micro Nano Fabrication Unit (MNFU)

## DEPARTMENTAL ACTIVITIES

12/2015            Vice-Dean for Student Affairs  
2009 to 12/15    Head of the “Brakim” honor program (accelerated B.Sc. and M.Sc. **thesis track** in 9 semesters) within the Faculty of Mechanical Engineering  
2009 to date    Member in the undergraduate and graduate studies committee as head of the “Brakim” honor program  
2009 to date    Head and founder of the Micro- and Nano-Fluidics Laboratory (MNFL), Mechanical Engineering, Technion – I.I.T.

## **PUBLIC PROFESSIONAL ACTIVITIES**

### **Reviewer for Journals**

Physical Review Letters, Physical Review E, Journal of Fluid mechanics, Biomicrofluidics, Experiments in Fluids, Physics of Fluids, Microfluidics and Nanofluidics, The Journal of Chemical Physics, Nanoscale, Biomedical Microdevices

## **MEMBERSHIP IN PROFESSIONAL SOCIETIES**

APS American Physical Society

IPS Israel Physical Society

AES American Electrophoresis Society

AIChE American Institute of Chemical Engineers

ISTAM The Israel Society for Theoretical and Applied Mechanics

## **FELLOWSHIPS, AWARDS AND HONORS**

2014 David (Dudi) Ben-Aharon Research Prize

2014 Excellence in teaching “Heat Transfer” course – winter semester

2009, 2010 Horev Fellow in the Leaders in Science and Technology Program

2006 Intel’s award for excellence in Doctoral studies

2006 Wolf Foundation’s award for excellence in Doctoral studies

1999 Student best paper award, 50th Aeroballistic Range Association (ARA) meeting, California

## **GRADUATE STUDENTS**

(Primary supervisor and only supervisor, unless stated otherwise)

### **Completed theses [6]**

#### M.Sc. (5):

1. Lichen Rozitsky, 2013, “Dielectrophoretic Characterization and Manipulation of Cells and Micro-/Nano-Particles”, Primary supervisor: Asst. Prof. Gilad Yossifon, Co-supervisor: Assoc. Prof. Shulamit Levenberg, [J19]. RBNI Nanotechnology program. Summa Cum Laude.

2. Alex Lellouche, 2013, “Nonlinear Electrokinetic Phenomena in Asymmetric Nanochannels”. RBNI Nanotechnology program. Cum Laude.

3. Matan Zahavi, 2015, “Nonlinear induced-Charge-Electro-Osmotic Flow around a Microchannel Corner”, [J26, J37]. Currently a R&D Engineer, Nano-Retina.

4. Dana Ben Bassat, 2015, “The Influence of Flow Intensity and Field Frequency on Continuous-Flow Dielectrophoretic Trapping”, [J24, J27]. *HP Indigo award* (2015). Cum Laude. Currently an application Engineer in McKESSON.

5. Anatoly Parahovnik, 2010-2015, "Micro-fluidic based Heat Exchanger" [C15, J38]. Currently a R&D engineer at RAFAEL.

Ph.D (1):

1. Yoav Green, 2011-2015, "Interchannel Communication of Nanoslot Arrays Due to Space Charge Polarization and Electro-Convection Instability" [J17, J21, J23, J28, J29, J36, C13]. *Rieger foundation fellowship* (2014), *RBNI scholarship for outstanding graduate students* (2014, 2015), *GWRI fellowship* (2014), *Best COMSOL student project* (2014), *Best student talk award* Israel Electro-Chemistry Conference (2014, 2015).

**Theses in progress [5]**

(The years indicate the starting year and expected year of graduation)

M.Sc. (2):

1. Uri Liel, 2012-2015, "The effect of microchamber geometry on the current-voltage response of a nanoslot system" [J22, J30]. Currently a Technion research assistant.
2. Leonid Fraiman, 2011-2016, "Numerical Analysis of Microfluidic based Heat Exchanger" [J37]. Currently a R&D engineer at RAFAEL.

Ph.D. (3):

2. Neta Leibowitz, 2012-2018, "Electrochemical characterization of microchannel-nanochannel undulated interface fluidic devices" [J30, J31]. *Direct Ph.D. track (7/2014)*, *Rothschild- Caesarea fellowship* (2014). Currently a Technion research assistant.
3. Alicia Boymelgreen, 2012-2016, "Symmetry breaking in non-linear electrokinetic colloidal transport at the micro/nanoscale", Primary supervisor: Asst. Prof. Gilad Yossifon, Co-supervisor: Prof. Touvia Miloh [J20, J27, J32, J34]. *RBNI scholarship for outstanding graduate students* (2014, 2015), *Gutwirth fellowship* (2015). Currently a Technion research assistant.
4. Leon Rosentsvit, 2012-2016, "Electrokinetic Concentration of Nanoparticles in Micro/Nanofluidic Devices with Integrated Electrodes" [J35]. *GWRI fellowship* (2014). Currently a Technion research assistant.

**SUPERVISION OF RESEARCH ASSOCIATES**

**Post-doctoral research associates (2)**

1. Dr. Sinwook Park (Ph.D., School of Electrical and Computer Engineering, Ajou University, Korea, 2009), Mar. 2012 to date [J18, J20, J24, J28, J30, J33, C14].
2. Dr. Jarrod Schiffbauer (Ph.D., Physics department, West-Virginia University), Feb. 2012 to July 2015 [J16, J18, J22, J25, J30, J31, J35].

## Undergraduate research projects (7)

### Completed projects (6)

1. Benny Tavlovich and Yogev Okrat, 2013, "Streaming current through nanochannels".
2. Shahar Shloush, 2014, "Effect of geometry on concentration polarization in realistic heterogeneous permselective systems", [J23], *REAMIM honor program*.
3. Yotam Hass, 2014, "Inlet Port Analysis for Microfluidic Heat Exchanger", *REAMIM honor program*.
4. Yair Bergner, 2015, "Microparticle-nanoslot electrokinetic interaction".
5. Yaron Edri, 2015, "Electrical characterization of the response of a micro-nano-fluidic system - theory", [J34], *REAMIM honor program, The Norman and Barbara Seiden Family Prize 2015*.
6. Ran Eshel, 2015, "Electrical characterization of the response of a micro-nano-fluidic system - experiment", [J39], *The Norman and Barbara Seiden Family Prize 2015*.

