

March 2022

CURRICULUM VITAE
Zvi Pinhas BAR-YOSEPH
Professor Emeritus

PERSONAL:

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ACADEMIC DEGREES:

1978: D.Sc. Technion – Israel Institute of Technology, Haifa, Israel.
1975: M.Sc. with distinction, Mechanical Engineering,
Technion – Israel Institute of Technology, Haifa, Israel
1972: B.Sc. *Summa cum Laude*, Mechanical Engineering,
Technion – Israel Institute of Technology, Haifa, Israel.

ACADEMIC APPOINTMENTS:

Sept. 2014- Aug. 2016: Visiting Professor, Department of Mechanical Engineering, State University of New York (SUNY) at Stony Brook, USA.
Since Oct. 2014: Professor Emeritus, Mechanical Engineering,
Technion – Israel Institute of Technology, Haifa, Israel.
Jan. 1, 2009 - Sept. 30, 2014: Dean, Faculty of Mechanical Engineering,
Technion – Israel Institute of Technology, Haifa, Israel.
(Three terms: Jan. 1, 2009 – Dec. 31, 2010; Jan. 2, 2011 – Dec. 31, 2012; Jan. 1, 2013 – Sept. 30, 2014).
Aug.-Sept. 2009: Visiting Professor, Department of Mathematics, Technical University of Denmark, Lyngby, Denmark.
Jan.-Aug. 2008: Visiting Professor, Dept. of Mechanical and Aerospace Engineering, University of California, San Diego (UCSD), USA
Aug-Dec. 2007: Visiting Scholar, Dept. of Mechanical and Aerospace Engineering, University of California, San Diego (UCSD), USA
Aug. 1998 - Aug. 1999: Visiting Scholar, Department of Mechanical Engineering, Northwestern University, Evanston, USA.
Since 1997: Professor, Mechanical Engineering,
Technion – Israel Institute of Technology, Haifa, Israel.

- Jan.-Feb. 1992: Visiting Research Professor (C4), Institut für Mechanik, Technische Hochschule, Darmstadt, Germany.
- July-Dec. 1991: Exchange Associate Professor, Department of Mechanical Engineering, University of Sydney, Australia.
- Jan.-Feb. 1989; Feb. 1990, 1991: Visiting Professor (C4), Institut für Mechanik, Technische Hochschule, Darmstadt, Germany.
- Summer 1988: Visiting Associate Professor, Department of Mechanical Engineering, MIT, Cambridge, Massachusetts, USA.
- 1988-1997: Associate Professor, Mechanical Engineering, Technion - Israel Institute of Technology, Haifa, Israel.
- 1985-1986: Visiting Scientist, Applied Mechanics, Stanford University, Stanford, California, USA.
- 1984: Senior Lecturer with tenure, Mechanical Engineering, Technion.
- 1982: Senior Lecturer, Mechanical Engineering, Technion – Israel Institute of Technology, Haifa, Israel.
- 1981: Lecturer, Mechanical Engineering, Technion – Israel Institute of Technology, Haifa, Israel.
- 1979-1981: Post-Doctoral Fellow, Department of Aeronautics and Astronautics, MIT, Cambridge, Massachusetts, USA.
- 1975-1978: Graduate Instructor, Mechanical Engineering, Technion – Israel Institute of Technology, Haifa, Israel.
- 1972-1975: Graduate Assistant, Mechanical Engineering, Technion – Israel Institute of Technology, Haifa, Israel.

MILITARY SERVICE:

- 1964-1995: Active military service and reserve duty, IDF.

RESEARCH INTERESTS:

Computational (Fluid & Solid) Mechanics
Higher Performance Computing in Mechanics
Variational and Asymptotic Methods
Finite Element and Spectral Element Methods
Fluid-Structure Interaction
Dynamic and Hydrodynamic Stabilities

Rotating Flows; Non-Newtonian Fluids

Dynamic Finite Element Modelling and Control of Flexible Structures,
Unicycles and Bicycles

Composite Materials

Crystal Growth and Bio-separation processes

Developing computational methods for simulating multi-scale bio-physical
phenomena related to cardiovascular and metabolic diseases:

Hemodynamics, Blood Coagulation, Atherosclerotic and Vulnerable
Plaques, AAA; Bone modeling and remodeling.

Robust computational methods (multi-scale finite element and variational
multi-scale methods) for simulating the behavior of biological organisms at
micro- and nano-scales.

TEACHING EXPERIENCE:

At Technion:

1. Numerical Analysis and Programming (Undergraduate)
2. Elasticity (Undergraduate)
3. Variational Methods (Undergraduate)
4. Numerical Analysis (Undergraduate)
5. Finite Elements for Engineering Analysis (Undergraduate)
6. Numerical Methods in Mech. Eng. (Graduate)
7. Finite Element Methods in Mech. Eng. 1, 2 (2-semester course, Graduate)
8. Finite Element Nonlinear Analysis in Fluid and Solid Mechanics (Graduate)

At the International School of Engineering, Technion:

1. Finite Elements for Engineering Analysis
2. Numerical Analysis

At the Dept. of Mechanical Engineering, University of Sydney:

1. Conduction and Radiation
2. Gas Dynamics

At the Dept. of Mechanical and Aerospace Engineering, University of California, San Diego (UCSD):

1. MAE113 Fundamentals of Propulsion

2. MAE101B Advanced Fluid Mechanics

At the Dept. of Mechanical Engineering, State University of New-York at Stony Brook:

1. MEC 364 Introduction to Fluid Mechanics
2. MEC 320 Numerical Methods in Engineering Design and Analysis
3. MEC 524 Computational Methods for Fluid Mechanics and Heat Transfer (Graduate)

TECHNION ACTIVITIES:

General:

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|----------------------|---|
| 2019-to date | Technion Academic Co-Head, GTIIT Research Center for Sciences & Engineering in Health and Medicine [GTIIT-SEHM] |
| 2018-to date | Judge, Technion Academic court of Law |
| 2012-2013: | Member, Steering Committee, Technion-Cornell Innovation Institute |
| 2007 | Member, Harvey Prize Professional Evaluation Committee (Technion's most prestigious award) |
| 2006-2008: | Founding Member of the Center for Computation in Nanotechnology with the RBNI. |
| 1.1.06-31.12.07: | Elected Member, the Senate Standing Committee for Honorary Rewards and Prizes. |
| Dec. 2005- Aug, 2007 | Elected Member, the New Senate of the Technion. |
| Since Feb. 2005: | Member, Asher Space Research Institute |
| 1.1.05-31.12.06: | Elected Member, Senate Academic Development Committee |
| 2004 to date: | Member, Product Lifecycle Management Competency Center. |
| 2003-2004: | Member, Chairmen Panel of the Senate Professional Committee. |
| 2001-2003: | Elected Member, Senate Committee on Senior and Tenure Appointments and Promotions (A&P) |
| 2001-2003: | Member, Senate Postdoctoral and Academic Visitors Fellowships Committee |
| 2001-2003: | Member, Senate Faculty Research Awards Committee |
| 2001-2005: | Chairman, Technion Computational Mechanics Committee |
| 2000-2001: | Member, Technion Computational Mechanics Committee |
| 1998: | Member, Graduate School Loans Committee |
| 1991, 1995: | Member, Parallel Computer Committee |
| 1975-1977: | Judge, Technion Academic Court of Law |

1991: Computational Activity Assistant to the Vice President for Development

Departmental:

2009 - 2019: Founder and Head, *Biomechanics Center of Excellence*, Faculty of Mechanical Engineering, Technion
<http://me-biomechanics.net.technion.ac.il/people/>

2000-2003: Chairman, Computer Committee

1993, 1995-6: Member, Department Graduate Committee

1989-1990: Deputy Dean of Undergraduate Studies, Faculty of Mechanical Engineering, Technion.

1988-1989: Coordinator of Undergraduate Studies, Faculty of Mechanical Engineering, Technion.

1987-1989: Faculty Representative on Supercomputer Committee

1987-1988: Faculty Representative on Computer Committee

1984-1985: Responsible for microcomputer services in the Faculty of Mechanical Engineering, Technion.

1984 to date: Head, Computational Mechanics and Biomechanics Laboratory, Faculty of Mechanical Engineering, Technion.

1977-1978: Responsible for computer services in the Faculty of Mechanical Engineering, Technion

PUBLIC PROFESSIONAL ACTIVITIES:

Editorship:

2017–2018 Proceedings of the 7th Int. Symposium on Bifurcations and Instabilities in Fluid Mechanics, *Fluid Dynamics Research Journal*, Vol. 50, No.5, Oct.2018

2015–2016 Proceedings of the 6th Int. Symposium on Bifurcations and Instabilities in Fluid Mechanics, *Fluid Dynamics Research Journal*, vol. 48, No. 6, 2016

2014–2016 Corresponding Editor, *Computer Modeling in Engineering & Science Journal*

2013–2014 Proceedings of the 5th Int. Symposium on Bifurcations and Instabilities in Fluid Mechanics, *Fluid Dynamics Research Journal*, vol. 46, No. 4, 041001-041425, 2014

2008 – 2009 Proceedings of the 3rd Int. Symposium on Bifurcations and Instabilities in Fluid Mechanics, *J. of Physics: Conference Series*, vol. 216, Institute of Physics Publishing. <http://iopscience.iop.org/1742-6596/216/1>

2006 – 2007 Proceedings of the 2nd Int. Symposium on Bifurcations and Instabilities in Fluid Mechanics, *J. of Physics: Conference Series*, vol. 64, Institute of Physics Publishing. <http://www.iop.org/EJ/toc/1742-6596/64/1>

1998 – 2005: *Computational Fluid Dynamics Journal*

Editorial Boards:

1999 -2004: *Computer Modeling in Engineering & Science (CMES)*

1997 - 2002: *Hybrid Methods in Engineering Journal*

1992 - 1998: *Computational Fluid Dynamics Journal*

Other Activities:

2005-2006 Member, ISF (Israel Science Foundation) Fluid Mechanics and Heat Transfer Committee

2004-2009,
2013-2021: Member, *International Association for Computational Mechanics (IACM) General Council*

2004: Founder of the International Symposium series on *Bifurcations and Instabilities in Fluid Mechanics (BIFD)*.

