

Date (March, 2015)**CURRICULUM VITAE****Idit Avrahami**Ariel Biomechanics Center (ABMC): <http://www.ariel.ac.il/research/abmc>Personal Website: <http://www.ariel.ac.il/sites/idit-avrahami>**• Education**

B.Sc. (Cum Laude)

1989-1993, Technion- Israel Institute of Technology, Mechanical Engineering Graduate project: Cooling System for Plastic Injection Moldings (Keter Plastic, LTD.)Supervisor: Prof. Arthur Shavit, Mr. Hanan Anderman

M.Sc. (Cum Laude)

1995-1998, Tel Aviv University - Biomedical Engineering,

Thesis: "Flow across Models of Mechanical Heart Valves"Advisors: Prof Shmuel Einav, Prof. Moshe Rosenfeld

Ph.D.

1998-2003, Tel Aviv University - Biomedical Engineering

Dissertation: "The Effect of Structure on Hemodynamics of Artificial Blood Pumps"Advisors: Prof Shmuel Einav, Prof. Moshe Rosenfeld**• Academic Degrees**

2014-today	Associate Professor, Ariel University
2012-2014	Senior Lecturer, Ariel University
2008-2011	Senior Lecturer, Afeka, Tel Aviv Academic College of Engineering
2006-2008	Lecturer, Afeka, Tel Aviv Academic College of Engineering

• Employment History

2013-today	Department Head, Dep. of Mechanical Eng. & Mechatronics, Ariel University
2011-today	Faculty, Ariel University
2006-2011	Faculty, Afeka, Tel Aviv Academic College of Engineering
2006-2010	Adjacent Lecturer, Tel Aviv University
2004-2006	Post-doctoral fellow, (group of Prof. M. Gharib), California Institute of Technology

2004	Post-doctoral fellow, (group of Prof. A. Landesberg), Technion- Israel Institute of Technology
1995-2003	Graduate research assistant, Tel Aviv University
1993-1995	CAD/CAE Analysis engineer and support, Bercom,LTD
1992	Factory molding and analysis engineer, Keter Plastic, LTD

- **Professional Activities**

Positions in academic administration – Ariel University

2012-2014	Department coordinator for seminars and study tours
2012-2013	Head of Committee for Curriculum in Mechanical Engineering
2012-2013	Head of Committee for Formality of student's Projects
2011-2013	Member of Tutorial Committee

Positions in academic administration – Afeka College

2011	Member of steering committee, Afeka Forum
2011	Member of the Forum of Research Authorities Heads in Engineering Colleges
2010-2011	Head of the Research Committee, Afeka
2010-2011	Academic coordinator for external studies
2007-2009	Committee member, Admission by Exception Committee
2006-2010	Committee member, The Engineering Research Committee
2006-2011,	Committee member, Tutorial Committee, Department of Medical Eng.

Positions in scientific administration

2014-today	Academy representative and Committee member, the Ministry of Health Committee for Clinical Trials - Devices & Advanced Therapies
2014	A member in the referee committee for 2015 scholarships in engineering, the Ministry of Science Technology and Space (representative of biomedical engineering)
2012-today	Principal Investigator, Ariel Biomechanics Center (ABmC)
2014–today	WePower - Women Power (Israel), member of steering committee
2013-today	IFMBE Council of Society members and Delegate
2011-today	ISMBE, Committee Member
2011- today	Editor and manager of ISMBE website

Significant professional consulting

2015	HemoDynamx Technologies LTD
2014-2015	White Swell LTD
2013	Enopace Biomedical Ltd.
2011- 2014	MOR (KAMIN)
2010 - 2013	Endospan Ltd., Herzelia

2010 - 2013 Cardiogard Ltd., (Ariel) Or Yehooda
 2010 - 2011 V-Wave Ltd, Hod-Hasharon

Editor or member of editorial board of scientific or professional journal

2015 Reviewer for the journal: Annals of Biomedical Engineering
 2014 Reviewer for the journal: PLOS ONE
 2013-2014 Reviewer for the journal: Medical & Biological Engineering & Computing
 2006-2013 Reviewer for the journal: Artificial Organs
 2012 Reviewer for the Journal of Biomedical Engineering
 2012 Reviewer for the Journal of Fluids and Structure
 2011-2012 Reviewer for the European Journal of Mechanics - B/Fluids
 2011-2012 Reviewer for the journal: Annals of Biomedical Engineering
 2010-2011 Editor of Afeka Medical Engineering Website
 2011 Reviewer for the Journal of Fluids Engineering
 2008 Reviewer for the journal: Medical & Biological Engineering & Computing

Reviewer of research grant or theses

2014 Examiner of M.Sc. Thesis in Chemical Eng., Ariel University:
 Sapir Cohen, "A bioreactor insert cell culture for production and simultaneous concentration of mammalian proteins"
 2012 Examiner of M.Sc. Thesis in Mechanical Eng., TAU:
 Dikla Kersh, "Velocity and wall shear stresses in pulsating flows with reverse phase"
 2011 Examiner of M.Sc. Thesis in Environmental Eng., Technion:
 Elad Rosin, "Periodic Jet Pump"
 2010 Reviewer for the U.S.-Israel Binational Science Foundation

Examiner of final projects (undergraduates):

2013 Examiner of four final projects in Mechanical Eng & Mechatronics, Ariel
 2012 Examiner of two final projects in Medical Eng., Afeka
 2011 Examiner of three final project in Medical Eng., Afeka

Membership in professional/scientific societies

2013-today EWB, Engineers Without Borders, Israel
 2012-today ISME, Israel Society of Mechanical Engineers
 2011-2012 EUROMECH, European Mechanics Society
 2009-2012 IACMM, Israel Association for Computational Methods in Mechanics
 2009-2012 IACM, International Association for Computational Mechanics
 2004, 2012 BMES, Biomedical Engineering Society
 2002-2013 ISMBE, Israeli Society for Medical and Biological Engineering

2008-2011	HIS, Israel Heart Society
2002-2006	ISHR, International Society for Heart Research
2004-2007	ASME, the American Society of Mechanical Engineers
2009-2012	BASHAAR, Academic Community for Israeli Society

- **Educational Activities**

Courses lecturer – Ariel University

2012-today	Lecturer, “Fluid Mechanics”
2012-today	Lecturer, “Mechanical Eng. Lab”
2012-today	Lecturer, “Advanced Fluid Mechanics”
2012	Lecturer, “Numerical Methods”

Courses lecturer – Afeka College

2011	Lecturer, “Medical Mechanics Laboratory”
2011	Lecturer, “Introduction to Medical Technologies”
2010-2011	Lecturer, “Computational Methods in Engineering”
2010-2011	Lecturer, “Advanced Flow and its Medical Applications”
2009-2011	Lecturer, “Fluid Mechanics”
2008-2011	Lecturer, “Engineering Software Tolls (MATLAB)”
2007-2010	Lecturer, “Fluid Dynamics1”
2007-2010	Lecturer, “Fluid Dynamics2”

Courses lecturer – Tel Aviv University

2009	Lecturer, “Advanced Biofluids”, grad. of BME., TAU
2006-2008	Lecturer, “Computational Methods in Biomed. Eng.”, undergrad. of BME, TAU

Assistant lecturer and lab instructor

2005	TA “Biological Flows”, grad. of BME., Caltech
2003	TA, “Biofluid of the Human Body”, undergrad. of BME, TAU
2002	TA, “Thermodynamics”, undergrad. of BME., TAU
2002	TA, “Biomechanics of the Reproductive System”, undergrad. of BME, TAU
1998-2000	Lab Instructor, “CFD Lab. of Flow and Heat Transfer”, grad. of Eng., TAU
1997	TA “Biofluid of the Human Body”, undergrad. of Mech. Eng., TAU