### Projects in progress (1)

1. Tov Bali, "Frequency dispersion in dipolophoresis of metallodielectric Janus spheres". *REAMIM honor program*.

## RESEARCH GRANTS

(Primary investigator and only investigator, unless stated otherwise)

(competitive grants according to VATAT are underlined)

- |           |  |
|-----------|--|
| 2015      | <i>RAFAEL</i> , 80,000 ILS, "Micro-Fluidic Based Joule-Thomson Cryocooler"   |
| 2015-2016 | <i>NOFAR</i> , 500,000 ILS, "A novel microfluidic flowmeter for drug delivery applications"  |
| 2014      | <i>FLEXTRONICS - ISRAEL</i> , 60,000 ILS, "Flow sensor for Insulin delivery"   |
| 2013-2016 | <u><i>Binational Agricultural Research and Development Fund (BARD)</i></u> , \$315,000, PI: Dr. Tamar Lotan, co-PI: Prof. Jerri Bartholomew, collaborating: Prof. Uri Shavit, collaborating: Dr. Gilad Yossifon, "A novel approach for preventing Myxozoan infection in fish: Control of polar capsule activation" |
| 2011-2014 | <u><i>MOST TASHTYOT</i></u> , 1,800,000 ILS, with Prof. Shulamit Levenberg and Prof. Dan Peer, "A microfluidic System-On-a-Chip platform for parallel single cell screening and analysis based on dielectrophoresis, nanobeads and nanoliter droplets"   |
| 2011-2014 | <i>RAFAEL</i> , 470,000 ILS, "MEMS Joule-Thomson Micro-Cooler"   |
| 2010-2014 | <u><i>Binational Science Foundation (BSF)</i></u> , \$ 192,000, with Prof. Hsueh-Chia Chang and Prof. Touvia Miloh, "Dielectrophoresis of Nanocolloids: A New Technique for Capturing and Detecting Biomolecules and Bioparticles"   |

- 2010-2014     *Israel Science Foundation (ISF)*, \$ 230,000, "Interchannel Communication of Nanoslot Arrays Due to Space Charge Polarization and Electro-Convection Instability"
- 2010           *Israel Science Foundation (ISF)* - Lab Equipment, \$ 195,000

### **Internal Technion sources**

- 2014           *David Dodi Ben-Aharon Research Prize*, \$ 3000
- 2013           *Technion - Norman and Helen Asher Space Research Institute (ASRI)*, \$ 10,000, "Study of fluid flow and heat transfer within a micro-heat exchanger based on MEMS technology"
- 2013           *Technion - Grand Water Research Institute (GWRI)*, \$ 20,000, "Desalination on a chip platform"
- 2012           *Technion – University Haifa collaborative research*, \$ 10,000, with Dr. Tamar Lotan "A microfluidic platform for studying capsule's thread release and ejection dynamics"
- 2012           *Technion - Grand Water Research Institute (GWRI)*, \$ 5000, for Lab equipment.
- 2012           *Eliyahu Pen Research Fund*, \$ 4500
- 2012-2015     *Technion Funds for Security Research (CSST)*, 380,000 ILS, "Study and optimization of a miniaturized heat exchanger based on MEMS technology for Joule-Thomson Micro-Cooler"
- 2010           *NEVET (RBNI)*, \$ 40,000, with Prof. Shulamit Levenberg, "Using Dielectrophoresis and Nanobeads to Distinguish Stem Cells and their Differentiated Progeny"
- 2009, 2010     *Leaders in Science and Technology*, \$ 10000

### **PUBLICATIONS**

#### **Theses/Reports**

- M.Sc.           Thesis topic: "Penetration of a rigid projectile into a metal multi-layer target and characterization of the debris cloud", Technion, 1999. Supervisors: Prof. A. Yarin and Prof. M. Rubin.
- M.Sc.           Project topic: "Immobilized Cell-Microfluidics Interaction", Tel-Aviv University, 2003. Supervisor: Prof. Y. Shacham-Diamand.
- Ph.D.           Thesis topic: "Nonlinear electrokinetic phenomena in micro- and nano-fluidics", Tel-Aviv University, 2007. Supervisors: Prof. T. Miloh and Prof. I. Frankel.

## **Refereed papers in professional journals**

(Names of students/postdocs are underlined>

### **Published papers**

- J1. G. Yossifon, M. B. Rubin, and A. L. Yarin, Penetration of a Rigid Projectile into a Finite Thickness Elastic-Plastic Target – Comparison between Theory and Numerical Computations, *Int. J. Impact Engng.* 25: 265-290 (2001).
- J2. G. Yossifon, A. L. Yarin, and M. B. Rubin, Penetration of a Rigid Projectile into a Multi-Layered Target: Theory and Numerical Computations, *Int. J. Engng. Sci.* 40:1381-1401 (2002).
- J3. G. Yossifon and A. L. Yarin, Behind-the-armor Debris Analysis, *Int. J. Impact Engng.* 27:807-835 (2002).
- J4. G. Yossifon, I. Frankel and T. Miloh, On electro-osmotic flows through microchannel junctions, *Physics of Fluids* 18:117108-1-9 (2006).
- J5. G. Yossifon, I. Frankel and T. Miloh, Symmetry breaking in induced-charge electro-osmosis over polarizable spheroids, *Physics of Fluids* 19: 068105-1-4 (2007).
- J6. G. Yossifon and H. -C. Chang, Selection of Nonequilibrium Overlimiting Currents: Universal Depletion Layer Formation Dynamics and Vortex Instability, *Phys. Rev. Lett.* 101:254501-1-4 (2008).
- J7. G. Yossifon, I. Frankel and T. Miloh, Macro-scale description of transient electro-kinetic phenomena over polarizable dielectric solids, *J. Fluid Mech.* 620: 241-262 (2009).
- J8. G. Yossifon, P. Mushenheim, Y. -C. Chang and H. -C. Chang, Nonlinear Current-Voltage Characteristics of Nanochannels, *Phys. Rev. E* 79:046305-1-9 (2009).
- J9. Y. Eckstein, G. Yossifon, A. Seifert and T. Miloh, Nonlinear electrokinetic phenomena around nearly insulated sharp tips in microflows, *J. Colloid Interface Sci.* 338:243-249 (2009).
- J10. G. Yossifon, Y. -C. Chang and H. -C. Chang, Rectification, Gating Voltage, and Interchannel Communication of Nanoslot Arrays due to Asymmetric Entrance Space Charge Polarization, *Phys. Rev. Lett.* 103:154502-1-4 (2009).
- J11. G. Yossifon, P. Mushenheim, Y. -C. Chang, and H. -C. Chang, Eliminating the Limiting-Current Phenomenon by Geometric Field Focusing into Nanopores and Nanoslots, *Phys. Rev. E* 81:046301-1-13 (2010).
- J12. G. Yossifon and H. -C. Chang, Changing Nanoslot Ion Flux with a Dynamic Nanocolloid Ion-Selective Filter: Secondary Overlimiting Currents due to Nanocolloid-Nanoslot Interaction, *Phys. Rev. E* 81:066317-1-6 (2010).
- J13. G. Yossifon, P. Mushenheim and H. -C. Chang, Controlling nanoslot overlimiting current with the depth of a connecting microchamber, *Euro. Phys. Lett.* 90:64004-1-6 (2010).
- J14. F. Xie, Y. Wang, W. Wang, Z. Li, G. Yossifon and H. -C. Chang, Preparation of Rhombus-Shaped Micro/Nanofluidic Channels with Dimensions Ranging from Hundred Nanometers to Several Micrometers, *J. Nanoscience and Nanotechnology* 10:7277-7281 (2010).