2003-2004: Member, Inter-Senate Committee (ISC) of the Universities for the protection of Academic Independence

2002-2003,
2014: Referee for *ECCOMAS*, selecting an Israeli candidate, for the Award for the best annual Ph.D. Thesis on Computational Methods in Applied Sciences and Engineering

2001-2006: Member, *ECCOMAS Committee in CFD*

2001-2006: Scientific Director, *High Performance Computing Center (HPCU)*, National Inter University Computation Center (IUCC)

1999: Founding Member of the *International Society for Computational Engineering & Sciences*.

1997-2001: Member, Steering Committee, National Inter-University Supercomputer Center

1995-2001: President, *Israel Association for Computational Methods in Mechanics (IACMM)*

1993: Founder of the *Israel Association for Computational Methods in Mechanics*

Reviewer for Journals:

Israel J. of Technology; ASME Trans., J. of Fluids Engineering; Computers & Fluids; J. of Sound and Vibrations; Int. J. Solids and Structures; Int. J. Numer. Methods Fluids; ASME Trans., J. of Tribology; Computational Mechanics: An International Journal; Finite Element in Analysis and Design, The International Journal of Applied Finite Elements and Computer Aided Engineering; Int. J. Numer. Methods Eng.; Comm. Appl. Numer. Methods; Computational Fluid Dynamics Journal; J. of Composite Research and Technology; Mechanical Systems and Signal Processing; Int. J. Turbo & Jet-Engines; Composite Engineering: An International Journal; Journal of Fluid Mechanics; AIAA J. Guidance, Control and Dynamics; ASCE J. Engineering Mechanics; Physics of Fluids; Int. J. for Computational Civil and Structural Engineering; J. Crystal Growth; Int. J. Multiphase Flow; Int. J. Thermal Sciences; Canadian Journal of Physics; J. Computational Physics; CAD J.; Comm. Nonlinear Science and Numerical Science Simulation J., J. Biomechanics; Ocean Engineering J.

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

ASME - *Fellow*, American Society of Mechanical Engineering (ASME)
ISTAM - Israel Society for Theoretical and Applied Mechanics
IACM - International Association for Computational Mechanics
IACMM - Israel Association for Computational Methods in Mechanics
EUROMECH - European Mechanics Society
CFDCC - CFD Community Club
USACM - United States Association of Computational Mechanics

HONORS:

2013: *Best Paper Award – Second Prize*. CIRP Conference on Bio-Manufacturing (CIRP-BioM 2013), March 3-5, 2013, Tokyo, Japan. (See conference paper No. 70).

January 2011: *Fellow, ASME*

Aug.-Sept. 2009: Visiting Professorship awarded by the Danish National Science Foundation through their "Fundamental Problems in Fluid Dynamics" project.

2006: *2006 AIAA Best Paper in Fluid Dynamics*. Awarded by the AIAA Fluid Dynamics Technical Committee for our paper AIAA 2006-3226. 36th AIAA Fluid Dynamics Conference, June 5-8, San Francisco, CA (See conference paper No. 55).

Jan. 2005-

Oct. 2014: *Samuel and Anne Tolkovsky Chair*

1998: *Best poster presentation award, 11th Heat Transfer Conference (IATC), August 23-28, 1998, Kyonju, Korea*

1979-1981: Lady Davis Post-Doctoral Fellowship

1979: Gutwirth Scholarship

1977: *Landau Prize* (Mif'al Hapayis, Tel Aviv) for distinction in research

1972: Gutwirth Scholarship

GRADUATE STUDENTS:

M.Sc. Students:

Completed Theses [37]:

1. Jacob Avrashi, "Assumed Stress Approach for Analysis of Free Edge Stress Field in Composites", September 1983, [J11, J14].
2. Givon Siton, "The Effect of Material Nonlinearity on the Interlaminar Stress Field in Composite Laminates", February 1984, [J12].
3. Ishaiahu Herschkovitz, "Approximate Analysis Method for Stiffened Folded Plates Structures", September 1986, [J20].
4. Ofer Pillar, "Failure and Micromechanics Analyses of Composite Laminated Plates", May 1987. Currently: Chairman of the Board at Vicut Ltd.
5. Joel Draib, "Failure of Composites subjected to Biaxial Loadings", May 1987 (with Prof. E. Altus as a co-supervisor).
6. Anne Weil, "Analysis of Temperature Field Around Multiple Cryoprobes" September 1988 (with Prof. A. Shitzer as a co-supervisor), [J38]. Currently: Software Engineer, Biomedical Engineering, Technion.
7. David Elata, "Discontinuous Finite Elements in Time and Space for Solving Nonlinear Hyperbolic Systems", January 1989, [J24, J36]. Currently: Associate Professor, ME, Technion.
8. Abraham Shtark, "Hybrid Finite Element Method for Composite Cylindrical Shell with a Hole", February 1989.
9. Uzi Zrahia, "Space-Time Finite Element Method for Thermal Analysis of Ceramic Coatings in Diesel Engines", March 1989, [J39].
10. Yoseph Lavy, "Mixed-Hybrid Finite Strip Method for the Analysis of Folded Plate Structures", October 1989 (with Prof. G. Rosenhouse as a co-supervisor), [J30].
11. Daniel Ben-David, "Edge Layer Stress Analysis for Unsymmetrical Laminated Plates" March 1990, [J28].
12. Mark Berelowitz, "The Finite Element Analysis of Stirring Induced by Alternating Magnetic Fields", July 1990, [J32]. Currently: Product Development Engineer at Finisar, Sydney, Australia.

13. Shimon Weichendler, "Asymptotic Spectral Element Method for Boundary Layer Problems", February 1991. Currently: Senior Engineer, Rafael.
14. Dan Aharoni, "Mixed Finite Element Formulation in the Time Domain for Solution of Dynamic Problems", May 1991, [J32]. Currently: Director, EMC.
15. Gideon Even-Sturelsi, "Finite Element Solution of Compressible Navier-Stokes Equations in Rotating Flow", June 1991 (with Prof. A. Solan as a co-supervisor). Currently: CEO, Bioscan Technologies.
16. Matityahu Zaidman-Dvir, "Variational-Asymptotic Formulation for 3-D Analysis of a Through-Width Delamination in Composite Plates", June 1991.
17. Alona Ben-Tal, "Optimal Maneuver of a Flexible Arm by Space-Time Finite Elements", December 1993 (with Prof. H. Flashner as a co-supervisor), [J49, J51]. Currently: Senior Lecturer, Mathematics, Massey University, New Zealand.
18. Yuri Kryzhanovski, "Finite Element Analysis of Rotating Non-Newtonian Fluid Flows", March 1995, [J55]. Currently: Software Developer at Jonas Software, Toronto, Canada.
19. Yoav Nave, "Spectral Element Modelling and Control of a Unicycle", April 1996 (with Dr. Y. Halevi as a co-supervisor), [J64]. Currently: Senior Engineer- Energy Technology, Rio Tinto, Perth, Australia.
20. Daniel Fisher, "Spectral Element Methods for Nonlinear Dynamical Systems", April 1996 (with Dr. O. Gottlieb as a co-supervisor), [J53, J57]. Currently: Senior System Engineer, Rafael.
21. Ilan Ohayon, "Expert System for Dynamic Analysis of Printed Circuit Boards", February 1998.
22. Harel Plat, "Space-Time Spectral Element Analysis and Control of a Nonlinear Beam", February 1998 (with Prof. H. Flashner as a co-supervisor). Currently: Ph.D., Senior System Engineer, Rafael.
23. Isaac Afriat, "Toward an Optimal Design of Composite Frames for Bicycles", March 1998.
24. Noga Mousaiy, "Impact Loading of Filament Wound Vessels", May 1998 (with Prof. J. Lifshitz as a co-supervisor).
25. Yishai Rinat, "Spectral Finite Elements Model for the Investigation of the Nonlinear Dynamics of Composite Laminated Plate with Piezoelectric Layers", December 1998.
26. Eli Eshkoli, "Study of Round Turbulent Jet in a Crossflow", March 2001 (with Prof. D. Adler as a co-supervisor).
27. Neomi Amir, "Analysis of Thermal Damage to the Eye Lens in Organ Culture Systems and Applications to Environmental Damage of High Temperature in the Workplace", January 2004 (with Dr. A. Dovrat as a co-supervisor), [J96]. Currently: Physician.
28. Ilya Beletsky, "Drug Distribution Analysis for Drug Eluting Stent Applications", July 2005.
29. Gaddiel Ouaknin, "Multiscale Computational Models for Simulating Stochastic Collective Cells Migration", February 2009. *Summa Cum Laude*, RBNI Scholarship and Pnueli Prize for academic excellence, [J99]. Currently: Ph.D. Student in Computational Sciences and Engineering, UC Santa Barbara.

30. Ido Yaakovovitz, "Non-Uniform Rational B-Spline (NURBS) Finite Element Method – A Natural Unified Approach to Geometrical Design and Mechanical Analysis". (Brakim Student – a special B.Sc. & M.Sc. program for distinguished students), May 2010, *Summa Cum Laude*. Currently: Officer, IDF.
31. Matar Movshovitz, "Interrupted Thread Optimal Design", (Brakim Student – a special B.Sc. & M.Sc. program for distinguished students), March 2014. Currently: Officer, IDF.
32. Lev Donevich, "Investigation of Sound generated by a Perforated Elastic Plate" (Brakim Student – a special B.Sc. & M.Sc. program for distinguished students), December 2014. Currently: Officer, IDF.
33. Liron Reuveny, "Design of Scaffold with Porous Structure" (Prof. Anath Fischer, Co-Adviser), November 2015.
34. Alex Boroda, "Finite Element Analysis of Optimal Design of Tire Section in Agricultural Radial Tires". December 2015. Currently: R&D Tire Engineer at ALLIANCE Tire Group (ATG), Israel
35. Michal Markovits, "Modeling and Computational Simulation of Atherosclerotic", Nov. 2016.
36. Ehud Goldman, "Implementation of Damage Mechanics to Characterize the Behavior of Asphalt Concrete under Creep Loading", (Dr. Arie Sides, co-advisor), August 2020.
37. Adva Hazan, "Experimental Analysis on Liquid Sloshing in Rectangular Containers", May. 2021

Theses in Progress [1]:

38. Moshe Ankri, "Topology Optimization with Length Scale as a Design Variable", (Assoc. Prof. Oded Amir, co-advisor), April 2020.