Development of courses and labs

2011-2012	Ariel, founder of the Ariel Biomechanical Center (ABmC)
2010-2011	Afeka, design and build the Medical Mechanics Laboratory

2010	Afeka, develop the course “Advanced Flow and its Medical Applications”
2010	Afeka, develop the course “Numerical Methods in Engineering”
2009	TAU, develop the course “Advanced Biofluid” for graduate students
2009	Afeka, develop the course “Fluid Mechanics” for medical engineering
2009	Afeka, Build a CFD computer lab in Afeka
2007-2009	Afeka, develop courses material: Fluid Dynamics 1, Fluid Dynamics 2, MATLAB
2004-2006	Caltech, Build and maintain a CFD lab
2004	TAU, develop the course “Numerical Methods in Bioengineering”

• Supervisor for Research Students

Graduate students

2014-today	Elyasaf Leybovich, Ph.D., "Optimization of a continuous transmission according to driving cycle for improvement of fuel consumption efficiency", with Michael Ben Chaim.
2014-today	Raz Masas, M.Sc., "Development of a novel mechanical component for hydrogen fuel cell", Dep. Of Chemical Eng., Ariel, with Dr. Alex Shechter
2014-today	Shirly Shtaynhoff, M.Sc., "experimental study of flow regimes in anastomoses", Tel Aviv University, with Dr. Alex Liberzon
2012-today	Shaily Wald, M.Sc., "Estimation of the flow through aortic valve" Tel Aviv University, with Dr. Alex Liberzon
2012-today	Barak Even Chen, M.Sc., "The Effect of Leaflets Properties on the Valvular Flow". Tel Aviv University, with Dr. Alex Liberzon
2011-today	Hadar Biran, M.Sc., “Visualization techniques for estimation of flow rate based on injection of contrast agent in tubes”. Tel Aviv University, with Dr. Alex Liberzon
2007-2011	Ifat Lavi, Ph.D., “Artery Plaque Composition of Intermediate Lesions“ Tel Aviv University, with Prof. Shmuel Einav and Prof. Ran Kornowski.
2007-2008	Liran Goothait, M.Sc., “Multi-Pinching Impedance Pump” Tel Aviv University, with Prof. Moshe Rosenfeld.
2005-2007	Lea Waisman, M.Sc.,”Impedance Pump as a Mechanical Assist Device of TCPC”, Tel Aviv University, with Prof. Shmuel Einav and Prof. Moshe Rosenfeld.
2004-2007	Laurence Lumens, Ph.D., “Computational Investigation of a Biologically Inspired Two Layer Impedance Pump”, California institute of Technology (CalTech), with Prof. Mory Gharib

Research assistants

2015	Gavriel Korets, "Mechanical component for hydrogen fuel cell"
2015	Elya Shimol, "Investigation of flow in arterial bifurcations"
2014	Idan Avital, "Investigation of flow distribution in arterial tree"
2013-2015	Ronen Meyzel, Lab Engineer
2013	Hadar Shaulinian, "Estimation of pressure losses over coronary stenoses"
2013	Asaph Nardi, "Hemodynamic study of endograft treatment approaches in aortic arch aneurysms"
2013	Eshel Verner, "Estimation of pressure losses over coronary stenoses"
2013	Maxim Bakhrakh, "Investigation of flow distribution in arterial tree"

- 2012 Chai Ben Simchon, "Modification of models for Numerical Simulations" AUC, with Dr. Moshe Brand
- 2012 Tomer Meirson, "Wave dynamics as origin for cerebral aneurysms" Afeka, with Dr. Sara Naftali
- 2011 Tomer Meirson, "the dynamics of flow and structure in fenestrated endografts for treatment of abdominal aortic aneurysms", Afeka, with Dr. Zehava Blechman

Undergraduate students – at Ariel University

- 2015 Barak Farkash, "Thermal design of a Magnetron coil"
- 2014 Asaph Nardi, "Hemodynamic study of endograft treatment approaches in aortic arch aneurysms"
- 2013 Dafna Raz & Oranit Bash "Stress Analysis at the mismatch suture of carotid patches"
- 2013 Jonathan Ciplis, "hemodynamic and mechanical factors for intimal growth in A-V hemodialysis access"
- 2013 Chen Amihood, Antonio Valdrama, Roi Draynberg "Experimental setup of circulatory pulse duplicator"
- 2013 Yaron Galazan, Rowe Akerman, Mohammed Zoabi "Experimental model of aortic valve"
- 2012 Yosu Taplizky, Guy AkImagor, Ofer Zakoon, "Water economizing System"

Undergraduate students – at Afeka College

- 2013 Melanie Ratan, "Optimization of Stent Graft's Geometry for Treatment of Aneurysm in the Arch of Aorta"
- 2013 Tomer Meirson, Research Project – "research project - numerical analysis of flow in coronary artery bypass graft (CABG)"
- *Won Excellent undergraduate project, department of medical engineering*
- 2013 Chen Ben David, Research Project – "investigation of factors initiating cerebral aneurysm"
- 2012 Dana Berca, Research Project – "Optimal implantation for Mitral Mechanical heart valve"
- *Commended undergraduate project, department of medical engineering*
- 2012 Yafit Brener, Research Project – "Fluid and Structure Analysis of Transcatheter Aortic-Valve Implantation"
- 2011 Aliza Azuri, Research Project - "Simulation of Cannula hemodynamics in the aortic arch during cardiopulmonary bypass (CPB)"
- 2011 Ori Hazan "Design and Build a Pulse-Duplicator system for LV model"
- 2011 Leonid Kaplan, Research Project - "Matching of Coronary Stents for Curved Arteries - a Fluid Dynamics Study"

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

Honors and citation awards

- 2014 Excellent lecturer, Ariel University (תשע"ד)
- 2013 Excellent lecturer, Ariel University (תשע"ג)
- 2011 Excellent researcher, Afeka (תשע"א)
- 2010 Excellent lecturer, Afeka (תש"ע)

- 2010 Citation for achievements in research, Afeka (חש"פ)
 2009 Excellent lecturer, Afeka (חש"פ)

Prizes

- 2013 Excellent undergraduate project, department of medical engineering, Afeka
 2012 Commendable undergraduate project, department of medical engineering, Afeka
 2012 First and second prizes, Students Posters competition, ISMBE12
 2002 First prize, Posters exhibition, ISMBE02, BGU
 1998 Excellence Scholarship in the name of Arigo Tereni
 1994 First prize for graduation projects, SME National Projects Competition
 1989-1993 (all 4 years), Technion, Dean Annual Scholarships for excellent achievements in studies

Grants and fellowships

- 2014-2015 Anker K., Avrahami I. and Nisnevitch M., "Development of a synergic emission control system, which utilizes microalgae for the treatment process and as a renewable biofuel". תכנית ק.ר.ט. של חברת החשמל לישראל, 2,000,000 IS
 2012- 2014 Co-investigator, SLEZAK grant for cardiovascular research, 30,000 IS
 2011-2013 KAMIN grant: "minimally invasive FFR", 400,000 IS × two years, supported by MOR
 2004-2006 Research grant, Division of Materials Technology, Nanyang Technological University, Singapore, IP: Morteza Gharib, Idit Avrahami, \$30,000
 2004-2006 Joseph Drown fellowship for Post doctorate, \$60,000
 2004 The Technion scholarship for post doctorate fellows, \$5000
 2003 Maryann scholarship for high achievements in studies, \$15,000, Irving Weiss Scholarship for high achievements in studies
 2000-2003 Excellence doctorate scholarship from the Higher Education Council, \$15,000
 2001 Irving Weiss Scholarship for high achievements in studies
 2000 Max and Pauline Zimmer Family Foundation
 1999-2004 Scholarship by the Fritz Brann Doctoral Fellowship in Engineering and Exact Sciences, Tel Aviv University
 1996 German-Israeli Foundation
 1995-1998 Tel Aviv University Scholarship for M.Sc. studies in Engineering

Proposals for research grants

In addition to the grants and fellowships listed above, as an independent researcher I was involved with the following proposals for research grant:

- 2014 Ben Chaim M. and Avrahami I, "Development of an accurate Method for assessing Fuel consumption and air pollution of Vehicle Fleet in Israel" Ministry of Energy
 2011 I-CORE Proposal of a Topics for the Next Rounds, "Implants and Artificial Devices in Human Circulatory Systems", with 10 leading researchers in the field, including Prof. Shmuel Einav, Prof. Rafael Beyar and Dr. Lior Gepstein.