- J15. I. Frankel, G. Yossifon, and T. Miloh, Dipolophoresis of dielectric spheroids under asymmetric fields, *Physics of Fluids* 24:012004-1-12 (2012).
- J16. J. Schiffbauer and G. Yossifon, Role of Electro-osmosis in the Impedance Response of Microchannel-Nanochannel Interfaces, *Phys. Rev. E* 86:056309-1-9 (2012).
- J17. Y. Green and G. Yossifon, Dynamical Trapping of Colloids at the Stagnation Points of Electro-Osmotic Vortices of the Second Kind, *Phys. Rev. E* 87:033005-1-9 (2013).
- J18. J. Schiffbauer, S. Park and G. Yossifon, Electrical Impedance Spectroscopy of Microchannel-Nanochannel Interface Devices, *Phys. Rev. Lett.* 110:204504-1-5 (2013).
- J19. L. Rozitsky, A. Fine, D. Dado, S. Nussbaum-Ben-Shaul, S. Levenberg and G. Yossifon, Quantifying continuous-flow dielectrophoretic trapping of cells and micro-particles on micro-electrode array, *Biomed Microdevices* 15:859–865 (2013).
- J20. A. Boymelgreen, G. Yossifon, S. Park and T. Miloh, Spinning Janus doublets driven in uniform ac electric fields, *Phys. Rev. E* 89:011003(R)-1-5 (2014).
- J21. Y. Green and G. Yossifon, Effects of three-dimensional geometric field focusing on concentration polarization in a heterogeneous permselective system, *Phys. Rev. E* 89:013024-1-11 (2014).
- J22. J. Schiffbauer, U. Liel, and G. Yossifon, Concentration dependence of nanochannel impedance and the determination of surface charge, *Phys. Rev. E* 89:033017-1-9 (2014).
- J23. Y. Green, S. Shloush, and G. Yossifon, Effect of geometry on concentration polarization in realistic heterogeneous permselective systems, *Phys. Rev. E* 89:043015-1-9 (2014).
- J24. S. Park, D. Ben Bassat and G. Yossifon, Individually addressable multi-chamber electroporation platform with dielectrophoresis and alternating-current-electro-osmosis assisted cell positioning, *Biomicrofluidics* 8:024117-1-15 (2014).
- J25. J. Schiffbauer and G. Yossifon, Influence of electric-double-layer structure on the transient response of nanochannels, *Phys. Rev. E* 89:053015-1-8 (2014).
- J26. M. Zehavi and G. Yossifon, Particle Dynamics and Rapid Trapping in Electro-Osmotic Flow Around a Sharp Microchannel Corner, *Physics of Fluids* 26:082002-1-13 (2014).
- J27. D. Ben-Bassat, A. Boymelgreen and G. Yossifon, The Influence of Flow Intensity and Field Frequency on Continuous-Flow Dielectrophoretic Trapping, *J. Colloid Interface Science* 442:154–161 (2015).
- J28. Y. Green, S. Park and G. Yossifon, Bridging the gap between an isolated nanochannel and a communicating multipore heterogeneous membrane, *Phys. Rev. E* 91:011002(R)-1-6 (2015).
- J29. Y. Green and G. Yossifon, Time-dependent ion transport in heterogeneous permselective systems, *Phys. Rev. E* 91:063001-1-11 (2015).
- J30. J. Schiffbauer, U. Liel, N. Leibowitz, S. Park and G. Yossifon, Probing space charge and resolving overlimiting current mechanisms at the microchannel-nanochannel interface, *Phys. Rev. E* 92:013001-1-6 (2015).
- J31. J. Schiffbauer, N. Leibowitz and G. Yossifon, Extended space charge near nonideally selective membranes and nanochannels, *Phys. Rev. E* 92:013002-1-8 (2015).



J32. A. Boymelgreen and G. Yossifon, Observing Electrokinetic Janus Particle-Channel Wall Interaction Using Micro-Particle-Image-Velocimetry, *Langmuir* 31:8243–8250 (2015).

J33. T. Ben-Arye, S. Park, J. Shemesh, D. Peer, S. Levenberg and G. Yossifon, Dielectrophoretic Characterization of Cells in a Stationary Nanoliter Droplet Array with Generated Chemical Gradients, *Biomed Microdevices* 17:91 (2015).

J34. Y. Green, Y. Edri, and G. Yossifon, Asymmetry-induced electric current rectification in permselective systems, *Phys. Rev. E* 92:033018-1-12 (2015).