M.E. Students:

Completed Theses [3]:

1. David Rubin, "Analyzing Lens Deformation as a Response to External Forces", March 1998.
2. Shaltiel Cohen, "Space-Time Finite Volume Methods for Unsteady Heat Transfer Problems", December 1998.
3. Sapir Ariel, "Developing an Approach to Reconstruct 3-D Bodies from their Cross Sections", July 2002.

PhD Students:

Completed Theses [14]:

1. Gershon Yaniv, "Hygrothermal Effects on the Time-Dependent Mechanical Behavior of Multi-Material Multi-Layered Bonded System", May 1984 (with Prof. O. Ishai as a co-supervisor), [J16]. Currently: CEO and Co-founder, DisperSol Technologies, USA.

2. Jacob Avrashi, "Variational-Asymptotic formulations for 3-D Stress Analyses of Free Edge Problems in Laminated Composite Shells", March 1988, [J18, J19, J27, J34].
3. Batia Perry, "Hybrid Stress Elements for Static Response of a System of Inclined Plates", March 1991 (with Prof. G. Rosenhouse as a co-supervisor), [J25, J29, J35]. Currently: Software Engineer, Computer Center, Technion.
4. Uzi Zrahia, "Space-Time Spectral Elements for Dynamic Analysis of Composite Laminates", October 1993, [J40, J47, J48].
5. Eduard Moses, "Analysis of Combustion of Gasoline-Methanol Mixtures", June 1994 (with Prof. A. Yarin as a co-supervisor), [J41, J46, J48, J58]. Currently: CEO, JROM-CFD.
6. Daniel Ben-David, "Finite Strip Analysis of Composite Cylindrical Pressure Vessels Subjected to Lateral Impact", March 1995. Currently: Group Leader FEM Applications at PTC, San Francisco.
7. Igor Ravve, "Analysis of Elastic Deformations in the Traveling Joints of Machine Tools", June 1997 (with Prof. Y. Yarnitsky as a co-supervisor).
8. Erich Wilson, "Thrust-Vectoring Nozzle Performance Modeling", April 2002 (with Prof. D. Adler as a co-supervisor), [J71, J78-J82]. Currently: Owner of IPro-Tek L.L.C., USA.
9. Pavel Kagan, "New B-Spline Finite Element Approach for Integrated Mechanically Based Design and Analysis", June 2002 (with Dr. A. Fischer as co-supervisor), [60,85]. Currently: Technical university of Eindhoven, The Netherland.
10. Victoria Suponitsky, "The Generation of Streaks and Hairpin Vortices from a Localized Vortex Disturbance Embedded in Unbounded Uniform Shear Flow", December 2003 (with Prof. Y. Cohen as co-supervisor). Gutwirth Award, [J89, J93]. Currently: Computational Fluid Dynamics Research Engineer at General Fusion Inc., Canada.
11. Yaron Rosenstein, "Three-Dimensional Stability Analysis of the Czochralski Crystal Growth Process" (Inter-departmental Committee for Applied Mathematics), July 2005, [J95].
12. Lev Podshivalov, "3D Hierarchical Geometric Modeling and Multiscale Finite Element Analysis as a Base for Individualized Medical Diagnosis of Bone Structure", (with Prof. A. Fischer as co-supervisor), November 2011, Jacobs Scholarship for academic excellence, 2008 and 2010; Gutwirth Fellowship, [J97, J98, J101-J103, J107]. Currently: Software Engineer, Hutchinson, France.
13. Gilead Moiseyev, "Numerical Simulation of Hemodynamically Induced Blood Coagulation Formation and Growth". Direct doctoral degree track, March 2014 [J100, J104, J105, J106]. David Pnueli and Olga Pnueli Prize for Excellence in the PhD Thesis. Currently: R&D Manager, Medinol.
14. Nina Liora Breitman, "Nonlinear Finite Element analysis of Liquid Sloshing in Upright Cylindrical and Square-base Cylindrical Containers", August 2021[J107]. Currently: Algorithm Developer, KLA, Israel.

Post-doctoral and Repatriated Scientists*:

Completed [7]:

1. Dr. Jacob Avrashi, "Variational Asymptotic Study of a Cylindrical Embedded Delamination in Composites", 1988-1989. Currently: Adjunct Senior Lecturer, ME Technion.

2. Dr. Alexander Arkadyev, "Computational Fluid Dynamics in Turbomachinery", 1991-1994 (with Prof. D. Adler as a co-supervisor), [J37, J43, J44].
3. Dr. Igor Keller, "Convective Stability of Binary Mixture due to Gravity Modulation and Soret Effect", 1995-1997 (with Dr. A Oron as a co-supervisor), [J59].
4. Dr. Alexander Gelfgat, "Hydrodynamic Stability of Confined Swirling Flows" 1994-2002 (with Prof. A. Solan as a co-supervisor), [J50, J52, J61-J63, J65-J66, J70, J73-J77, J83-J84, J86, J87, J90-J92]. Currently: Full Professor, School of Mechanical Engineering, TAU
5. Dr. Alexander Potapov, "Numerical Modeling of Crystallization Processes Affected by Melt Flow and Heat/Mass Transfer" 2001-2002 (with Dr. A. Gelfgat as a co-advisor).
6. Dr. Alexander Rubinov, "Krylov Subspace Iteration Based Methods for Direct Solution of Stability Problems in Fluid Dynamics (2000-2003; with Prof. A. Solan and Dr. A. Gelfgat as a co-advisor), [J90, J92, J94].
7. Dr. Vladimir Erenburg, "Transport Phenomena in Microgravity", 2004-2005, [J86, J90].

Referee of Ph.D. Theses (Abroad):

1. M. Viehl, "*Analytical Investigation of the Compressible Navier-Stokes Equations for Low Mach and Reynolds Numbers*", Dr. rer. nat. Dissertation, THD, Darmstadt, 1989.
2. S. Uellner, "*Entwicklung und Einsatz der Laser Speckle Velocimetry zur Messung von Geschwindigkeitsfeldern in rotierenden Systemen*", Dr.-Ing. Dissertation, THD, Darmstadt, 1992.
3. Thesis Topic: "*A Finite Element Method for Nonlinear Spherical Dynamics*", Acting as Judge for the Young Scholars Dissertation Awards 2004, Chinese University Press, Hong Kong).
- 4 S. Conley, "*Overcoming Element Quality Dependence of Finite Element Methods*", (Acting as a member of her PhD dissertation committee), Applied Mathematics and Statistics Department, Stony Brook University, 2016.

External Referee for several universities in Israel and abroad

RESEARCH GRANTS:

- 2017-2021: Pazi Foundation (Grant # 298/18), NIS 209,000, co-PI Prof. O. Gendelman, Co-PI Dr. E. Shimshoni, Co-I Prof. P. Bar-Yoseph.
- 2011-2012: Technion-Hutchinson R&D center cooperation project, €67,200, P.I.s: A. Fischer, P.Z. Bar-Yoseph, ME Technion, D. Benoualid, I. Wander, Hutchinson R&D Center, France, 1.5 year project.
- 2010-2011: Germany-Israel Umbrella cooperation. A project with RWTH Aachen University, 1 year project, \$13,500, Co-P.I.s Fischer, P. Bar-Yoseph, ME Technion, D. Weichert, RWTH Aachen University.
- 2009: The Phyllis and Joseph Gurwin Fund for Scientific Advancement, \$49,500, with Assoc. Prof. A. Fischer.

- 2007-2008: Technion Fund for Medical-Engineering collaboration, \$10,000, with: Prof. Fischer-ME Technion; Prof. Ish-Shalom-Faculty of Medicine, Technion and Rambam Medical Center.
- 2002-2004: Asher Space Research Institute, \$10,000 per annum, with Prof. A. Solan.
- 1999-2002: *Binational Science Foundation* (BSF), US\$50,000 per annum, with Prof. A. Yarin; Profs. M. Graham and E. Lightfoot of University of Wisconsin-Madison.
- 1998-2001: *Ministry of Science* (Applied Mathematics), NIS 222,000 per annum, with Prof. A. Solan and Prof. E. Kit of Tel Aviv University.
- 1997-2000: *The Israel Academy of Sciences and Humanities* (ISF), \$69,000 per annum, with Prof. A. Solan.
- 1997: Consortium for Quarter Micron Technologies (Neaman Institute), \$78,000, with Prof. A. Solan.
- 1996-1999: Japan Ministry of Education, Science, Sports and Culture (Monbusho) for International Scientific Research Program (with Dr. A. Gelfgat; joint research with Profs. Tanasawa and Nishio of Tokyo University and Prof. T. Maekawa of Tokyo University and Prof. Yu. Gelfgat, Institute of Physics, Latvian Academy of Sciences).
- 1995-1997: *German Israeli Foundation for Scientific Research and Development* (G.I.F.), DM 273,500, with Prof. A. Yarin; Drs. G. Gerbeth and J. Priede of Forschungszentrum Rossendorf, Dresden.
- 1990-1993: Ministry of Science and Technology, State of Israel, \$42,540, with Prof. D. Adler.
- 1987-1990: *The Israel Academy of Sciences and Humanities* (ISF), \$37,500 per annum, with Prof. A. Solan.
- 1992: Col. Asher Peled Memorial Fund, \$5,000.
- 1987-1990: Research and Development Branch, Israel Defense Ministry, with Prof. O. Ishai.

SIGNIFICANT PROFESSIONAL PROJECTS:

Consulting Activities:

- 1998-2000: Fluent, USA (Fluid-Structure-Interaction)
- 1996: Bnei-Zion Hospital (3-D FE Analysis of Artificial Knee)
- 1996: Elbit Advanced Technology Center (Dynamic Analysis of Electronic Equipment)
- 1994-1996: Israel Electric Corporation (Computational Fluid Dynamics)
- 1990, 1994, 1995, 1996: KLA Instruments (Israel) Corporation (Static and Dynamic Analysis of High Precision Instruments)
- 1990-1992: Israel Military Industries (Static and Dynamic Response of Bridge Structures; with Prof. E. Altus)
- 1990: Israel Defense Force - Ordnance Corps (Static and Dynamic Response of Vehicles)

1981-1995: The Israel Navy (Finite Element Analysis of Ship Structures)

PUBLICATIONS

Theses:

M.Sc. - Thesis Topic:

"The Stability of a Flexible Rotor Supported by Circumferentially Fed Journal Bearings", January 1975, supervisor: Profs. J.J. Blech.