- 2010 ISF Proposal 443/10, "FSS - Fluid-Structure Separation for Modeling Flows in Compliant Arteries", PI's: A. Yakhot (BGU), I. Avrahami (Afeka), E. Libson (Hadassah). *Application scored "very good"
- 2009 Ministry of Health- Chief Scientist's Research Fund, April "Minimal Cardiac Assistance to Patients with Univentricular Circulation" – Idit Avrahami (Afeka, Tel Aviv)
- 2009 NIH PAR-08-023, "Patient specific modeling for tetralogy fallot", PI's: Arash Kheradvar (USC, Columbia), Idit Avrahami (Afeka, Tel Aviv), Floence Sheehan (UW, Seattle), David Sahn (OSHU, Oregon)
- 2008 Funding grant: duPont Hospital for Children Wilmington, DE, "Providing Cardiac Assistance to a Patient with a Fontan Circulation", PI's: William P. Santamore (Temple University, PA), Idit Avrahami (Afeka, Tel Aviv)
- 2007 BSF Binational Science Foundation proposal, "Miniature multi-pincher valveless impedance pumping for biomedical applications." – Rosenfeld M. (TAU), Avrahami I.(Afeka, Tel Aviv), Gharib M. (Caltech, CA)
- 2005 NIH Bioengineering Research Grant (BRG), "Thrombogenic potential of Blood Recirculating Devices", with Prof. Danny Bluestein
- 2005 National Institute of Health (NIH) grant, "Impedance Pump", Morteza Gharib, Idit Avrahami, Laurence Loumes
- 2005 Research award, American Heart Association (AHA), "Implementation of an impedance pump on a coronary arterial bypass grafts", Idit Avrahami. *Application scored "very good"
- 2003 Fulbright Scholar Program
*Application reached the finals stage, scored "very good"
- 2003 Rothschild fellowships,
*Application scored "very good"

Patents

- US patent No. 7,749,152: Rinderknecht D.; Gharib M.; Avrahami I.; Sharp B., "Impedance pump used in bypass grafts", Issued: 7/6/2010, CIT File Number: 4288
- U.S. Provisional Patent Application No. 61/752,526: Ifat Lavi, Ran Kornowski, Idit Avrahami, Nessi Benishti, Guy Lavi, : "Calculating a fractional flow reserve", filed January 15, 2013

• **Scientific Publications** ([g-scholar](#))

Journal articles

1. Rosenfeld M., **Avrahami I.**, and Einav S. (1999). "The Time-Dependent Flow across a Model of a Mitral Tilting Disk Valve and the Left Ventricle" *ASME-BED* 42:563-564.
2. **Avrahami I.**, Rosenfeld M., Einav S., Eichler M. and Reul H. (2000), "Can Vortices in the Flow Across Mechanical Heart Valves Contribute to Cavitation?" *Medical & Biological Engineering & Computing*; Vol. 38(1): 93-97.
3. **Avrahami I.**, Einav S, Rosenfeld M, Affeld K. (2001) "Hemodynamic Aspects of the Berlin Ventricle Assist Device." *IEEE Engineering in Medicine and Biology Society*, 1:468-72.
4. **Avrahami, I.**, K. Affeld, S. Einav and M. Rosenfield (2001). "Hemodynamics aspects of ventricle assist device", *Technology and Health Care*, 9 (1-2): 72-74.

5. Rosenfeld M., **Avrahami I.** and Einav S. (2002), "Unsteady Effects on Flow across Tilting Disk Valves" *Journal of Biomechanical Engineering*, Vol. 124(1), Pg. 21-29.
6. Einav S, **Avrahami I.**, Rosenfeld M., Raz S. (2002), "Numerical and experimental measurements of the flow through mechanical heart valves in the natural and artificial heart" *IEEE Engineering in Medicine and Biology Society* Vol. 2, Pg.1593-4.
7. **Avrahami I.**, Rosenfeld M. and Einav S. (2006), "The Hemodynamics of the Berlin Pulsatile LVAD and the Role of its MHV Configuration", *Annals of Biomedical Engineering*, Vol. 34 (9); 1373-1388.
8. Loumes_L., **Avrahami. I.**, Gharib M. (2006), "Computational Investigation of a Multilayer Impedance Pump to Serve as an Intra-Aortic Pump", *ASAIO journal* 52(2):32.
9. **Avrahami I.**, Dumont K, Gharib M, Ricotta J, Bluestein D. (2006), "Influence of microcalcifications on vulnerable plaque mechanics—FSI modeling". *Journal of Biomechanics* 39:99-400
10. **Avrahami I.**, Loumes L, Gharib M. (2006), "Numerical investigation of the fluid and structure dynamics in models of impedance pump". *Journal of Biomechanics* 39:438.
11. Loumes L, **Avrahami I.**, Gharib M. (2006), "Computational investigation of a multilayer impedance pump to serve as a long-term intra-aortic pump". *Journal of Biomechanics* 39:309.
12. **Avrahami I.**, Rosenfeld M., Raz S. and Einav S. (2006), "Numerical Model of Flow in a Sac-Type Ventricular Assist Device", *Artificial Organs*, Vol. 30 (7); 529-538.
13. **Avrahami I.** and Gharib M. (2008), "Computational Studies of Resonance Wave Pumping in Compliant Tubes", *Journal of Fluid mechanics*, Vol. 608: 139-160.
14. Bluestein D., Alemu Y., **Avrahami I.**, Gharib M., Dumont K., Ricotta J. J., Einav S. (2008), "Influence of Microcalcifications on Vulnerable Plaque Mechanics using FSI modeling", *Journal of Biomechanics*, Vol. 41(5), 1111-1118.
15. Loumes, L., **Avrahami I.** and Gharib M. (2008), "Resonant pumping in a multilayer impedance pump." *Physics of Fluids*, Vol. 20(2): 023103.
16. Shimony N., **Avrahami I.**, Gorodetsky R., Elkin G., Tzukert K., Zangi L., Levdansky L., Krasny L., and Haviv Y. S. (2008), "A 3-D Rotary Renal and Mesenchymal Stem Cell Culture Model Unveils Cell Death Mechanisms Induced by Matrix Deficiency and Shear Stress", *Nephrology Dialysis Transplantation*, Vol. 23(6):2071-80.
17. Tzukert K., Gorodetsky R., **Avrahami I.**, Krasny L., Shimony N., Elkin G., Nettelbeck D.M., and Haviv Y.S. (2008) "A novel dynamic matrix detachment model reveals a shift from apoptosis to necrosis in melanoma cells". *Cancer Letters*, Vol. 272(2): 345-354.
18. Rosenfeld M. and **Avrahami I.** (2010), "Net Flow Rate Generation by a Multi-Pincher Impedance Pump." *Computers & Fluids*, Vol. 39 (9):1634-1643.
19. Tzukert K., Shimony N., Krasny L., Urieli-Shoval S., Gorodetsky R., **Avrahami I.**, Nettelbeck D. M. and Haviv Y. S. (2010). "Human melanoma cells expressing the $\alpha v \beta 3$ integrin are partially protected from necrotic cell death induced by dynamic matrix detachment." *Cancer*

Letters 290(2): 174-181.