J35. L. Rosentsvit, W. Wang, J. Schiffbauer, H.-C. Chang, and G. Yossifon, Ion Current Rectification in Funnel-Shaped Nanochannels: Hysteresis and Inversion Effects, *The Journal of Chemical Physics* 143:224706-1-5 (2015).

J36. Y. Yan , J. Schiffbauer , G. Yossifon , H.-C. Chang, Universal Low-Frequency Asymptotes of Dynamic Conic Nanopore Rectification: An Ionic Nanofluidic Inductor, *The Journal of Chemical Physics* 143: 224705-1-4 (2015).

### Submitted papers

J37. M. Zehavi, A. Boymelgreen and G. Yossifon, Competition between Induced-Charge Electro-Osmosis and Electro-Thermal Effects around a Weakly-Polarizable Microchannel Corner, *Phys. Rev. Appl.* [arXiv:1412.2055](https://arxiv.org/abs/1412.2055).

J38. A. Parahovnik, L. Fraiman, I. Rosinsky, G. Yossifon, Temperature and high pressure effects on choked flow in the microchannel, *Physics of Fluids*.

J39. Y. Green, R. Eshel, S. Park and G. Yossifon, On the interplay between nanochannel and microchannel resistances, *Phys. Rev. Lett.*

J40. A. Parahovnik , N. Tzabar, Y. Haas, L. Parahovnik, I. Rosinsky, G. Yossifon, Evaluation of axial conduction effects and heat losses in counter-flow microscale heat exchangers, *International Journal of Heat and Mass Transfer*.

### Review papers

#### Published papers

J41. H. -C. Chang and G. Yossifon, Understanding Electrokinetics at the Nanoscale: A Perspective, *Biomicrofluidics* 3:012001-1-15 (2009).

J42. H. -C. Chang, G. Yossifon and E. A. Demekhin, Nanoscale Electrokinetics and Microvortices: How Microhydrodynamics affects Nanofluidic Ion Flux, *Annual Review of Fluid Mechanics* 44:401-426 (2012).

### Refereed Papers in Conference Proceedings

(Names of students/postdocs are underlined, presenter is marked with †)

C1. †E. Hirsch and G. Yossifon, One-Streamline Model Application to Shaped-Charge Jet Formation and Target Penetration, 17<sup>th</sup> Intl. Symp. on Ballistics, 2:175-184, Mar. 23-27, 1998, Midrand, South Africa.

- C2. U. Rokni, N. Sela, S. Golde and †G. Yossifon, A Study of the Cratering Process by Particulated Jets and its Implication on the Prediction of Jet Penetration, *17<sup>th</sup> Intl. Symp. on Ballistics*, 2:325-332, Mar. 23-27, 1998, Midrand, South Africa.
- C3. †M. Mayseless, G. Yossifon, Behind Armor Debris: Fragments Distribution, *18<sup>th</sup> Intl. Symp. on Ballistics*, 2:1355-1362, Nov. 15-19, 1999, San-Antonio, Texas, USA.
- C4. †E. Hirsch, S. Chocron and G. Yossifon, The Generalized Taylor Test and Strength-Flow Coupling in Ductile Metals, *18<sup>th</sup> Intl. Symp. on Ballistics*, 2:924-930, Nov. 15-19, 1999, San-Antonio, Texas, USA.
- C5. M. Ravid, †G. Yossifon, S. R. Bodner, R. Keren, Characterization of the Fragmentation Exit Failure Mode and Fragment Distribution upon Perforation of Metallic Targets, *20<sup>th</sup> Intl. Symp. on Ballistics*, 2:910-916, Sep. 23-27, 2002, Orlando, Florida, USA.
- C6. †M. Rabinovich, G. Tivon, G. Yossifon, D. Touati, S. Peles and M. Arad, The influence of the front layer of a reactive armor on long rod penetrator disruption, *23<sup>rd</sup> Intl. Symp. on Ballistics*, 2:1355-1363, Apr. 17-20, 2007, Tarragona, Spain.
- C7. †S. Chanukaev, G. Yossifon, M. Elashvili and I. Levi, On the role of intermediate layer location in prevention of sympathetic detonation between reactive armor sandwiches, *23<sup>rd</sup> Intl. Symp. on Ballistics*, 279-286, Apr. 17-20, 2007, Tarragona, Spain.
- C8. †G. Yossifon, I. Frankel and T. Miloh, Occurrence of vortices in electro-osmotic micro-channel flows, *47<sup>th</sup> Israel Annual Conference on Aerospace Sciences*, 553-560, Feb. 21-22, 2007, Tel Aviv-Haifa, Israel.
- C9. †Y. Eckstein, A. Seifert, G. Yossifon and T. Miloh, Occurrence of Vortices in Electro-Osmotic Micro-Channel Flows, *Proceedings of the 1<sup>st</sup> European Conference on Microfluidics (Microfluidics 2008)*, 66-74, Dec. 10-12, 2008, Bologna, Italy.
- C10. †G. Yossifon, S. Basuray, P. Mushenheim, T. Hagen and H. -C. Chang, A Combined Nanocolloid–Nanochannel Platform for Sensitive Biomolecular Detection, *14<sup>th</sup> International Conference on Miniaturized Systems for Chemistry and Life Sciences, MicroTAS 2010*, 470-472, Oct. 3-7, 2010, Groningen, Netherlands.
- C11. F. Xie, Y. S. Wang, W. Wang<sup>†</sup>, W. G. Wu, Z. H. Li, G. Yossifon, and H. -C. Chang, An experimental study on the side-opening filling process at the interface between microchannels with different widths, *2<sup>nd</sup> International Conference of the Chinese Society of Micro-Nano Technology and the 12<sup>th</sup> Annual Conference of the Chinese Society of Micro-Nano Technology*, 293-296, Oct. 22-24, 2010, Xi'an, China.
- C12. G. Yossifon, †I. Frankel, T. Miloh, Dipolophoretic rotation of dielectric spheroids, *Proceedings of the 2<sup>nd</sup> European Conference on Microfluidics (Microfluidics 2010)*, 276:1-7, Dec. 8-10, 2010, Toulouse, France.
- C13. Y. Green and †G. Yossifon, Electrokinetic Interaction of Colloids with a Narrow Nanoslot, *Proceedings of the 3<sup>rd</sup> European Conference on Microfluidics (Microfluidics 2012)*, 239:1-5, Dec. 3-5, 2012, Heidelberg, Germany.
- C14. †S. Park and G. Yossifon, Individually addressable multi-chamber electroporation platform with dielectrophoresis-assisted cell positioning, *Proceedings of the IEEE 27<sup>th</sup> International Conference on Micro Electro Mechanical Systems (MEMS)*, 268-271, Jan. 26-30, 2014, San-Francisco, CA, USA.
- C15. †A. Parahovnik, N. Tzabar and G. Yossifon, Experimental Apparatus for the Study of micro Heat Exchangers with Inlet Temperatures between -200 and 200 °C and elevated

pressures, 4th Micro and Nano Flows Conference, Sep. 1-7, 2014, London, United Kingdom.