D.Sc. - Thesis Topic:

"Finite Element Solution of Navier-Stokes Equations in Rotating Flow", December 1978, Supervisors: Prof. J.J. Blech and A. Solan.

Refereed papers in professional journals:

1. Bar-Yoseph, P. and Blech, J.J., "The Stability of a Flexible Rotor Supported by Circumferentially Fed Journal Bearings", *ASME Trans., J. Lub. Tech.*, Vol. 99, 469-477, 1977.
2. Bar-Yoseph, P., Solan, A. and Blech, J.J., "The Effect of Inertia on Flow Between Misaligned Rotating Disks", *ASME Trans., J. Fluids Eng.*, Vol. 103, 82-87, 1981.
3. Bar-Yoseph, P. and Pian, T. H. H., "Calculation of Interlaminar Stress Concentration in Composite Laminates", *J. Composite Materials*, Vol. 15, 225-239, 1981.
4. Bar-Yoseph, P., Blech, J.J. and Solan, A., "Finite Element Solution of Navier-Stokes Equations in Rotating Flow", *Int. J. Numer. Methods Eng.*, Vol. 17, 1123-1146, 1981.
5. Bar-Yoseph, P., Blech, J.J. and Solan, A., "Finite Element Analysis for Rotating Flow in Skewed Shrouded Rotor Geometry", *Int. J. Numer. Methods Eng.*, Vol. 18, 351-362, 1982.
6. Bar-Yoseph, P., "Round-off Error in the Penalty Finite Element Analysis of Incompressible Continuous Media", *Int. J. Numer. Methods Eng.*, Vol. 18, 792-797, 1982.
7. Bar-Yoseph, P., "On the Accuracy of Interlaminar Stress Calculations in Laminated Plates", *Computer Methods for Applied Mechanics and Engineering*, Vol. 36, 309-329, 1983.
8. Bar-Yoseph, P., "Standard and Asymptotic Finite Element Methods for Incompressible Viscous Flows", *ASME, Applied Mechanics Division*, Vol. 51, 143-155, 1982.
9. Altus, E. and Bar-Yoseph, P., "A 3-D Finite Difference Solution for Orthotropic Laminated Composites Using Curvilinear Coordinates", *Computers and Structures*, Vol. 17, 573-577, 1983.
10. Bar-Yoseph, P. and Olek, S., "Asymptotic and Finite Element Approximations for Heat Transfer in Rotating Compressible Flow Over an Infinite Porous Disk", *Computers & Fluids*, Vol. 12, No. 3, 177-197, 1984.

11. Bar-Yoseph, P. and Avrashi, J., "Interlaminar Stress Analysis for Laminated Plates Containing a Curvilinear Hole", *Computers & Structures*, Vol. 21, No. 5, 917-932, 1985.
12. Bar-Yoseph, P. and Siton, G., "The Effect of Material Non-Linearity on the Interlaminar Stress Field in Composite Laminates", *Computers & Structures*, Vol. 21, No. 6, 1105-1118, 1985.
13. Bar-Yoseph, P. and Israeli, M., "Asymptotic Finite Element Method for Boundary Value Problems", *Int. J. Numer. Methods Fluids*, Vol. 6, 21-34, 1986.
14. Bar-Yoseph, P. and Avrashi, J., "New Variational-Asymptotic Formulations for Interlaminar Stress Analysis in Laminated Plates", *Journal of Applied Mathematics and Physics (ZAMP)*, Vol. 37, 305-321, 1986.
15. Bar-Yoseph, P. and Israeli, M., "An Asymptotic Finite Element Method for Improvement of Finite Element Solutions of Boundary Layer Problems", *Numerische Mathematik*, Vol. 49, 425-438, 1986.
16. Bar-Yoseph, P., Yaniv, G. and Ishai, O., "The Interdependence of Hygrothermal Processes and Elasto-Viscoplastic Behavior in Polymer-Dominated Multi-Material Systems", *Computers & Structures*, Vol. 25, 11 - 27, 1987.
17. Bar-Yoseph, P., Seelig, S., Solan, A. and Roesner, K. G., "Vortex Breakdown in Spherical Gap", *Phys. Fluids*, Vol. 30, 1581 - 1583, 1987.
18. Bar-Yoseph, P. and Avrashi, J., "On the Nature of the Free Edge Stress Singularity in Composite Laminated Plates", *Int. J. Numer. Methods Eng.*, Vol. 26, 1507-1523, 1988.
19. Bar-Yoseph, P. and Avrashi, J., "New Variational-Asymptotic Formulations for 3-D Stress Analysis of Laminated Composite Shells with a Circular Hole", *J. Applied Mathematics and Physics (ZAMP)*, Vol. 39, 682-698, 1988.
20. Bar-Yoseph, P. and Herschkovitz, I., "Analysis of Folded Plate Structures", *Thin-Walled Structures*, Vol. 7, 139-158, 1989.
21. Shpitalni, M., Bar-Yoseph, P. and Krimberg, Y., "Finite Element Mesh Generation Via Switching Function Representation", *Finite Elements in Analysis and Design*, Vol. 5, 119-130, 1989.
22. Bar-Yoseph, P., "Space-Time Discontinuous Finite Element Approximations for Multi-Dimensional Nonlinear Hyperbolic Systems", *Computational Mechanics*, Vol. 5, 145-160, 1989.
23. Edwards, D.A., Shapiro, M., Bar-Yoseph, P., "The Influence of Reynolds Number upon the Apparent Permeability of Spatially Periodic Arrays of Cylinders", *Phys. Fluids A*, Vol. 2, 45-55, 1990.
24. Bar-Yoseph, P. and Elata, D., "An Efficient L_2 Galerkin Finite Element Method for Multi-Dimensional Nonlinear Hyperbolic Systems", *Int. J. Numer. Methods Eng.*, Vol. 29, 1229-1245, 1990.

25. Perry, B., Bar-Yoseph, P. and Rosenhouse, G., "Towards Adaptive Mesh Refinement: Application of New Rectangular Hybrid Finite Elements in 2D Elasticity Problems", *Int. J. Numer. Methods Eng.*, Vol. 30, 473-489, 1990.
26. Bar-Yoseph, P., Solan, A., Hillen, R. and Roesner, K.G., "Taylor Vortex Flow Between Eccentric Coaxial Rotating Spheres", *Phys. Fluids A*, Vol. 2, 1564-1573, 1990.
27. Avrashi, J. and Bar-Yoseph, P., "Mixed-Hybrid Finite Strip Method for 3-D Composite Structures", *Computational Mechanics*, Vol. 7, 253-267, 1991.
28. Bar-Yoseph, P. and Ben-David, D., "On Mesh Refinement Methods of Mixed-Hybrid Elements for Revealing the Nature of the Singularity in the Free Edge of a Composite Laminated Plate", *Commun. Appl. Numer. Methods*, Vol. 7, 315-324, 1991.
29. Perry, B., Bar-Yoseph, P. and Rosenhouse, G., "Hierarchical Hybrid Finite Element Formulation for 2D Elasticity Problems", *Commun. Appl. Numer. Methods*, Vol. 7, 393-401, 1991.
30. Lavy, Y., Bar-Yoseph, P. and Rosenhouse, G., "Mixed-Hybrid Finite Strip Method for Folded Plate Structures", *Computers & Structures*, Vol. 42, 433-446, 1992.
31. Aharoni, D. and Bar-Yoseph, P., "Mixed Finite Element Formulations in the Time Domain for Solution of Dynamic Problems", *Computational Mechanics*, Vol. 9, 359-374, 1992.
32. Berelowitz, M. and Bar-Yoseph, P., "Finite Element Analysis of Stirring Induced by Alternating Magnetic Fields", *Int. J. Numer. Methods Heat & Fluid Flow*, Vol. 2, 155-169, 1992.
33. Bar-Yoseph, P., Roesner, K.G. and Solan, A., "Vortex Breakdown in the Polar Region Between Rotating Systems", *Phys. Fluids A*, Vol. 4, 1677-1686, 1992.
34. Avrashi, J. and Bar-Yoseph, P., "Variational Asymptotic Study of a Cylindrical Embedded Delamination in Composites", *Computers & Structures*, Vol. 44, 89-96, 1992.
35. Perry, B., Bar-Yoseph, P. and Rosenhouse, G., "Rectangular Hybrid Stress Element for Analysing Folded Plates Structure", *Computers & Structures*, Vol. 44, 177-185, 1992.
36. Bar-Yoseph, P., Elata, D., and Israeli, M., "On the Generalized L_2 Galerkin Finite Element Method for Linear Hyperbolic Equations", *Int. J. Numer. Methods Eng.*, Vol. 36, 679-694, 1993.
37. Arkadyev, A., Bar-Yoseph, P., Solan, A. and Roesner, K.G., "Thermal Effects on Axisymmetric Vortex Breakdown in Spherical Gap", *Phys. Fluids A*, Vol. 5, 1211-1223, 1993.
38. Weill, A., Shitzer, A. and Bar-Yoseph, P., "Finite Element Analysis of the Temperature Field around Two Adjacent Cryo-Probes", *ASME Trans., J. Biomechanical Engineering*, Vol. 115, 374-379, 1993.