20. **Avrahami I.**, Brand M., Meirson T., Ovadia-Blechman Z., and Halak M. (2012), "Hemodynamic and Mechanical Aspects of Fenestrated Endografts for Treatment of Abdominal Aortic Aneurysm". *European Journal of Mechanics-B/Fluids*, Vol. 35: 85–91.
21. **Avrahami I.**, Dilmoney B., Hirshorn O., Brand M., Cohen O., Shani L., Nir R. R. and Bolotin G. (2013). "Numerical investigation of a novel aortic cannula aimed at reducing cerebral embolism during cardiovascular bypass surgery." - *Special Issue of Journal of Biomechanics*, Vol. 46(2):354-361.
22. **Avrahami I.**, Dilmoney B., Azuri A., Brand M., Cohen O., Shani L., Nir R. R. and Bolotin (2013), "Investigation of Risks for Cerebral Embolism Associated with the Hemodynamics of Cardiopulmonary Bypass Cannula: A Numerical Model" –*Artificial Organs*, Vol. 37(10): 857-865.
23. **Avrahami I.**, (2013) "A Finite element CFD simulation for Predicting Patient-Specific Hemodynamics of an Aortic Coarctation" – *Lecture Notes in Computer Science*: Vol. 8330:110-117.
24. Brand M., **Avrahami I.**, Einav S.; Ryvkin M. (2014), "Numerical Models of Net Structure Stents Inserted into Arteries", *Computers in Biology and Medicine*: Vol 52:102-110.
25. Shani L., Cohen O., Beckerman Z., Nir R. R., **Avrahami I.**, Bolotin G.(2014), "A Novel Emboli Protection Cannula during Cardiac Surgery: In Vitro Results" –*The Journal of Thoracic and Cardiovascular Surgery*, Vol 148 (2), 668-675.
26. Kashi B., Li Z., Rosen J., **Avrahami I.**, Brand M. (2014), "Resolution of human arm redundancy in point tasks by synthesizing two criteria", *International Journal of Modern Engineering Research* Vol. 4 (6, ver7): 1-7
27. Meirson T., Orion E. and **Avrahami I.**, "Numerical analysis of Venous External Scaffolding Technology for Saphenous Vein Grafts", *Journal of Biomechanics*, in press.

Book chapters

1. Rosenfeld M., **Avrahami I.** and Einav S. (1998), "The Effect of Unsteadiness on the Flow across Models of Mitral Valves," in "Mitral Flow", Eds. Papailion, K. D., Tsahalidis, D., Periaix, J., Hirsch, C. and Pandolfi, M., John Wiley & Sons.
2. **Avrahami I.**, (2012) "Vortex Formation in Presence of Mechanical Heart Valves (MHVs)", Section 4.2 in "*Vortex formation in Cardiovascular System*", Kheradvar A. and Pedrizzetti G., Springer Verlag.
3. **Avrahami I.**, (2012) "Vortical Flow Structures in Ventricular Assist Devices (VADs)" section 4.3 in "*Vortex formation in Cardiovascular System*", Kheradvar A. and Pedrizzetti, Springer Verlag.

4. **Avrahami I.**, (2012) “Diagnostic Vortex Imaging: Numerical Simulations”, section 5.4 in “*Vortex formation in Cardiovascular System*”, *Kheradvar A. and Pedrizzetti G., Springer Verlag.*
5. Brand M, **Avrahami I**, Nardi A, Silverberg D, Halak M. (2013). "Clinical, Hemodynamical and Mechanical Aspects of Aortic Aneurysms and Endovascular Repair". In "*Aortic Aneurysms: Risk Factors, Diagnosis, Surgery & Repair*", Ed. *Fischhof & Hatig, Nova Science Publishers, Inc.*

Chapters in collective volumes

1. **Avrahami I.**, (2013) "A Finite element CFD simulation for Predicting Patient-Specific Hemodynamics of an Aortic Coarctation", 4th International Workshop, STACOM 2013, Sept. 22-26, Nagoya, Japan.
2. Meirson T., Orion E., Bolotin G., Brand M. and **Avrahami I.**, (2013) " Numerical Analysis of a Novel External Support Device for Vein Bypass Grafts ", *XIII Mediterranean Conference on Medical and Biological Engineering and Computing MEDICON 2013, Sep 25-28, Sevilla, Spain.*
3. Nardi A., Brand M., Halak M., Ratan M., Silverberg D., and **Avrahami I.**, (2013) " Hemodynamical Aspects of Endovascular Repair for Aortic Arch Aneurysms", *XIII Mediterranean Conference on Medical and Biological Engineering and Computing MEDICON 2013, Sep 25-28, Sevilla, Spain.*
4. Kashi B., **Avrahami I.**, Rosen J., Brand M. (2012), "A Bi-Criterion Model for Human Arm Posture Prediction", *2012 World Congress on Medical Physics and Biomedical Engineering, May 26-31, Beijing, China.*
5. Kashi B., Brand M. , Fuchs M., **Avrahami I.**, Rosen J., (2011) “Synthesizing Two Criteria for Redundancy Resolution of Human Arm in Point Tasks” *the Third World Congress on Nature and Biologically Inspired Computing (NaBIC2011) October 19-21, Salamanca, Spain*
6. **Avrahami I.**, Meirson T., Halak M., Blechman Z., Brand M. (2011), “The Dynamics of Flow and Structure in Fenestrated Endografts for Treatment of Abdominal Aortic Aneurysms”, *Cardiovascular Fluid Mechanics Euromech529, 27-29 June, Cagliari, Italy.*
7. Brand M., Teodorescu M., **Avrahami I.**, Rosen Y. (2011) “Asymmetric Artery Stenosis - Numeric Model”, *Computational & Mathematical Biomedical Engineering (CMBE11), March 30th-April 1st, Washington DC, USA*
8. Brand M., M. Ryvkin S, Einav S, **Avrahami I**, Rosen Y., and Teodorescu M. (2010) “Numerical Models of an Artery with Different Stent Types” , XII Mediterranean Conference on Medical and Biological Engineering and Computing *MEDICON 2010, May 27-30, Chalkidiki, Greece*
9. Bluestein D., Alemu Y., Rissland P., Britan M., **Avrahami I.**, Einav S., Ricotta J. (2007), “Risk of Rupture In AAA and Vulnerable Plaques – Patient Based FSI Simulation”, *ASME 2007, Jun 23, Colorado*
10. **Avrahami I.**, Dumont K., Gharib M., Ricotta J., Einav S., Bluestein D. (2006), "Influence of

Microcalcifications in Thin-Cap Fibroatheroma of a Vulnerable Plaque Using a FEM-FSI Model", *ASME 2006 Summer Bioengineering Conference, June 21 - 25, Amelia Island Plantation, Amelia Island, FL*