### **Patents**

P1. H. -C. Chang, P. Mushenheim S. Basuray, G. Yossifon, and S. Senapati, Microchamber Electrochemical Cell having a Nanoslot, *US 8,969,007*, Mar. 3, 2015.

P2. G. Yossifon and M. Zehavi, Concentration-Polarization based Flowmeter, Application No. 239691, June 28, 2015.

### **CONFERENCES**

(Names of students/postdocs are underlined, speaker is marked with †)

### **Invited talks**

I1. G. Yossifon, Controlling the Nanochannel/Nanoporous Membrane Overlimiting Current, *Electrokinetic Phenomena in Nano-colloids and Nano-fluidics workshop*, Dec. 2010, Technion, Haifa, Israel.

I2. G. Yossifon, *Advances in Microfluidics and Nanofluidics conference (AMN)*, May 21-23, 2014, Academia Sinica, Taiwan.

I3. G. Yossifon, *Advances in Microfluidics and Nanofluidics conference (AMN)*, August 19-21, 2015, Peking University, China.

I4. G. Yossifon, *Emerging Materials for Energy and Environment workshop*, Feb. 28-March 1, 2016, Hong Kong Polytechnic University, Hong-Kong.

### **Abstracts of Lectures**

L1. G. Yossifon, Non-linear electro-kinetic flow through micro-channel junctions, *TAU research scholars meeting*, 2006, Tel Aviv, Israel.

L2. †G. Yossifon, I. Frankel and T. Miloh, Occurrence of vortices in electro-osmotic micro- and nano-channel flows, *2<sup>nd</sup> International Conference on Transport Phenomena in Micro and Nanodevices*, 2006, Barga, Italy.

L3. †G. Yossifon, I. Frankel and T. Miloh, Induced-Charge Electro-Osmosis Over Non-Ideally Polarizable Surfaces, *59<sup>th</sup> Annual DFD Meeting of the American Physical Society*, Nov. 19-21, 2006, Tampa, Florida, USA.

L4. †G. Yossifon, I. Frankel and T. Miloh, On electro-osmotic flows through micro-channel junctions, *ISRAMEMS*, 2006, Tel Aviv, Israel.

L5. †G. Yossifon and H. -C. Chang, DNA/Protein Concentration and Identification by Nano-Channel Electrokinetics, *APS March Meeting*, 2008, New Orleans, Louisiana, USA.

L6. †G. Yossifon and H.-C. Chang, Dynamic Electrokinetic Similarities across Nano, Micro and Macro Scales: Micro-nano Channel Junctions and Macroscopic Ion-selective Membranes, *8<sup>th</sup> International Electrokinetics Conference (ELKIN)*, May 18-23, 2008, Santa Fe, New Mexico, USA.

L7. †G. Yossifon, I. Frankel and T. Miloh, Relaxation in induced-charge electroosmotic flows, *8<sup>th</sup> International Electrokinetics Conference (ELKIN)*, May 18-23, 2008, Santa Fe, New Mexico, USA.

L8. †G. Yossifon and H. -C. Chang, Selection of Non-Equilibrium Over-Limiting Currents: Universal Depletion Layer Formation Dynamics and Vortex Instability, *AIChE Annual Meeting*, Nov. 2008, Philadelphia, PA, USA.

L9. †G. Yossifon, S. Senapati, D. S. Hou and H. -C. Chang, Eliminating Electrokinetic Cross-Talk in Nano-Channel Arrays for Biomolecular Detection, *AIChE Annual Meeting*, Nov. 2008, Philadelphia, PA, USA.

L10. †G. Yossifon and H. -C. Chang, Nano-Channel Arrays for Biomolecular Detection, *61<sup>st</sup> Annual DFD Meeting of the American Physical Society*, Nov. 2008, San Antonio, Texas, USA.

L11. †G. Yossifon and H. -C. Chang, Selection of Non-Equilibrium Over-Limiting Currents: Universal Depletion Layer Formation Dynamics and Vortex Instability, *61<sup>st</sup> Annual DFD Meeting of the American Physical Society*, Nov. 2008, San Antonio, Texas, USA.

L12. †G. Yossifon and H. -C. Chang, Nonlinear I-V Characteristics of Nano-Pores: Depletion Layer Pattern Formation and Vortex Instability, *APS March Meeting*, March 2009, Pittsburgh, PA, USA.

L13. †G. Yossifon and H. -C. Chang, Rectification, Gating Voltage and Interchannel Communication of Nanoslot Arrays Due to Asymmetric Entrance Space Charge Polarization, *APS March Meeting*, March 2009, Pittsburgh, PA, USA.

L14. †G. Yossifon, Y. C. Chang, S. Basuray, P. Mushenheim, L. Floccare and H. -C. Chang, Understanding Nanocolloid – Nanochannel Interaction for Biomolecular Detection, *13<sup>th</sup> IACIS International Conference on Surface and Colloid Science and the 83<sup>rd</sup> ACS Colloid & Surface Science Symposium*, Jun. 2009, New York, NY, USA.

L15. †G. Yossifon, P. Mushenheim and H. -C. Chang, Probing Nanocolloids–Nanochannel Electrokinetic Interaction by Impedance Spectroscopy: A New Biosensing Platform, *AIChE Annual Meeting*, Nov. 2009, Nashville, TN, USA.