39. Zrahia, U. and Bar-Yoseph, P., "Alternative Designs Towards Thermal Optimization of Coated Valves Using Space-Time Finite Elements", *Int. J. Numer. Methods Heat & Fluid Flow*, Vol. 4, 189-206, 1994.
40. Zrahia, U. and Bar-Yoseph, P., "Space-Time Spectral Element Methods for Second Order Hyperbolic Equations", *Comput. Methods Appl. Mech. Eng.*, Vol. 116, 135-146, 1994.
41. Moses, E., Bar-Yoseph, P. and Yarin, A.L., "On Finite Element Solutions of Boundary Layer Equations", *Computational Fluid Dynamics Journal*, Vol. 3, No. 2, 139-160, 1994.
42. Bar-Yoseph, P., "On Multiple Flow Patterns and Vortex Breakdown Phenomena in Confined Rotating Flows", *Computational Fluid Dynamics Journal*, Vol. 3, No. 3, 273-292, 1994.
43. Yarin, A.L., Arkadyev, A.* and Bar-Yoseph, P., "Coating Growth on Turbine Blade in Polydisperse Particles/Hot Gas Flow", *Int. J. Turbo & Jet-Engines*, Vol. 11, Nos. 2-3, 243-247, 1994.
44. Arkadyev, A*., Bar-Yoseph, P. and Adler, D., "Towards an Interactive Aerodynamic Design of Turbomachines: Flow Computation", *Int. J. Turbo & Jet-Engines*, Vol. 11, No. 4, 301-314, 1994.
45. Bar-Yoseph, P. and Ben-David, D., "Free Edge Effects in Unsymmetrically Laminated Composite Plates", *Composite Structures*, Vol. 30, 13-23, 1995.
46. Moses, E., Yarin, A.L. and Bar-Yoseph, P., "On Knocking Prediction in Spark Ignition Engines", *Combustion and Flame*, Vol. 101, No. 3, 239-261, 1995.
47. Zrahia, U. and Bar-Yoseph, P., "Plate Spectral Elements Based Upon Reissner-Mindlin Theory", *Int. J. Numer. Methods Eng.*, Vol. 38, 1341-1360, 1995.
48. Bar-Yoseph, P., Moses, E., Zrahia, U. and Yarin, A.L., "Space-Time Spectral Element Methods for One-Dimensional Nonlinear Advection-Diffusion Problems", *J. Comput. Phys.*, Vol. 119, 62-74, 1995.
49. Ben-Tal, A., Bar-Yoseph, P. and Flashner, H., "Optimal Maneuver of a Flexible Arm by Space-Time Finite Element Method", *AIAA, J. Guidance, Control and Dynamics*, Vol. 18, No. 6, November-December 1995, 1459-1462.
50. Gelfgat, A.Y.*, Bar-Yoseph, P.Z. and Solan, A., "Stability of Confined Swirling Flow with and without Vortex Breakdown", *Journal of Fluid Mechanics*, Vol. 311, 1-36, 1996.
51. Ben-Tal, A., Bar-Yoseph, P.Z. and Flashner, H., "Space-Time Spectral Element Method for Optimal Slewing of a Flexible Beam", *Int. J. Numer. Methods Eng.*, Vol. 39, 3101-3121, 1996.
52. Gelfgat, A.Y.*, Bar-Yoseph, P.Z. and Solan, A., "Steady States and Oscillatory Instability of Swirling Flow in a Cylinder with Rotating Top and Bottom", *Phys. Fluids*, Vol. 8, 2614-2625, 1996.

53. Bar-Yoseph, P.Z., Fisher, D. and Gottlieb, O., "Spectral Element Methods for Nonlinear Temporal Dynamical Systems", *Computational Mechanics*, Vol. 18, 302-313, 1996.
54. Ben-David, D. and Bar-Yoseph, P.Z., "Spectral Strip Analysis of Composite Cylinders Subjected to Lateral Impact". *Computational Mechanics*, Vol. 19, 11-29, 1996.
55. Bar-Yoseph, P.Z. and Kryzhanovski, Yu., "Axisymmetric Vortex Breakdown for Generalized Newtonian Fluid Contained Between Rotating Spheres", *J. Non-Newtonian Fluid Mechanics*, Vol. 66, 145-168, 1996.
56. Bar-Yoseph, P.Z. and Kryzhanovski, Yu., "On the Validity of Power Law Models in the Prediction of Vortex Breakdown Phenomena", *Computational Fluid Dynamics Journal*, Vol. 5, 303-317, 1996.
57. Bar-Yoseph, P.Z., Fisher, D. and Gottlieb, O., "Spectral Element Methods for Nonlinear Spatio-Temporal Dynamics of an Euler-Bernoulli Beam", *Computational Mechanics*, Vol. 19, 136-151, 1996.
58. Bar-Yoseph, P.Z. and Moses, E., "Space-Time Spectral Element Methods for Unsteady Convection-Diffusion Equations" *Int. J. Numer. Methods Heat & Fluid Flow*, Vol. 7, 215-235, 1997.
59. Keller, I.*, Oron, A. and Bar-Yoseph, P.Z., "Regular and Irregular Regimes of Binary Fluid Convection Excited by Parametric Resonance", *Phys. Rev. E.*, Vol. 55, 1-4, 1997.
60. Kagan, P., Fischer, A. and Bar-Yoseph, P.Z., "New B-Spline Finite Element Approach for Geometrical Design and Mechanical Analysis", *Int. J. Numer. Methods Eng.*, Vol. 41, 435-458, 1998.
61. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z. and Yarin, A.L., "On Oscillatory Instability of Convective Flows at Low Prandtl Number", *ASME Trans., J. Fluids Eng.*, Vol. 119, 823-830, 1998.
62. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z. and Yarin, A.L., "Non-Symmetric Convective Flows in Laterally Heated Rectangular Cavities", *Int. J. Comput. Fluid Dynamics*, Vol. 11, 261-273, 1999.
63. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z. and Yarin, A.L., "Stability of Multiple Steady States of Convection in Laterally Heated Cavities", *J. Fluid Mech.*, Vol. 388, 315-334, 1999.
64. Naveh, Y., Bar-Yoseph, P.Z. and Halevi, Y., "Nonlinear Modeling and Control of a Unicycle", *Dynamics and Control J.*, Vol. 9, 279-296, 1999.
65. Priede, J., Cramer, A., Bojarevics, A., Gelfgat, A.Yu.*, Bar-Yoseph, P.Z., Yarin, A.L. and Gerbeth, G., "Experimental and Numerical Study of Anomalous Thermocapillary Convection in Liquid Gallium", *Phys. Fluids*, Vol. 11, 3331-3339, 1999.
66. Gelfgat A. Yu.*, Bar-Yoseph, P.Z. and Solan, A., Kowalewski, T.A., "An Axisymmetry-Breaking Instability of Axially Symmetric Natural Convection", *Inter. J. of Transport Phenomena*, Vol. 1, 173-190, 1999.

67. Gawinecki, J., Kacprzyk, P. and Bar-Yoseph, P.Z., "Initial-Boundary Value Problems for Some Coupled Nonlinear Parabolic Systems", *Zeitschrift für Analysis und ihre Anwendungen (ZAA)*, Vol. 19, 121-130, 2000.
68. Bar-Yoseph, P.Z., "Time Finite Element Methods for Initial Value Problems", *Applied Numerical Mathematics*, Vol. 33, 435-445, 2000.
69. Fischer, A. and Bar-Yoseph, P.Z., "Adaptive Mesh Generation Based on Multiresolution Quadtree Representation", *Int. J. Numer. Methods Eng.*, Vol. 48, 1571-1582, 2000.
70. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z., Solan, A., "Axisymmetric Breaking Instabilities of Natural Convection in a Vertical Bridgman Growth Configuration", *J. Crystal Growth*, Vol. 220, 316-325, 2000.
71. Wilson, E.A., Adler, D. and Bar-Yoseph, P.Z., "Thrust-Vectoring a Single Impinging Jet in a Crossflow", *Int. J. Turbo Jet Engines*, Vol. 17, 219-226, 2000.
72. Bar-Yoseph, P.Z., Mereu, S., Chippada, S. and Kalro, V., "Automatic Monitoring of Element Shape Quality in 2-D and 3-D Computational Mesh Dynamics", *Computational Mechanics*, Vol. 27, 378-395, 2001.
73. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z., Solan, A., "Effect of Axial Magnetic Field on Three-Dimensional Instability of Natural Convection in a Vertical Bridgman Growth Configuration", *J. Crystal Growth*, Vol. 230, 63-72, 2001.
74. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z., Solan, A., "Three-Dimensional Instability of Axisymmetric Flow in a Rotating Lid-Cylinder Enclosure", *J. Fluid Mech.*, Vol. 438, 363-377, 2001.
75. Gelfgat, A.Yu.* and Bar-Yoseph, P.Z., "On the Effect of an External Magnetic Field on Oscillatory Instability of Convective Flows in a Rectangular Cavity", *Phys. Fluids*, Vol. 13, 2269-2278, 2001.
76. Yarin, A.L., Gelfgat, A.Yu.*, Bar-Yoseph, P.Z., "Enhancement of Mass Transfer in a Two-Layer Taylor-Couette Apparatus with Axial Flow", *Int. J. Heat & Mass Transfer*, Vol. 45, 555-570, 2001.
77. Gelfgat, A.Yu., Yarin, A.L. and Bar-Yoseph, P.Z., "Three-Dimensional Instability of a Two-Layer Dean Flow", *Phys. Fluids*, Vol. 13, 3185-3195, 2001.
78. Wilson, E.A., Sherbaum, V., Adler, D. and Bar-Yoseph, P.Z., "Analytic and Empirical Analysis of Thrust-Vectoring Engine/Airframe Integration at High AoA", *Int. J. Turbo Jet Engines*, Vol. 18, 289-297, 2001.
79. Wilson, E.A., Adler, D. and Bar-Yoseph, P.Z., "Compressible Flow with Area Change and Friction as a Tool for Determining Inlet Performances", *Int. J. Turbo Jet Engines*, Vol. 18, 187-199, 2001.