11. Naftali S., **Avrahami I.**, and Landesberg A. (2006), "Quantification of the hemodynamics inside a novel Synchronized Therapeutic Cardiac Assist Device for Chronic Heart Failure", *The 53rd Annual Meeting of the Israel Heart Society and the Israel Society of Cardiothoracic Surgery, April 26- 27, Tel-Aviv*
12. Einav S, **Avrahami I.**, Rosenfeld M., Raz S. (2002), "Numerical and experimental measurements of the flow through mechanical heart valves in the natural and artificial heart" *Conference Proceedings Vol. 2, Pg.1593-4. Second Joint EMBS-BMES Conference, October 23-26, Houston, TX,*
13. **Avrahami I.**, Raz S., Einav S., and Rosenfeld M., (2002), "CFD Analysis of Flow Through Mechanical Heart Valves", *IV world congress biomechanics, August 4-9, Calgary, Canada.*
14. **Avrahami I.**, Einav S., Rosenfeld M. and Affeld K. (2001), "Hemodynamic aspects of Ventricle Assist Device", *ESEM2001, Biennial Conference of the European Society for Engineering and Medicine, May 3-5, Belfast.*
15. **Avrahami I.**, Einav S., Rosenfeld M. and Affeld K. (2001), "Hemodynamic aspects of Ventricle Assist Device", *IX Mediterranean Conference on Medical and Biological Engineering and Computing MEDICON 2001, June 12-15, Pula, Croatia.*
16. **Avrahami I.**, Einav S., Rosenfeld M. and Affeld K. (2001), "Hemodynamic aspects of the Berlin ventricle assist device", *The 23rd Annual International Conference of the IEEE EMBS Pg. 468-72, October 25-28, Istanbul, Turkey.*
17. **Avrahami, I.**, Einav, S., Rosenfeld, M., and Affeld, K. (2001), "The Flow Field inside the Berlin Ventricle Assist Device", *ASME Bioengineering Conference, Vol. 50: Pg. 557-8, June 27 - July 1, Snowbird, Utah.*
18. **Avrahami, I.**, M. Rosenfeld, S. Einav, and K. Affeld (2000), "The flow field inside the Berlin ventricle assist device", *The 22nd Annual International Conference of the IEEE EMBS, pg. 718, July 23-28, Chicago*
19. Rosenfeld M., **Avrahami I.**, and Einav S. (1999). "The Time-Dependent Flow across a Model of a Mitral Tilting Disk Valve and the Left Ventricle" *ASME 1999 Bioengineering Conference, June 16-20, Big Sky, Montana.*

Classified articles and reports

- Endospan - July 2010, March 2010, March 2012, July 2013
- Cardiogard - May 2010, Aug. 2010, Sep 2010, Oct 2010, Dec 2010, Jan 2011, Feb 2011, Sep. 2013
- V-Wave - Dec 2010, Jan 2011, March 2011, March 2015
- Warm & Dry – Sep. 2014, Jan 2015

- **Lectures, Presentations and Seminars**

- Session organization and chair

1. Organizing committee and referee, ISMBE15, Feb.,2015
2. Organizing committee, Session chair and referee, ISMBE14, Feb.,2014
3. Session chair, Regional committee and YIC Referee, MEDICON2013 Conference, Sep. 2013
4. Organizing committee, session chair and referee, ISMBE13, Feb.,2013
5. Organizing committee and Session Chair , Israeli Conference on Mechanical Engineering (ICME12), Oct. 2012
6. Session Chair, "Virtual Prototyping of Medical Devices", 1st International Conference on CFD in Medicine and Biology, Mar. 27, 2012
7. Session chair, "Applied Modeling" in Euromech529 Cardiovascular Fluid Mechanics, June 2011
8. Session organization and chair, "Imaging and Medical Devices", ISMBE10, Feb. 2010
9. Meeting coordinator, "Innovations in the field of heart valves", ISMBE journal club, June 2009
10. Session chair, "Medical Engineering – Basic Science", ITRE, Oct. 2006

- Invited seminars and presentations

- International**

1. Taplizky Y., Almagor G., Zakoon O., Lineykin S. and **Avrahami I.**, "Water saving system", *AIPAC Village, at AIPAC Policy Conference, 2-4 March, 2014, Washington DC*
2. **Avrahami I.**, "Scholar in residence", *Palm Beach Synagogue, Shabat Service, March 8, 2014, Palm-Beach, FL*
3. **Avrahami I.**, "Numerical Investigation of Artificial Cardiac Devices", *GALCIT Fluid Mechanics Seminar, January14, 2005, Caltech.*

- National**

4. **Avrahami I.**, "Numerical models in Bioengineering", *Colloquium, Department of Chemical Engineering, Ariel University Center of Samaria, 20 November 2011, Ariel*
5. **Avrahami I.**, "Numerical simulations in Biomedical Research", *Colloquium, Department of Biomedical Engineering, Ben Gurion University, 1 June 2011, Beer Sheva*
6. **Avrahami I.**, "Fluid and Structure Mutuality in Biomedical Research", *Colloquium, Department of Mechanical Engineering & Mechatronics, Ariel University Center of Samaria, 2 February 2011, Ariel*
7. **Avrahami I.**, "Flow in Compliant Vessels in Biomedical Research", *Colloquium, Department of Mechanical Engineering, Tel Aviv University, 26 April 2010, Tel Aviv*
8. **Avrahami I.**, "Fluid and structure coupling in biomedical research", *Colloquium, Department of Mechanical Engineering, Ben-Gurion University, May 14, 2008, Beer Sheva.*
9. **Avrahami I.**, "Fluid and structure coupling in biomedical research", *Colloquium, Afeka, December 23, 2007*
10. **Avrahami I.**, "Fluid and structure coupling in biomedical research", *Colloquium, School of Engineering, Bar Ilan University, May 9, 2007, Ramat Gan*

11. **Avrahami I.**, "Computational studies of resonance wave pumping in compliant tubes", *Department of Biomedical Engineering, April 26, 2006, Tel Aviv University.*
12. **Avrahami I.**, "Computational studies of resonance wave pumping in compliant tubes", *Department of Chemical Engineering, April 27, 2006, Ben Gurion University, Beer-Sheva.*
13. **Avrahami I.**, "Computational studies of resonance wave pumping in compliant tubes", *Department of Mechanical Engineering, May 1, 2006, Technion, Haifa.*
14. **Avrahami I.**, "The Effect of Structure on the Hemodynamics of Artificial Blood Pumps", *Department seminar, Department of Biomedical Engineering, August 2003, Tel Aviv University.*
15. **Avrahami I.**, "Unsteadiness Effects in the Flow across Models of Mitral Valves", *Department seminar, Department of Biomedical Engineering, October, 1998, Tel Aviv University.*

Invited plenary lectures at conferences/meetings

International

1. **Avrahami I.**, Meirson T., Halak M., Blechman Z., Brand M. (2011), "The Dynamics of Flow and Structure in Fenestrated Endografts for Treatment of Abdominal Aortic Aneurysms", *Cardiovascular Fluid Mechanics Euromech 529, 27-29 June, Cagliari, Italy.*
2. **Avrahami I.**, Loumes L., and Gharib M. (2006), "Numerical investigation of the fluid and structure dynamics in models of impedance pump", *5th World Congress of Biomechanics, July 29 - August 4, Munich, Germany.*
3. **Avrahami I.** (2005) "Characterization of Impedance Pumping using Numerical Simulations", *Fluid Mechanics Research Conference, November 01, Caltech.*

National

4. **Avrahami I.**, Dilmoney B., Bolotin G., (2013), "Cerebral Embolism during Cardiopulmonary Bypass - Do We Have A Solution?", *ISMBE13, 19 February, Conventions Center, Haifa*
5. **Avrahami I.** (2010), "Fluid and structure tango in biomedical research", *ISMBE10, 27 April, David Intercontinental, Tel Aviv*
6. **Avrahami I.**, Rosenfeld M., Einav S. (2004), "Homodynamic numerical investigation of artificial heart devices", *ISMBE04, 17 March, Technion, Haifa.*
7. **Avrahami I.**, Rosenfeld M., Einav S. (2002), "Fluid-Structure-Interaction Methods for Heart Valve Motion", *Fluent Users' Group Meeting, May 7, Haifa.*
8. **Avrahami I.**, Rosenfeld M., Einav S. (2002), "Factors in Vortices Formation across Mechanical Heart Valves", *Interdisciplinary Mini-Symposium, April 21, Tel-Aviv University.*