L16. G. Yossifon, Controlling the Nanoslot Overlimiting Current, *9<sup>th</sup> International Electrokinetics Conference (ELKIN)*, Jun. 6-10, 2010, Turku, Finland.

L17. G. Yossifon, Understanding Electrokinetics at the Nanoscale, *The 31<sup>st</sup> Israeli Conference on Mechanical Engineering (ICME)*, Jun. 2010, Tel Aviv, Israel.

L18. †S. Basuray, P. Mushenheim, T. Hagan, S. Senapati, G. Yossifon and H. -C. Chang, Real-Time PCR Quantification by Asymmetric Electrophoresis and Warburg Impedance Across Nanoslots, *AIChE Annual Meeting*, Nov. 2010, Salt Lake City, UT, USA.

L19. †H. -C. Chang and G. Yossifon, Electrokinetic Vortices Due to Anomalous Polarization at a Nanoslot Entrance, *AIChE Annual Meeting*, Nov. 2010, Salt Lake City, UT, USA.

L20. †G. Yossifon and H. -C. Chang, Electrokinetics of Nanochannels: A New Paradigm for Bio-molecular Detection and Ion Permselective Devices, *The 14<sup>th</sup> Annual Meeting of the Israel Analytical Chemistry Society, ISRANALYTICA 2011*, 2011, Tel Aviv, Israel.

L21. Y. Green and †G. Yossifon, Nano-Colloid - Nano-Channel Electrokinetic Interactions, *ICREA Symposium on “Nanofluidics, Colloids and Membranes”*, July 16-18, 2012, Barcelona, Spain.

L22. <sup>†</sup>J. Schiffbauer and G. Yossifon, Role of Electro-Osmosis in Microchannel-Nanochannel Impedance Response, *AIChE Annual Meeting*, Nov. 2012, Pittsburgh, PA, USA.

L23. Y. Green and <sup>†</sup>G. Yossifon, Understanding Nanocolloid-Nanochannel Electrokinetic Interaction, *The 32st Israeli Conference on Mechanical Engineering (ICME)*, Oct. 2012, Tel Aviv, Israel.

L24. <sup>†</sup>J. Schiffbauer and G. Yossifon Transient response at the microchannel-nanochannel interface: chronopotentiometry, chronoamperometry, and electrochemical impedance, *65<sup>th</sup> Annual DFD Meeting of the American Physical Society*, Nov. 18-20, 2012, San Diego, California, USA.

L25. G. Yossifon and <sup>†</sup>Y. Green, The Effect of Electrophoresis and Electroosmosis on Colloid Dynamics at a Micro-Nano-Channel Junction, *65<sup>th</sup> Annual DFD Meeting of the American Physical Society*, Nov. 18-20, 2012, San Diego, California, USA.

L26. Y. Green and G. Yossifon The Effects of Dielectrophoresis on Nano-Colloidal Dynamics at a Microchamber-Narrow Nanoslot Interface, *65<sup>th</sup> Annual DFD Meeting of the American Physical Society*, Nov. 18-20, 2012, San Diego, California, USA.

L27. <sup>†</sup>J. Schiffbauer, S. Park and G. Yossifon, Transient Response of the Micro-Nanochannel Interface: Effects of Fluid-Flow, Space Charge, and Non-Ideal Selectivity, *Advances in Microfluidics and Nanofluidics (AMN)*, May 24-26, 2013, Notre Dame, Indiana, USA.

L28. Y. Green and <sup>†</sup>G. Yossifon, Dynamical Trapping Of Colloids At the Stagnation Points of Electro-Osmotic Vortices of the Second Kind, *Advances in Microfluidics and Nanofluidics (AMN)*, May 24-26, 2013, Notre Dame, Indiana, USA.

L29. <sup>†</sup>A. Boymelgreen, G. Yossifon and T. Miloh, Stability of Metallodielectric Janus Spheres in AC Electric Fields, *Advances in Microfluidics and Nanofluidics (AMN)*, May 2013, Notre Dame, Indiana, USA.

L30. <sup>†</sup>A. Boymelgreen, G. Yossifon and T. Miloh, An electrokinetically driven Janus micromotor: stability and Rotation, *5<sup>th</sup> Int. Symp. on Bifurcations and Instabilities in Fluid Dynamics (BIFD)*, July 8-11, 2013, Technion, Haifa, Israel.

L31. Y. Green and G. Yossifon, Dynamics of colloids and hydrodynamic vortices due to competition between various electrokinetic modes, *5<sup>th</sup> Int. Symp. on Bifurcations and Instabilities in Fluid Dynamics (BIFD)*, July 8-11, 2013, Technion, Haifa, Israel.

L32. <sup>†</sup>J. Schiffbauer, N. Leibowitz, U. Liel, S. Park and G. Yossifon, Transient electrical response at the microchannel-nanochannel interface near the overlimiting transition, *5<sup>th</sup> Int. Symp. on Bifurcations and Instabilities in Fluid Dynamics (BIFD)*, July 8-11, 2013, Technion, Haifa, Israel.

L33. J. Schiffbauer, N. Leibowitz, U. Liel, S. Park and <sup>†</sup>G. Yossifon, Geometric modulation of electrokinetic instability in micro-nanochannel interface devices, *5<sup>th</sup> Int. Symp. on Bifurcations and Instabilities in Fluid Dynamics (BIFD)*, July 8-11, 2013, Technion, Haifa, Israel.

L34. <sup>†</sup>A. Boymelgreen, G. Yossifon and T. Miloh, An electrokinetically driven Janus micromotor: stability and rotation, *SES 50th Annual Technical Meeting and ASME-AMD Annual Summer Meeting*, July 2013, Brown University, USA.