80. Wilson, E.A., Adler, A. and Bar-Yoseph, P.Z., "Geometric Evaluation of Axisymmetric Thrust-Vectoring Nozzles for Aerodynamic Performance Predictions", *AIAA J. Propulsion and Power*, Vol. 18, 712-716, 2002.
81. Wilson, E.A., Adler, D. and Bar-Yoseph, P.Z., "Nozzle Performance Modeling", *AIAA J. Propulsion and Power*, Vol. 40, 1331-1338, 2002.
82. Wilson, E.A., Adler, D. and Bar-Yoseph, P.Z., "Thrust-Vectoring Nozzle Performance Modeling", *AIAA J. Propulsion and Power*, Vol. 19, 39-47, 2003.
83. Gelfgat, A.Yu.*, Yarin, A.L. and Bar-Yoseph, P.Z., "Dean Vortices - Induced Enhancement of Mass Transfer Through an Interface Separating Two Immiscible Liquids", *Phys. Fluids*, Vol. 15, 330-347, 2003. Also, Editor's Choice, *Virtual Journal of Biological Physics Research*, January 15, 2003.
84. Gelfgat, A.Yu.*, Yarin, A.L. and Bar-Yoseph, P.Z., "Convection-Induced Enhancement of Mass Transfer Through an Interface Separating Two Immiscible Liquids in a Two-Layer Horizontal Annulus", *Phys. Fluids*, Vol. 15, 790-800, 2003.
85. Kagan, P., Fischer, A. and Bar-Yoseph, P.Z., "Mechanically Based Design: Adaptive Refinement for B-Spline Finite Element", *Int. J. Numer. Methods Eng.*, Vol. 57, 1145-1175, 2003.
86. Erenburg, V.*, Gelfgat, A.Yu.*, Kit, E., Bar-Yoseph, P.Z. and Solan, A., "Multiple States, Stability and Bifurcations of Natural Convection in a Rectangular Cavity with Partially Heated Vertical Walls", *J. Fluid Mech.*, Vol. 492, 63-89, 2003.
87. Gelfgat, A.Yu.* and Bar-Yoseph, P.Z., "Multiple Solutions and Stability of Confined Convective and Swirling Flows – a Continuing Challenge", *Int. J. Numer. Methods Heat & Fluid Flow*, Vol. 14, 213-241, 2004. (Invited Paper)
88. Salalha, W., Zussman, E. and Bar-Yoseph, P.Z., "Analytical and Experimental Investigation of Flip-Chip Packaging for MEMS Applications", *ASME Trans. J. Electronic Packaging*, Vol. 126, 48-51, 2004.
89. Suponitsky, V., Cohen, J. and Bar-Yoseph, P.Z., "Numerical Investigation of the Evolution of a Localized Vortex Distribution in Uniform Shear Flow", *AIAA J.*, Vol. 42, 1122-1131, 2004.
90. Rubinov, A.*, Erenburg, V.*, Gelfgat, A.Yu.*, Kit, E., Bar-Yoseph, P.Z. and Solan, A., "Three-Dimensional Instabilities of Natural Convection Flow in a Vertical Cylinder with Partially Heated Sidewall", *ASME J. Heat Transfer*, Vol. 126, 586-599, 2004.
91. Gelfgat, A.Y.*, Yarin, A.L., Bar-Yoseph, P.Z., Graham, M.D. and Bai, G., "Numerical Modeling of Two-Fluid Taylor-Couette with Deformable Capillary Liquid-Liquid Interface", *Phys. Fluids*, Vol. 16, 4066-4074, 2004.
92. Gelfgat, A.Yu.*, Rubinov, A.*, Bar-Yoseph, P.Z. and Solan, A., "Numerical Study of Three-Dimensional Instabilities in a Hydrodynamic Model of Czochralski Crystal Growth", *J. Crystal Growth*, Vol. 275, 7-13, 2005.

93. Suponitsky, V., Cohen, J. and Bar-Yoseph, P.Z., "The Generation of Streaks and Hairpin Vortices from a Localized Vortex Disturbance Embedded in Unbounded Uniform Shear Flow", *J. Fluid Mech.*, Vol. 535, 65-100, 2005.
94. Gelfgat, A.Yu.*, Rubinov, A.*, Bar-Yoseph, P.Z. and Solan, A., "On the Three-Dimensional Instability of Thermocapillary Convection in Arbitrary Heated Floating Zones", *Fluid Mechanics and Material Processing* Vol.1, 21-31, 2005.
95. Rosenstein, Y. and Bar-Yoseph, P.Z., "Three Dimensional Instabilities in Czochralski Process of Crystal Growth", *J. Crystal Growth*, Vol. 305, 185-191, 2007.
96. Sharon, N., Bar-Yoseph, P.Z., Bormusov, E., and Dovrat, A., "Simulation of Heat Exposure and Damage to the Eye Lens in a Neighborhood Bakery", *Experimental Eye Research*, Vol. 87, 49-55, 2008.
97. Holdstein, Y., Podshivalov, L., Fischer, A., and Bar-Yoseph, P.Z., "A Neural Network Technique for Re-meshing of Bone Micro-Structure", *Int. J. of Shape Modeling*, Vol. 14, No. 1, 1-14, 2008.
98. Podshivalov, L., Holdstein, Y., Fischer, A., and Bar-Yoseph, P.Z., "Towards a Multi-scale Computerized Bone Diagnostic System: 2D Micro-scale Finite Element Analysis", *Commun. Numer. Meth. Engng*, Vol. 25, 733-749, 2009.
99. Ouaknin, G. and Bar-Yoseph, P.Z., "Stochastic Collective Movement of Cells and Fingering Morphology: No Maverick Cells", *Biophysical Journal*, Vol. 97(7), 1811-1821, 2009 + Supporting Material
[http://www.cell.com/biophysj/supplemental/S0006-3495\(09\)01196-5](http://www.cell.com/biophysj/supplemental/S0006-3495(09)01196-5)
100. Moiseyev, G. and Bar-Yoseph, P.Z., "No Need for Particle Tracing: From Accumulating Fluid Properties to Novel Blood Coagulation Model in the Lattice Boltzmann Method", *Journal of Biomechanics*, Vol. 43, 864-870, 2010.
101. Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "Multiresolution 2D Geometric Meshing for Multiscale Finite Element Analysis of Bone Micro-Structures", *Journal of Virtual and Physical Prototyping*, Vol. 5, 33-43, 2010.
102. Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "3D hierarchical geometric modeling and multiscale FE analysis as a base for individualized medical diagnosis of bone structure", *BONE*, 48 (4), -693-703, 2011.
103. Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "Multiscale FE method for analysis of bone micro-structures", *Journal of the Mechanical Behavior of Biomedical Materials*, 4(6), 888-899, 2011.
104. Moiseyev, G., Givli, S. and Bar-Yoseph, P.Z., "Fibrin Polymerization in Blood Coagulation-A Statistical Model", *Journal of Biomechanics*, 46, 26-30, 2013.
105. Trapper, P.A. and Bar-Yoseph, P.Z., "Space time discontinuous finite element method based on a new generalized flux vector splitting for multi-dimensional nonlinear hyperbolic systems", *Computer Modeling in Engineering & Sciences*, 103, 19-47, 2014.

106. Rabin, A., Palacio, D., Saqib, N., Bar-Yoseph, P., Wiess, D. and Afifi, R. "Aortic Aneurysms and Dissections: Unmet Needs from Physicians and Engineers Perspectives, *Journal of Biomechanics*, 122, 110461, 2021.
107. Brietman, N.I., Bar-Yoseph, P.Z. and Suponitsky, V., "Nonlinear Liquid Sloshing Dynamics: Post-processing of Conventional Finite Element Solutions by Digital Filters", *Ocean Engineering*, 249, 110837, 2022.

Review papers:

108. Moiseyev, G. and Bar-Yoseph, P.Z., "Computational Modeling of Thrombosis as a Tool in the Design and Optimization of Vascular Implants", *Journal of Biomechanics*. 46:2, 18 January 2013, 248-252.
109. Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "On the Road to Personalized Medicine: Multiscale Computational Modeling of Bone Tissue", *Archives Computational Methods in Engineering*, 21 (4), 399-479, 2014. Invited review paper.

Book review:

1. *Computational Fluid Dynamics Review 1995*, Edited by M. Hafez and K. Oshima, Wiley. (*Int. J. Multiphase Flow*, Vol. 23, No. 5, 1003-1004, 1997).

Chapters in books:

1. Bar-Yoseph, P., Solan, A. and Blech, J. J., "Smoothing Techniques Applied to the Finite Element Solution of Navier-Stokes Equations in Rotating Flow", Chapter 5 in *Computer Methods in Fluids*, (Taylor, C. and Morgan, E., eds.), Pentech Press, 135-158, 1979.
2. Bar-Yoseph, P. and Israeli, M., "Asymptotic Finite Element Method for boundary Value Problems", Chapter 7 in *Recent Advances in Numerical Methods in Fluids - Vol. V*, "Numerical Techniques for Fluid Flows", (Taylor, C., Johnson, J.A., and Smith, R. eds.), Pineridge Press, Swansea, 187-218, 1986.
3. Roesner, K.G., Viehl, M., Bar-Yoseph, P. and Solan, A., "Asymptotic Solutions of the Navier-Stokes Equations for Compressible Fluids at Low Mach Numbers", in *Finite Approximations in Fluid Mechanics II, Notes on Numerical Fluid Mechanics*, Vol. 25, Vieweg, Braunschweig, 326-336, 1989.
4. Bar-Yoseph, P., "Computational Investigation of Confined Rotating Flows – A Continuing Challenge", Chapter in *Computational Fluid Dynamics*, (Leutloff, D. and Srivastava, R.C. eds.), Springer-Verlag, Berlin, 257-267, 1995.