Presentation of papers at conferences/meetings

International Conferences

1. Nardi A., Brand M., Halak M., Silverberg D., and **Avrahami I.** (2014), "Hemodynamical Aspects of Endovascular Repair for Aortic Arch Aneurisms", *12th Biennial Conference of Engineering Systems and Analysis ESDA2014, June 25-27 Copenhagen, Denmark.*
2. Nardi A., Brand M., Halak M., and **Avrahami I.** (2014), "Hemodynamical Aspects of Endovascular Repair for Aortic Arch Aneurisms", *6th European Conference on Computational Fluid Dynamics (ECFD6), July 20-25, 2014, Barcelona, Spain.*
3. Meirson T., Orion E., Bolotin G., Brand M., **Avrahami I.** (2013), "Numerical Analysis of a Novel External Support Device for Vein Grafts", *Bioengineering13, 16-17 Sep. Glasgow, UK.*
4. Laybovitch E, Einav S., **Avrahami I.**, Brand M., "Mechanical Interaction between Overlapping Stents and Superficial Femoral Arteries", *Bioengineering13, 16-17 Sep. Glasgow, UK.*
5. Nardi A., Brand M., Halak M., Meirson T., Silverberg D., **Avrahami I.** " Endovascular Repair Approaches for Aortic Aneurisms" *Bioengineering13, 16-17 Sep. Glasgow, UK.*
6. Berca D., Shani L., Brand M. and **Avrahami I.** (2012),"Optimal Implantation for Mitral Mechanical Heart Valve", *XXXIX European Society for Artificial Organs (ESAO) Congress, Sep. 26-29 Rostock Germany*
7. Brener Y., Lavi I., Brand M. and **Avrahami I.**, (2012) " Numerical Investigation of the Hemodynamics of Transcatheter Aortic Valves", *XXXIX European Society for Artificial Organs (ESAO) Congress, Sep. 26-29 Rostock Germany*
8. Berca D., Shani L., Brand M. and **Avrahami I.** (2012),"Optimal Implantation for Mitral Mechanical Heart Valve", *Bioengineering12, 6-7 Sep. Oxford.*
9. Brener Y., Lavi I., Brand M. and **Avrahami I.**, (2012) Numerical Investigation of the Hemodynamics of Transcatheter Aortic Valves", *Bioengineering12, 6-7 Sep. Oxford.*
10. **Avrahami I.**, Meirson T., Halak M., Blechman Z., Brand M. (2012), "Mechanical aspects of fenestrated endografts for treatment of abdominal aortic aneurysm", *1st int. Conference on CFD in Medicine and Biology, March 25-30, Dead Sea, Israel*
11. **Avrahami I.**, Dilmoney B., Hirshorn O., Azuri A., Bolotin G. (2012) "A Novel Aortic Cannula for cardiopulmonary bypass to Reduce Cerebral Emboli – A Numerical Study" *1st int. Conference on CFD in Medicine and Biology, March 25-30, Dead Sea, Israel*
12. Kashi B., Brand M., Rosen J. and **Avrahami I.** (2011), "Synthesizing Two Criteria for Redundancy Resolution of Human Arm in Point Tasks", *Third World Congress on Nature and Biologically Inspired Computing (NaBIC2011), October 19-21, Salamanca University, Spain*
13. **Avrahami I.**, Azuri A., Dilmoney B., Hirshorn O., Bolotin G. (2011), "A novel aortic cannula for cardiopulmonary bypass to reduce cerebral emboli - a numerical study", *Bioengineering11, 12-13 Sep., London.*

14. **Avrahami I.**, Meirson T., Halak M., Blechman Z., Brand M., (2011), "Mechanical aspects of fenestrated endografts for treatment of abdominal aortic aneurysm" *Bioengineering*11, 12-13 Sep. London.
15. Brand M., Teodorescu M., **Avrahami I.**, Rosen I. (2011), "Asymmetric Artery Stenosis - Numeric Model", *2nd International Conference on Computational & Mathematical Biomedical Engineering*, 30 March - 1 April, Washington
16. Loumes L., **Avrahami I.** and Gharib M. (2006), "Multilayer Impedance Pump: Application to Intra-Aortic Assist Device", *BMES2006, October 11-14, Chicago*.
17. **Avrahami I.**, Dumont K., Einav S., Gharib M., Ricotta J. and Bluestein D. (2006), "Influence of Microcalcifications on Vulnerable Plaque Mechanics – FSI Modeling", *5th World Congress of Biomechanics*, 29 July - 4 August, Munich, Germany.
18. Loumes, L., **Avrahami I.** and Gharib M. (2006). "Computational investigation of a multilayer impedance pump to serve as a long-term intra-aortic pump." *5th World Congress of Biomechanics*, 29 July - 4 August, Munich, Germany.
19. Loumes L., **Avrahami. I.**, Gharib M. (2006), "Computational Investigation of a Multilayer Impedance Pump to Serve as an Intra-Aortic Pump", *ASAIO 52nd Annual Conference, June 8 - 10, The Palmer House Hilton, Chicago, IL*
20. **Avrahami, I.** and M. Gharib (2006), "Effects of membrane stiffening on focal-adhesion bonding under steady and unsteady conditions", *IEEE Bio Micro and Nanosystems Conference, Jan. 15-18, San Francisco, CA*
21. Avrahami I. and Gharib M.(2005), "Implementation of Impedance Pump on A Coronary Artery Bypass Graft", *Platform presentation, BMES 2005 fall meeting, Sep. 28-Oct. 1, Baltimore*.
22. Saber N., **Avrahami I.** and Gharib M. (2005), "Computational Investigation of the Effects of Heart Rate Variation on Renal Blood Flow ", *BMES 2005 fall meeting, Sep. 28 – Oct. 1, Baltimore*.
23. Avrahami I. and Gharib M. (2005), "Implementation of Impedance Pump on a Coronary Artery Bypass Graft", *Young Investigators Forum, Sep. 30, University of California, Irvine, California*.
24. Aronis Z., **Avrahami I.**, Raz S., Martinez J.-P.E., Einav S. (2005) "Mutual Effects of Multi-Focal Atherosclerotic Plaques", *ASME Summer Bioengineering Conference, June 22-26, Vail, Colorado*.
25. **Avrahami I.**, Rosenfeld M., Raz S. and Einav S., (2004), "Design Considerations for Pulsatile Ventricular Assist Devices" *BMES Annual Fall Meeting, October 13-16, Philadelphia, PA*.
26. Einav S., **Avrahami I.**, Rosenfeld M. (2003), "The Effect of Structure on the Hemodynamics of Artificial Blood Pumps", *International Bio-Fluid Symposium and Workshop, December 12-14, Caltech, Pasadena, California*.