- L35. <sup>†</sup>A. Boymelgreen, G. Yossifon and T. Miloh, Frequency dispersion in dipolophoresis of metallodielectric Janus spheres, *66<sup>th</sup> Annual DFD Meeting of the American Physical Society*, Nov. 2013, Pittsburgh, Pennsylvania, USA.
- L36. <sup>†</sup>J. Schiffbauer, S. Park and G. Yossifon, Probing electrokinetics in microchannels and nanochannels with electrochemical measurements, *66<sup>th</sup> Annual DFD Meeting of the American Physical Society*, Nov. 2013, Pittsburgh, Pennsylvania, USA.
- L37. <sup>†</sup>G. Yossifon, N. Leibowitz, Y. Green, J. Schiffbauer and S. Park, Geometric Modulation of Electro-Osmosis of the Second Kind in Micro-Nanochannel Interface Devices, *66<sup>th</sup> Annual DFD Meeting of the American Physical Society*, Nov. 2013, Pittsburgh, Pennsylvania, USA.
- L38. <sup>†</sup>Y. Green and G. Yossifon, On the Effects of 3D Field Focusing at a Heterogeneous Permselective Surface on Concentration Polarization, *66<sup>th</sup> Annual DFD Meeting of the American Physical Society*, Nov. 2013, Pittsburgh, Pennsylvania, USA.
- L39. <sup>†</sup>Y. Green and G. Yossifon, Electroconvection in Heterogeneous Permselective Systems, *11<sup>th</sup> International Symposium on Electrokinetic Phenomena (ELKIN)*, May 20-23, 2014, Ghent, Belgium.
- L40. <sup>†</sup>J. Schiffbauer, N. Liebowitz, S. Park, and G. Yossifon, Probing space charge and resolving overlimiting current mechanisms at the micro-nanochannel interface using electrochemical impedance spectroscopy, *11<sup>th</sup> International Symposium on Electrokinetic Phenomena (ELKIN)*, May 20-23, 2014, Ghent, Belgium.
- L41. <sup>†</sup>J. Schiffbauer, U. Liel, N. Liebowitz, S. Park and G. Yossifon, Electrical Impedance Characterization of Micro-nanochannel Devices, *The 88<sup>th</sup> ACS Colloid and Surface Science Symposium*, June 22-25, 2014, Philadelphia, PA, USA.
- L42. Y. Green, N. Leibowitz, <sup>†</sup>J. Schiffbauer, S. Park and G. Yossifon, Electroconvection in Heterogeneous Permselective Systems, *The 88<sup>th</sup> ACS Colloid and Surface Science Symposium*, June 22-25, 2014, Philadelphia, PA, USA.
- L43. <sup>†</sup>S. Park and G. Yossifon, On-Demand Control of the Limiting Current in Nano-Slot Devices by Varying the Diffusion Layer Length, *AIChE Annual Meeting*, Nov. 16-21, 2014, Atlanta, GA, USA.
- L44. <sup>†</sup>Y. Green, S. Park and G. Yossifon, Concentration Polarization and Electroconvection in Heterogeneous Perm-selective Systems, *AIChE Annual Meeting*, Nov. 16-21, 2014, Atlanta, GA, USA.
- L45. <sup>†</sup>A. Boymelgreen, M. Zehavi and G. Yossifon, Examining frequency dispersion in non-linear electrokinetic flow using  $\mu$ PIV, *AIChE Annual Meeting*, Nov. 16-21, 2014, Atlanta, GA, USA.
- L46. <sup>†</sup>J. Schiffbauer, S. Park and G. Yossifon, Electrical Impedance Spectroscopy of Colloid-Nanoslot Interactions, *AIChE Annual Meeting*, Nov. 16-21, 2014, Atlanta, GA, USA.
- L47. <sup>†</sup>G. Yossifon , N. Leibowitz , Y. Green , J. Schiffbauer and S. Park, Electrokinetic Colloid and Micro-Vortex Dynamics in Heterogeneous Nano-Slot Devices, *AIChE Annual Meeting*, Nov. 16-21, 2014, Atlanta, GA, USA.
- L48. N. Leibowitz, <sup>†</sup>J. Schiffbauer, U. Liel, S. Park and G. Yossifon, Probing Space Charge and Resolving Overlimiting Current Mechanisms at the Micro-Nanochannel Interface

Using Electrochemical Impedance Spectroscopy, *AIChE Annual Meeting*, Nov. 16-21, 2014, Atlanta, GA, USA.

L49. <sup>†</sup>Y. Green, S. Park and G. Yossifon, Concentration Polarization and Electroconvection in a Nanochannel Array System, *67th Annual DFD Meeting of the American Physical Society*, Nov. 23-25, 2014, San-Francisco, CA, USA.

L50. <sup>†</sup>S. Park and G. Yossifon, Induced- and alternating-current electro-osmotic control of the diffusion layer growth in a microchannel-membrane interface device, *67th Annual DFD Meeting of the American Physical Society*, Nov. 23-25, 2014, San-Francisco, CA, USA.

L51. <sup>†</sup>G. Yossifon , N. Leibowitz , Y. Green , U. Liel, J. Schiffbauer and S. Park, Concentration-Polarization, Electro-Convection and Colloid Dynamics in Microchannel-Nanochannel Interface Devices, *67th Annual DFD Meeting of the American Physical Society*, Nov. 23-25, 2014, San-Francisco, CA, USA.

L52. <sup>†</sup>J. Schiffbauer, M. B. Anderson, A. Mani and G. Yossifon, Electrokinetic Instability, Geometric Confinement, and Overlimiting Conductance, *67th Annual DFD Meeting of the American Physical Society*, Nov. 23-25, 2014, San-Francisco, CA, USA.

L53. <sup>†</sup>A. Boymelgreen, M. Zehavi and G. Yossifon, 3D experimental investigation of the interplay between dielectrophoresis and induced-charge electroosmosis, *67th Annual DFD Meeting of the American Physical Society*, Nov. 23-25, 2014, San-Francisco, CA, USA.

L54. <sup>†</sup>Y. Green, S. Park, and G. Yossifon, Time Transient Effects in Heterogeneous Permselective Systems, *ISTAM*, Dec. 2014, Tel-Aviv, Israel.

L55. <sup>†</sup>Y. Green, S. Park, and G. Yossifon, Concentration Polarization and Electroconvection in Heterogeneous Permselective Systems, *IPS*, Dec. 2014, Beer-Sheva, Israel.

L56. <sup>†</sup>A. Boymelgreen, G. Yossifon and T. Miloh, Spinning Janus doublets driven in uniform AC electric fields, *The Belfer Memorial Symposium on Microswimmers*, Jan. 12, 2015, Technion – I.I.T, Haifa, Israel.