5. Bar-Yoseph, P.Z., "Novel Spectral and Finite Element Methods for Unsteady Heat Transfer Problems", Chapter in *Advances in Computational Heat Transfer*, (de Vahl Davis, G. and Arinc, F., eds.), Begell House, New York, 1998.
6. Podshivalov, L., Holdstein, Y., Fischer, A. and Bar-Yoseph, P.Z., "Towards a multi-scale computerized bone diagnostic system: 2D micro-scale finite element analysis" in the book *Computer Aided Bio-manufacturing*, Wiley Reference Collection in Materials Science, (edited by P. Calvert and R. Narayan), ISBN: 978-3-527-40906-8, pp. 8-31, 2011.
7. Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "Patient-specific diagnosis and Visualization of bone micro-structures. *Patient-Specific Modeling in Tomorrow's Medicine* (edited by A. Gefen). ISBN 978-3-642-24617-3, Wiley-VCH, Berlin, pp. 27-52, 2012. doi:10.1007/8415_2011_88

REPORTS:

1. Bar-Yoseph, P. and Blech, J.J., "Dynamic Characteristic of Circumferentially Fed Journal Bearings: I. Continuous Lubricant Films, TME 266, Technion, Haifa, 1976.
2. Bar-Yoseph, P. and Blech, J.J., "Dynamic Characteristic of Circumferentially Fed Journal Bearing: II. Lubricant Film Possessing a Vapor Region, TME 269, Technion, Haifa, 1976.
3. Bar-Yoseph, P. and Blech, J.J., "The Stability of a Flexible Rotor Supported by Circumferentially Fed Journal Bearing: I. Continuous Lubricant Film", TME 275, 1976.
4. Bar-Yoseph, P. and Blech, J.J., "The Stability of a Flexible Rotor Supported by Circumferentially Fed Journal Bearings: II. Lubricant Film Possessing a Vapor Region", TME 297, Technion, Haifa, 1976.
5. Bar-Yoseph, P. and Goldan, M., "Calculation of the Geometrical Imperfection (Out-Of-Roundness) of a Cylindrical Pressure Vessel", Ship Engineering Program, Faculty of Mechanical Engineering, Technion, Haifa, 1982 (submitted to the Israel Navy).
6. Ishai, O., Yaniv, G. and Bar-Yoseph, P., "Durability of Structural Adhesively Bonded Systems", Report for United States Army under Contract No. DAJA 45-84-C-0050, December 1985.
7. Ishai, O., Lifshitz, J. Bar-Yoseph, P. and Avrashi, J., "Damage Tolerance of Composite Materials", Annual Report for the Research and Development Branch, Israel Ministry of Defence, April 1989.
8. Altus, E. and Bar-Yoseph, P., "Dynamic Response of a Rigid Vehicle Moving on a Bridge", Technion, Haifa, 1991 (submitted to the Israel Military Industries).
9. Bar-Yoseph, P. and Fletcher, C.A.J., "On Continuum Modelling of Gas-Solid Flows with Application to Erosion Prediction", Department of Mechanical Engineering, The University of Sydney, 1991 (Report submitted to the Scientific Services Group of the Electricity Commission of New South Wales - Australia).

10. Bar-Yoseph, P. and Zrahia, U., "Mechanical-Thermal Design of Ceramic Coating in Internal Combustion Engines Using Space-Time Finite Elements", Technion, Haifa, 1992. (Report submitted to the Col. Asher Peled Memorial Fund.)
11. Bar-Yoseph, P., "Finite Element Procedures in Engineering Analysis", Vol. 1 (in Hebrew), Faculty of Mechanical Engineering, Technion, Haifa, 1992.
12. Arkadyev, A., Bar-Yoseph, P. and Adler, D., "Computational Fluid Dynamics in Turbomachinery", Technion, Haifa, 1994. (Final Report submitted to the Ministry of Science and Technology, State of Israel.)
13. Bar-Yoseph, P.Z. and Ohayon, I., "Finite Element Analysis of the 5200/5100 Model Structure", Technion, Haifa, January 1996, (Report submitted to KLA-ISRAEL).
14. Bar-Yoseph, P.Z. and Ohayon, I., "Finite Element Analysis for 300 mm Wafer Structures", Technion, Haifa, October 1996, (Report submitted to KLA-ISRAEL).
15. Fisher, D. and Bar-Yoseph, P.Z., "Finite Element Comparative Analysis of the Stresses in Various Artificial Polyethylene Patellae", Technion, Haifa, December 1996. (Final Report submitted to the Orthopedic Department, Bnei Zion Hospital, Haifa.)
16. Bar-Yoseph, P.Z., "On Conservative Mesh Projection and Moving Mesh Methods", submitted to Fluent Inc., USA, February 2000.
17. Rubinov, A., Gelfgat, A.Yu., Bar-Yoseph, P.Z. and A. Solan, "Three-Dimensional Instabilities in Floating Zone Liquid Bridges under Microgravity Conditions", Final Report submitted to the Asher Space Research Institute, Technion, October 2002.
18. Beletsky, I., Bar-Yoseph, P.Z. and Beyar, R., "Drug Distribution Analysis for Drug Eluting Stent Applications to an Artery with an Axisymmetry Plaque", Accepted to ASME Journal of Bioengineering but was not published because the publisher's deadline was missed. March 2008.
19. L. Podshivalov, A. Fischer. P. Z. Bar-Yoseph, Domain Decomposition Techniques as a base for Multi-scale FE Analysis of the Bone Tissue, *Hebrew Bulletin of the Israel Association for Computational Methods in Mechanics*, 2009 (5 pages).

CONFERENCES:

Plenary or invited talks:

1. Bar-Yoseph, P., "Standard and Asymptotic Finite Element Methods for Incompressible Viscous Flows", *ASME 1982 Winter Annual Meeting*, Phoenix, Arizona.
2. Bar-Yoseph, P., "Finite Element Analysis of Rotating Flow Problems", *4th Int. Conf. on Finite Element in Flow Problems*, University of Tokyo, 1982.
3. Bar-Yoseph, P. and Avrashi, J., "Variational - Asymptotic Formulation for 3-D Stress Analyses of Free Edge Problems in Laminated Composites", *Int. Conf. on Computational Engineering Science (ICES' 88)*, Atlanta, Georgia, 10-14 April 1988.

- *4. Bar-Yoseph, P., "Multiple Flow Modes and Vortex Breakdown Phenomena in Rotating Systems", *5th Int. Symp. on Computational Fluid Dynamics*, Sendai, Japan, Aug. 31 – Sept. 3, 1993.
- †5. Bar-Yoseph, P.Z., "Novel Space-Time Spectral Element Methods for Unsteady Heat Transfer Problems", *Int. Symp. on Advances in Computational Heat Transfer*, Cesme, Turkey, May 26-30, 1997, 53-67.
- *6. Bar-Yoseph, P.Z., "Spectral Elements for Nonlinear Modeling and Control in Structural Dynamics", *European Conf. on Computational Mechanics (ECCM '99)*, Munich, August 31 - September 3, 1999.
- *7. Bar-Yoseph, P.Z., "Novel Computational Mesh Dynamic Algorithms for Fluid-Structure Interaction and Moving Boundaries Problems", *28th Israel Conf. on Mechanical Engineering*, Ben Gurion University of the Negev, Beer-Sheva, June 14-15, 2000.
- *8. Bar-Yoseph, P.Z., "Three-Dimensional Instabilities of Natural Convection and Swirling Flows", *Fifth World Congress on Computational Mechanics (WCCM V)*, Vienna, Austria, July 7-12, 2002.
- *9. Bar-Yoseph, P.Z., "Bifurcation and Stability Analysis for Crystal Growth Processes", *29th Israel Conference on Mechanical Engineering*, Technion, Haifa, May 12-13, 2003.
- *10. Bar-Yoseph, P.Z., "Stability and Bifurcation Analyses for Crystal Growth Processes", *12th Int. Conf. on Computational & Experimental Engineering & Sciences (ICCES '04)*, Madeira, Portugal, July 26-29, 2004.
11. Bar-Yoseph, P.Z., "New B-Spline Finite Element Approach for Integrated Mechanically Based Computer Aided Engineering", *The 2004 Israel-Italy Bi-National Conference on Measurements and Uncertainty Evaluation in Coordinate Measuring Machines and Scanners and Their Implication on Design and Reverse Engineering*, November 29-30, 2004, Technion, Haifa.
12. Bar-Yoseph, P.Z., "Time Finite element Methods for Initial Value Problems", *Symposium in honor of Prof. M. Baruch*, Technion, October 26, 2005.
13. Bar-Yoseph, P.Z., "On Discontinuous Galerkin Methods", Special Tutorial, *20th Israel Symposium on Computational Mechanics (ISCM-20)*, Tel Aviv University, March 23, 2006.
14. Bar-Yoseph, P.Z., "NURBS Finite Element Method – A Natural Unified Approach for Geometrical Design and Mechanical Analysis", *Int. Symposium on LCE – The Driving Force in Design and Manufacturing Evolution*, Technion, June 6, 2007.
15. L. Podshivalov, A. Fischer, P.Z. Bar-Yoseph, "2D Multi-resolution domain-based meshing for multiscale FE analysis of bone micro-structures", *SEECCM2009- South East European Conference on Computational Mechanics*, Island of Rhodes, Greece, June 2009.
16. Y. Holdstein, A. Fischer, L. Podshivalov, P. Bar-Yoseph, "Volumetric texture synthesis of bone micro-structure as a base for scaffold design", *IEEE International Conference on Shape Modeling and Applications*, Beijing, China, June 2009.

17. L. Podshivalov, A. Fischer, P. Bar-Yoseph, "Multiresolution Geometric Representation for Multiscale FE Analysis of Bone Micro-Structures", *Int. Conference on Tissue Engineering (ICTE '09)*, Leiria, Portugal, July 2009.
18. L. Podshivalov, A. Fischer, P. Bar-Yoseph, "3D Multiscale Finite Element Analysis of Bone Micro-Structures", *Fourth European Conference on Computational Mechanics - ECCM 2010*, Paris, France, May 2010.
19. A. Fischer, L. Podshivalov, P.-Z. Bar-Yoseph, "Physically based multiscale modeling of bone micro-structures for Patient-specific diagnosis and visualization", Germany-Israel Umbrella Symposium on "Modeling and Simulation with emphasis on high performance computing and grid computing", RWTH Aachen University, Germany, June 2011.
20. Moiseyev, G. and Bar-Yoseph, P.Z., "Mesoscopic Modelling of Hemodynamically Induced Blood Coagulation", Special Session on *Thrombosis and Hemodynamics II: Multiscale Modeling I* (organized by D. Bluestein and M. King), *7th World Congress of Biomechanics*, July 6-11, 2014.
21. P.Z. Bar-Yoseph, Moiseyev, G., Markovits, M. "Modeling and Computational Simulation of Hemodynamically Induced Atherosclerosis", *14th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE 2016)*, Tel-Aviv, September 20-22, 2016. www.cmbbe2016.com

(*keynote lecture, †plenary lecture)

Refereed Papers in Conference Proceedings:

1. Bar-Yoseph, P., Blech, J.J. and Solan, A., "Upwind Schemes for the Finite Element Solution of the Navier-Stokes Equations in Rotating Flow", *1st Int. Conf. on Num. Meth. in Laminar and Turbulent Flow*, (Taylor, C., Morgan, K. and Brebbia, C.A., eds.), Wiley, 121-132, 1979.
2. Bar-Yoseph, P., "A Comparison of Various Finite Element Schemes for the Solution of the Navier-Stokes Equations in Rotating Flow", *3rd Int. Conf. on Finite Element in Flow Problems*, Banff Center, Banff, Alberta, Canada, 1980, **1**, 132-142.
3. Bar-Yoseph, P., "Finite Element Analysis of Rotating Flow Problems", *4th Int. Conf. on Finite Element in Flow Problems*, University of Tokyo, North-Holland, 1982, 185-192.
4. Bar-Yoseph, P., Ostronov, A. and Israeli, M., "Asymptotic Finite Element Method for boundary Layer Problems", *3rd Int. Conf. on Numer. Methods in Laminar and Turbulent Flow*, University of Washington, Seattle, August 8-11, 1983, 126-133.
5. Bar-Yoseph, P. and Olek, S., "Finite Element Analysis of Heat Transfer in Rotating Compressible Flow Over an Infinite Disk", *3rd Int. Conf. on Numer. Methods in Thermal Problems*, University of Washington, Seattle, August 2-5, 1983, 457-465.
6. Israeli, M. and Bar-Yoseph, P., "Numerical Solution of Multi-Dimensional Diffusion-Convection Problems by Asymptotic Corrections", *5th GAMM Conf. on Numerical Methods in Fluids Mechanics*, Rome, October 5-7, 1983, 131-136.