27. **Avrahami I., Einav S.,** Rosenfeld M., Affeld K. (2003), "The Effect of Structure on Blood Pump Hemodynamics", *BMES Annual Fall Meeting, October 1-4, Nashville, TN.*
28. **Einav S., Avrahami I.,** Rosenfeld M. and Raz S. (2003), "Investigation Of The Motion Of Tilting-Disk Valve" *World Congress on Medical Physics and Biomedical Engineering, August 24-29, Sydney, Australia.*
29. **Avrahami I., Einav S.** and Rosenfeld M. (2003), "The Effect of Structure on Blood Pump Hemodynamics", *ASME 2003 Summer Bioengineering Conference, June 25-29, Sonesta Beach Resort, Florida.*
30. **Avrahami I.,** Rosenfeld M., Einav S., Raz S., Zaretsky U. and Affeld K.,(2002) "Numerical and Experimental Measurements of the Flow in Pulsatile Ventricle Assist Device", *Poster exhibition, IV world congress biomechanics, 4-9 August, Calgary, Canada.*
31. **Avrahami I., Raz S.,** Zaretsky U., Rosenfeld M. and Einav S. (2002), "Experimental Analysis of Flow Through Tilting Disk Valve", *IV world congress biomechanics, 4-9 August, Calgary, Canada.*
32. **Avrahami, I.,** K. Affeld, **S. Einav** and M. Rosenfield (2001). "Hemodynamics aspects of ventricle assist device", *Technology and Health Care - The 6th biennial conference of the European Society for Engineering and Medicine (ESEM),3-5 May, Belfast, Northern Ireland.*
33. **Avrahami I.,** Einav S., Rosenfeld M. and Affeld K., (2001) "Hemodynamic aspects of the Berlin ventricle assist device", *Platform presentation, E.S.A.O., European Society for Artificial Organs, #VIII Congress, September 22-25, Gent University, Gent – Belgium.*
34. **Avrahami I., Einav S.,** Rosenfeld M. and Affeld K. (2001), "Hemodynamic Aspects of Ventricle Assist Device", *International Society of Biomechanics XVIIIth Congress, July 8- 13, Zurich, Switzerland*
35. **Einav S.,** Rosenfeld M. and **Avrahami I.** (2000), "The Flow Field inside Ventricle Assist Device", *53rd Annual Meeting of Fluid Dynamics, November 19, Washington DC.*
36. **Avrahami I., Einav S.,** Rosenfeld M. and Affeld K. (2000), "The Flow Field inside the Berlin Ventricle Assist Device", *12th Conference of the European Society of Biomechanics, August 27-30, Dublin, Ireland.*
37. **Avrahami I.,** Rosenfeld M., **Einav S.** and Affeld K. (2000), "The Flow Field Inside the Berlin Ventricle Assist Device", *9th Ion Flow Visualization, August 22-25, Edinburgh, Scotland.*
38. **Avrahami I.,** Rosenfeld M., **Einav S.** and Affeld K.(2000), "The Flow Field inside the Berlin Ventricle Assist Device", *10th International Symposium on Applications of Laser Techniques to Fluid Mechanics, July 10-13, Lisbon, Portugal.*
39. **Rosenfeld M., Avrahami I. and Einav S.** (1999), "The Flow across Mechanical Heart Valves" *Euromech Coll 389 Physiological Flows and Flow-Structure Interactions, April 20- 24, Graz, Austria.*
40. **Rosenfeld, M., Avrahami, I.** and Einav, S. (1998), "Simulation of Flow Across Mechanical Heart

Valves Using a Weak Flow-Structure Interaction Method," *The Third World Congress of Biomechanics, August 2-8, Sapporo, Japan.*

41. Einav, S., Rosenfeld M., and **Avrahami I.** (1998), "The Effect of Unsteadiness on the Flow across Models of Mitral Valves" *International Workshop on Prosthetic Heart Valves: Future Directions, February 18-22, Hilton Head, SC, USA.*

National Conferences

42. Ben Chaim M., **Avrahami I.** and Sapir I. (2015), "Analytic Modeling of Vehicle Exhaust Emissions for Car with Gasoline Engine at ECE – 15 Driving Cycle Conditions", *33rd Israeli Conference on Mechanical Engineering (ICME 2015), March. 2-3, TAU*
43. Ben Chaim M., **Avrahami I.** and Sapir I. (2015), "Analytical Determination of the Car the Fuel Consumption for the ECE-15 Urban Driving Cycle", *33rd Israeli Conference on Mechanical Engineering (ICME 2015), March. 2-3, TAU*
44. Kashi B., Einav S. , **Avrahami I.**, Brand M. (2015), "Pulsatility Index as a Dominant Factor of Disturbed Flow in Arteriovenous Fistulae for Hemodialysis., *33rd Israeli Conference on Mechanical Engineering (ICME 2015), March. 2-3, TAU*
45. Laybovitch E., Einav S., **Avrahami I.**, Brand M. (2015), "Mechanical Interaction between Stent Overlapping and Superficial Femoral Arteries", *33rd Israeli Conference on Mechanical Engineering (ICME 2015), March. 2-3, TAU*
46. Biran H., Liberzon A., **Avrahami I** (2015), " Development of a measurement method of a coronary flow distribution based on angiography and a lumped model", *poster exhibition and students lectures, ISMBE15, 27 February, Conventions Center, Haifa*
47. Even Chen B., Liberzon A., **Avrahami I.**, Lavi I., Kornowski R., (2015), " The impact of the flow pattern in the aortic sinuses on the coronary perfusion during the diastole phase ", *poster exhibition ,ISMBE15, 27 February, Conventions Center, Haifa*
48. Kashi B., Einav S. , **Avrahami I.**, Brand M. (2015), "Pulsatility index as a dominant factor of disturbed flow in arteriovenous fistulae", *poster exhibition, ISMBE15, 27 February, Conventions Center, Haifa*
49. Nardi A., Brand M., Halak M., **Avrahami I** (2014), "Stent graft configuration and dynamics in the aortic arch", *lecture at Posters session ,ISMBE14, 27 February, Conventions Center, Haifa*
50. Biran H., Liberzon A., **Avrahami I** (2014), "The development of an angiography based blood flow measurement technique in a coronary artery", *poster exhibition ,ISMBE14, 27 February, Conventions Center, Haifa*
51. Even Chen B., Liberzon A., **Avrahami I.** (2014), "The impact of the flow pattern in the aortic sinuses on the coronary perfusion during the diastole phase", *poster exhibition ,ISMBE14, 27 February, Conventions Center, Haifa*
52. Laybovitch E., Einav S. ,**Avrahami I.**, Brand M., (2013) , "Numerical Analysis of Flow in