L57. <sup>†</sup>A. Parahovnik, L. Fraiman, I. Rosinsky and G. Yossifon, Study of compressible gas flow in micro-fabricated single channel, *The 33rd Israeli Conference on Mechanical Engineering (ICME)*, March 2-3, 2015, Tel Aviv, Israel.

L58. <sup>†</sup>Y. Green, S. Park and G. Yossifon, Time Transient Effects in Heterogeneous Permselective Systems, *APS March Meeting*, March 2015, San Antonio, Texas, USA.

L59. <sup>†</sup>G. Yossifon, N. Leibowitz, U. Liel, J. Schiffbauer and S. Park, Resolving Overlimiting Current Mechanisms in Micro-Nanochannel Interface Devices, *6<sup>th</sup> Int. Symp. on Bifurcations and Instabilities in Fluid Dynamics (BIFD)*, July 15-17, 2015, ESPCI, Paris, France.

L60. <sup>†</sup>J. Schiffbauer, S. Park, U. Liel and G. Yossifon, Electrical Impedance Spectroscopy of Colloid-Nanoslot Interactions, *6<sup>th</sup> Int. Symp. on Bifurcations and Instabilities in Fluid Dynamics (BIFD)*, July 15-17, 2015, ESPCI, Paris, France.

L61. <sup>†</sup>L. Rosentsvit, W. Wang, J. Schiffbauer, H.-C. Chang and G. Yossifon, Ion Current Rectification Inversion in Funnel-Shaped Nanochannels, *Advances in Microfluidics and Nanofluidics (AMN)*, August 19-21, 2015, Peking University, China.

L62. <sup>†</sup>A. Boymelgreen, T. Balli, G. Yossifon and T. Miloh, Frequency Dependent Mobility of Janus Spheres, *AIChE Annual Meeting*, Nov. 8-13, 2015, Salt Lake City, UT, USA.

L63. †G. Yossifon, N. Leibowitz, U. Liel, J. Schiffbauer and S. Park, Resolving Overlimiting Current Mechanisms in Micro-Nanochannel Interface Devices, *AIChE Annual Meeting*, Nov. 8-13, 2015, Salt Lake City, UT, USA.

L64. †N. Leibowitz, J. Schiffbauer, S. Park and G. Yossifon, Chronopotentiometric response of non-ideal ion selective microchannel-nanochannel interface device, *68th Annual DFD Meeting of the American Physical Society*, Nov. 22-24, 2015, Boston, MA, USA.

L65. †A. Boymelgreen, T. Balli, G. Yossifon and T. Miloh, Frequency dispersion of electrokinetically activated Janus particles, *68th Annual DFD Meeting of the American Physical Society*, Nov. 22-24, 2015, Boston, MA, USA.

L66. †Y. Green, Y. Edri and G. Yossifon, Asymmetry induced electric current rectification in permselective systems, *68th Annual DFD Meeting of the American Physical Society*, Nov. 22-24, 2015, Boston, MA, USA.

L67. G. Yossifon, N. Leibowitz, U. Liel, †J. Schiffbauer and S. Park, Resolving Overlimiting Current Mechanisms in Microchannel-Nanochannel Interface Devices, *68th Annual DFD Meeting of the American Physical Society*, Nov. 22-24, 2015, Boston, MA, USA.

L68. †Y. Green and G. Yossifon, Asymmetry induced electric current rectification in permselective systems, *Israel Electrochemistry Annual Meeting*, Oct. 15, 2015, Israel.

## **Participation in organizing conferences**

### **International conferences**

1. Member, organizing committee, *Electrokinetic Phenomena in Nano-colloids and Nanofluidics workshop*, Dec. 19-23, 2010, Technion – I.I.T, Haifa, Israel.
2. Session chair - “Hydrodynamic dispersion, nano-porous media”, *ICREA Symposium on “Nanofluidics, Colloids & Membranes”*, July 16-18, 2012, Barcelona, Spain.
3. Session co-chair – “Fundamental microfluidic and nanofluidic science, novel fluid and transport phenomena, fluid actuation and particle manipulation mechanisms”, *Advances in Microfluidics and Nanofluidics 2014 conference (AMN2014)*, May 21-23, 2014, Academia Sinica, Taiwan.
4. Session chair, “Electrokinetics: Surface and Particle Induced Flows session”, *67th Annual DFD Meeting of the American Physical Society*, Nov. 23-25, 2014, San-Francisco, California, USA.
5. Session chair, “Other microswimmers session”, *Belfer Symposium on Microswimmers*, Jan. 12, 2015, Technion – I.I.T, Haifa, Israel.
6. Organizer and topical session chair - “Electrokinetics”, *6th International Symposium of Bifurcations and Instabilities in Fluid Dynamics*, July 15-17, 2015, Paris, France.

### **Local conferences**

1. Session chair - “MEMS and Nano Technology”, *The 31st Israeli Conference on Mechanical Engineering (ICME)*, Jun. 2-3, 2010, Tel-Aviv, Israel.
2. Session chair - “Microfluidics 1”, *The 32nd Israeli Conference on Mechanical Engineering (ICME)*, Oct. 17-18, 2012, Tel-Aviv, Israel.



3. Session chair - "Nano- and Micro-fluidic 1", *The 33rd Israeli Conference on Mechanical Engineering (ICME)*, March 2-3, 2015, Tel-Aviv, Israel.

### **Lectures in University seminars**

1. Center of Smart Interface, Darmstadt University, Germany, Dec. 2009.
2. MESA+, Institute for Nanotechnology, Twente University, Netherlands, Oct. 2010.
3. Dept. Environmental Technology, Wageningen University, Netherlands, Oct. 2010.
4. Dept. of Solar Energy and Environmental Physics, Ben-Gurion University of the Negev, Mar. 2013.
5. MIT Micro-Nano Seminar Series in the Department of Mechanical Engineering, Massachusetts Institute of Technology, MA, USA, April 2015.
6. Electrochemistry and Material Science seminar, Tel Aviv University, Tel Aviv, Israel, May 2015.