- Coronary Artery Bypass Graft", *1st PRIZE, Posters exhibition ,ISMBE13, 19 February, Conventions Center, Haifa*
53. Meirson T., Bolotin G., **Avrahami I.**, (2013) , "Numerical Analysis of Flow in Coronary Artery Bypass Graft", *3rd PRIZE, Posters exhibition ,ISMBE13, 19 February, Conventions Center, Haifa*
54. Raz D., Bash O., Brand M., Halak M., **Avrahami I.**, (2013), "The Effect of Closing Approach during Carotid Endarterectomy", *ISMBE13, 19 February, Conventions Center, Haifa*
55. Nardi A., Brand M., Halak M., **Avrahami I.**, (2013), "Hemodynamics of Stent Grafts for Treatment Of Aortic Aneurisms in the Aortic Arch", *ISMBE13, 19 February, Conventions Center, Haifa*
56. **Avrahami I.**, Dilmoney B., Brand M., Bolotin G. (2012) "A Novel Aortic Cannula for cardiopulmonary bypass to Reduce Cerebral Emboli – A Numerical Study", *32nd Israeli Conference on Mechanical Engineering (ICME 2012), Oct. 17-18, TAU*
57. Tomer M., **Avrahami I.**, Halak M., Blechman Z., Brand M.(2012)," Coupled Numerical Models of Fenestrated Endovascular Aneurysm Repair Stent-Grafts Using Effective Mechanical Properties and Specific Anatomies", *32nd Israeli Conference on Mechanical Engineering (ICME 2012), Oct. 17-18, TAU*
58. Brener Y., Lavi I. and **Avrahami I.** (2012)," Fluid Analysis of Transcatheter Aortic-Valve implanted in the natural annulus and valve-in-valve", *32nd Israeli Conference on Mechanical Engineering (ICME 2012), Oct. 17-18, TAU*
59. Berca D., Shani L., and **Avrahami I.** (2012),"Optimal Implantation for Mitral Mechanical Heart Valve", *32nd Israeli Conference on Mechanical Engineering (ICME 2012), Oct. 17- 18, TAU*
60. Kashi B., Rosen J., **Avrahami I.**, Lic Z. and Brand M. (2012), "Synthesizing Two Criteria for Redundancy Resolution of Human Arm in Point Tasks", *32nd Israeli Conference on Mechanical Engineering (ICME 2012), Oct. 17-18, TAU*
61. Leybovitch E., Einav S., **Avrahami I.**, Brand M., "Mechanical Interaction between Overlapping Stents and Superficial Femoral Arteries *32nd Israeli Conference on Mechanical Engineering (ICME 2012), Oct. 17-18, TAU*
62. **Avrahami I.**, Dilmoney B., Bolotin G. (2012), "Numerical Model of Aortic Cannula Hemodynamics for Evaluation of Risk for Atheroembolism", *The 59th Annual conference of the Israel Heart Society in association with the Israel Society of Cardiothoracic Surgery, April 1, David Intercontinental, Tel Aviv*
63. Brand M. and **Avrahami I.** (2012) "Numerical models of stent in blood vessels; coronary and abdominal aortic aneurysm's stents", *IACMM 23nd Symposium on Computational Mechanics (ISCM32), March 22, Afeka College, Tel-Aviv.*

64. Meirson T., Brand M., Blechman Z., Halak M., **Avrahami I.** (2012) "Mechanical Aspects of Fenestrated Endografts for Treatment of Abdominal Aortic Aneurysm", *1ST PRIZE, Posters exhibition, ISMBE12, February 28, Afeka College, Tel-Aviv.*
65. Brener Y., Lavi I., **Avrahami I.** (2012) "Flow Analysis of Transcatheter Aortic-Valve" *2ND PRIZE, Posters exhibition, ISMBE12, February 28, Afeka College, Tel- Aviv.*
66. Azuri L. and **Avrahami I.** (2011), "Cannula hemodynamics in the aortic arch during cardiopulmonary bypass (CPB)" *Posters exhibition, ISMBE11, February 22, Afeka College, Tel-Aviv.*
67. Hazan O. and **Avrahami I.** (2011), "Design and Build of a Pulse-Duplicator system for LV model" *Posters exhibition, ISMBE11, February 22, Afeka College, Tel- Aviv.*
68. Korenzvit S., Yakhot A., **Avrahami I.** (2010) "FSS-Fluid Structure Separation for modeling flows in complaint arteries", *ICME2010, June 2-3, Tel Aviv*
69. Lavi I., Omer T. **Avrahami I.**, Kornowski R. , Einav S. (2010), "3D Characterization of Coronary Arteries for Assessing Risk of Plaque Rupture by Using Patient-Specific Computational Models Based on IVUS-VH Images", *57th Annual congress of the Israel Heart Society and the Israel Society of Cardiothoracic Surgery, April 15, Tel Aviv*
70. **Avrahami I.**, (2007) "Fluid and structure coupling in biomedical research" *Ansys Fluent Users' Group Meeting, May 17, Herzliya*
71. **Avrahami I.**, (2006) " Implementation of a Resonance Wave Pump on a Coronary Artery Bypass Graft", *Innovations in Cardiovascular Interventions (ICI), Dec 3-5, Hilton, Tel-Aviv,*
72. **Avrahami I.**, (2006) "Numerical coupling of Fluid and Structure in Cardiac Flow and Devices", *International Conference on Information Technology: Research and Education (ITRE '06) Oct. 17-18, Afeka, Tel Aviv*
73. Naftali S., **Avrahami I.**, and Landesberg A. (2006) " Quantification of the hemodynamics inside a novel Synchronized Therapeutic Cardiac Assist Device for Chronic Heart Failure", *International Conference on Information Technology: Research and Education (ITRE '06) Oct. 17-18, Afeka, Tel Aviv*
74. Naftali S., **Avrahami I.**, and Landesberg A. (2005) "A Design and Quantification of Blood Flow in a Synchronized Therapeutic Cardiac Assist Device for Chronic Heart Failure", *UK - Israel Workshop on Hemodynamics, Vascular Wall Morphology and Atherogenesis, Dec 12-13 Tel Aviv.*
75. Rosenfeld M., **Avrahami I.** and Einav S. (2005), "Hemodynamic Aspects of Artificial Heart Devices: Use of CFD in Bio-Engineering", *The 30th Israeli conference on ME, May 29-30, Tel Aviv.*
76. **Avrahami I.**, Naftali S. and Landesberg A. (2005), "Numerical Study of Blood Flow in a Physiological Ventricle Assist Device", *#1 Annual Meeting of the ISHR, February 24, Technion, Haifa.*

77. **Avrahami I.**, Einav S., Rosenfeld M., U. Zaretsky and K. Affeld, (2003) "Numerical and Experimental Measurements of the Flow in Pulsatile Ventricle Assist Device", *Posters exhibition, ISMBE03, January 23, Tel-Aviv.*
78. **Avrahami I.**, Ras S., Einav S. and Rosenfeld M., (2003) "Numerical and Experimental Measurements of the Flow through Mechanical Heart Valves in the Natural and Artificial Heart", *Posters exhibition, BIO-ANALIZA2003, Jan. 21, Tel-Aviv.*
79. **Avrahami I.**, Rosenfeld M. and Einav S., (2002), "Experimental and Numerical Study of the Time Dependent Flow through Prosthetic Heart Valves", *1st prize in posters competition, ISMBE02, February 12, BGU, Beer-Sheva.*
80. **Avrahami I.**, Einav S., Rosenfeld M. and K. Affeld, (2001), "The Flow inside the Berlin VAD", *Platform presentation, XVII Annual ISHR Meeting, February 8, Technion, Haifa.*
81. **Avrahami I.**, Einav S. and Rosenfeld M., (2001), "Hemodynamic Aspects of Ventricular Assist Device", *Posters exhibition, ISMBE01, January 16, TAU, Tel Aviv.*
82. **Avrahami I.**, Einav S., Rosenfeld M. and K. Affeld, (2000), "The Flow inside the Berlin VAD", *Platform presentation, The 28th Israel Conference on Mechanical Engineering, June 15, Ben Gurion University, Beer-Sheva.*
83. **Avrahami I.**, Einav S., Rosenfeld M. and K. Affeld, (2000), "The Flow inside the Berlin VAD", *Posters exhibition, 47th Annual Meeting of the ISHS, April 12, Tel Aviv.*
84. **Avrahami I.**, Einav S., Rosenfeld M. and K. Affeld, (2000), "The Flow inside the Berlin VAD", *Posters exhibition, ISMBE00, February 21, Technion, Haifa.*
85. **Avrahami I.**, Rosenfeld M. and Einav S., (1999), "Flow across Models of Mechanical Mitral Heart Valves", *Posters exhibition, ISMBE99, January 12, TAU, Tel Aviv.*
86. **Avrahami I.**, Rosenfeld M. and Einav S., (1998), "The Effect of Unsteadiness on the flow across Models of Mitral Valves", *Platform presentation, Israel-China Bi-national Conf. on Cardiovascular Engineering and Assisted Circulation, Nov. 23-24, Maale Hachamisha, Israel.*