7. Bar-Yoseph, P., Roesner, K. G. and Seelig, S., "Flow in an Eccentric Spherical Gap", *Sixth Workshop on Gases in Strong Rotation*, 1985, Tokyo, Japan.
8. Berkovitz, E., Riech, Y and Bar-Yoseph, P., "Relation between the Superstructure of a Ship and Its Length", *19th Israel Conf. on Mechanical Engineering*, Beer-Sheva, June 19-20, 1985, 3.5.1 1-4.
9. Bar-Yoseph, P. and Avrashi, J., "Variational - Asymptotic Formulation for 3-D Stress Analyses of Free Edge Problems in Laminated Composites", *Int. Conf. on Computational Engineering Science (ICES' 88)*, Atlanta, Georgia, April 10-14, 1988, Springer Verlag, Vol. 2, 37.VIII, 1-4.
10. Bar-Yoseph, P., Solan, A. and Roesner, K.G., "Numerical Simulation and Experimental Verification of Cavity Flows", *Oberwolfach Tagung: The Navier Stokes Equations: Theory and Numerical Methods*, 18-24 September, 1988. *Lecture Notes in Mathematics*, Vol. 1431, Springer Verlag, 229-235.
11. Avrashi, J. and Bar-Yoseph, P., "Mixed Hybrid Finite Strip Analysis of a Circular Damage in Composite Laminate Plate", *Second World Congress on Computational Mechanics*, Stuttgart, August 27-31, 1990, 442-444.
12. Perry, B., Bar-Yoseph, P. and Rosenhouse, G., "On the Generation and Application of a New Rectangular Hybrid Stress Element for Analysing Folded Plates Structure", *Second World Congress on Computational Mechanics*, Stuttgart, August 27-31, 1990, 577-581.
13. Bar-Yoseph, P., Solan, A. and Roesner, K.G., "Numerical and Experimental Analysis of Secondary Flows in Rotating Systems", *The Second Japan-Soviet Union Symposium on Computational Fluid Dynamics*, Tsuhuba, August 27-31, 1990, 196-203.
14. Bar-Yoseph, P. Solan, A. and Roesner, K.G., "Sekundarströmung in Axialsymmetrischen Hohlräumen", *Z. Angew. Math. Mech. (ZAMM)*, Vol. 70, T442-444, 1990.
15. Bar-Yoseph, P. Solan, A. and Roesner, K.G., "Zeitperiodische Lösungen der Navier-Stokes-Gleichungen im Kugelspalt", *Z. Angew. Math. Mech. (ZAMM)*, Vol. 71, T409-410, 1991.
16. Bar-Yoseph, P., Roesner, K.G. and Uellner, St., "Computational and Experimental Results on Time-Dependent Rotating Fluid Flows in a Rectangular Duct", *4th Int. Symp. on Computational Fluid Dynamics*, Davis, September 9-12, 1991, 73-78.
17. Moses, E., Yarin, A. and Bar-Yoseph, P., "On the prediction of Knocking in Spark Ignition Engines", *24th Israel Conf. on Mechanical Engineering*, Haifa, May 18-19, 1992, 1.4.1 1-3.
18. Bar-Yoseph, P. Even-Sturlesi, G., Arkadyev, A.*, Solan, A. and Roesner, K.G., "Mixed-Convection of Rotating Fluids in Spherical Annuli", *13th Int. Conf. Numer. Meth. Fluid Dyn.*, Rome, July 6-10, 1992, *Lecture Notes in Physics*, (M. Napolitano and F. Sabetta, eds.), Springer-Verlag, 1992, Vol. 414, 381-385 .

19. Bar-Yoseph, P., "Multiple Flow Modes and Vortex Breakdown Phenomena in Rotating Systems", *5th International Symposium on Computational Fluid Dynamics*, Sendai, Japan, August 31 - September 3, 1993, **1**, 56-63.
20. Ben-Tal, A., Bar-Yoseph, P. and Flashner, H., "Optimal Maneuver of a Flexible Arm by Space- Time Finite Elements", *25th Conf. on Mechanical Engineering*, Haifa, May 25-26, 1994, 193-195.
21. Moses, E., Yarin, A. and Bar-Yoseph, P., "Computer Modeling of Blended Fuel Operation of Spark Ignition Engines ", *25th Conf. on Mechanical Engineering*, Haifa, May 25-26, 1994, 274-276.
22. Arkadyev, A., Adler, D. and Bar-Yoseph, P., "TBROW - a CFD Tool for Turbomachinery Design", *25th Conf. on Mechanical Engineering*, Haifa, May 25-26, 1994, 687-689.
23. Ben-David, D. and Bar-Yoseph, P., "Spectral Strip Analysis of Composite Cylinders Subjected to Lateral Impact", *1st Int. Conf. on Composite Engineering (ICCE/I)*, New Orleans, August 25-28, 1994, 623-624.
24. Bar-Yoseph, P. and Kryzhanovski, Yu., "On the Validity of Power Law Models in the Prediction of Vortex Breakdown Phenomena", *6th Int. Symposium on Computational Fluid Dynamics*, held in Lake Tahoe, Nevada, September 4-8, 1995, 29-34.
25. Gelfgat, A.Yu.*, Bar-Yoseph, P. and Solan, A., "Numerical Investigation of a Confined Swirling Flow in a Cylinder with Rotating Top and Bottom by the Galerkin Spectral Method", *6th International Symposium on Computational Fluid Dynamics*, held in Lake Tahoe, Nevada, September 4-8, 1995, 355-360.
26. Bar-Yoseph, P. and Moses., E., "Spectral Element Methods for Parabolic and Hyperbolic Problems", *6th International Symposium on Computational Fluid Dynamics*, held in Lake Tahoe, Nevada, September 4-8, 1995, 35-40.
27. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z. and Solan, A., "On Steady and Unsteady Patterns in Confined Swirling Flows", *36th Israel Annual Conference on Aerospace Sciences*, Technion, Haifa, February 21-22, 1996, 12-23.
28. Gelfgat, A., Bar-Yoseph, P.Z. and Yarin, A., "Oscillatory Instability of Buoyancy Convection in Long Horizontal Cavities", *26th Conference on Mechanical Engineering*, Haifa, May 21-22, 1996, 45-47.
29. Kagan, P., Fischer, A. and Bar-Yoseph, P.Z., "Novel B-Spline Finite Element Approach Toward Unification of Geometrical Design and Mechanical Analysis", *26th Conference on Mechanical Engineering*, Haifa, May 21-22, 1996, 22-25.
30. Keller, I., Bar-Yoseph, P.Z. and Oron, A., "On the Resonance Phenomenon in Soret-Driven Convection in a Horizontal Layer of Binary Mixture under Vertical Vibration", *26th Conference on Mechanical Engineering*, Haifa, May 21-22, 1996, 270-272.
31. Fischer, A., Kagan, P., Bar-Yoseph, P.Z., Shpitalni, M., "A B-Spline Finite Element Approach for Designing and Analyzing Sculptured Objects", *Fifth IFIP WG5.2 Workshop on Geometric Modeling in CAD*, May 1996, Virginia, USA. Appears also in

- Product Modeling for Computer Integrated Design and Manufacture*, M. Pratt, R.D. Sriram, M.J. Wozny, Editors, North Holland, 1996, 129-138.
32. Bar-Yoseph, P.Z. and Moses, E., "Adaptive Space-Time Spectral Element Methods for Unsteady Fluid Dynamics Problems", *Numerical Developments in CFD*, ASME Fluids Engineering Division, Summer Meeting, San Diego, California, July 7-11, 1996.
 33. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z. and Solan, A., "Confined Swirling Flow Simulation Using Spectral Galerkin and Finite Volume Methods", *Vortex Flows and Vortex Methods*, ASME Fluids Engineering Division, Summer Meeting, San Diego, California, July 7-11, 1996, FED-Vol. 238, 105-112.
 34. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z. and Yarin, A., "Numerical Investigation of Hopf Bifurcation Corresponding to Transition from Steady to Oscillatory State in a Confined Convective Flow", *Unsteady Flows*, ASME Fluids Engineering Division, Summer Meeting, San Diego, California, July 7-11, 1996, FED - Vol. 237, 369-374.
 35. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z., Yarin, A.L., "Patterns of Bifurcating Convective Flows in Long Horizontal Cavities", *Int. Symposium on Advances in Computational Heat Transfer*, Cesme, Turkey, May 26-30, 1997, 403-410.
 36. Bar-Yoseph, P.Z., "Novel Space-Time Spectral Element Methods for Unsteady Heat Transfer Problems", *Int. Symposium on Advances in Computational Heat Transfer*, Cesme, Turkey, May 26-30, 1997, 53-67.
 37. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z. and Yarin, A.L., "Numerical Investigation of Bifurcating Convective Flows in Long Horizontal Cavities", *27th Israel Conference on Mechanical Engineering*, Haifa, 19-20 May 1998, 133-135.
 38. Ohayon, I. and Bar-Yoseph, P.Z., "Expert System for Dynamic Analysis of Printed Circuit Boards", *27th Israel Conference on Mechanical Engineering*, Haifa, 19-20 May, 1998, 142-144.
 39. Plat, H. and Bar-Yoseph, P.Z., "Space-Time Spectral Elements and Control of a Flexible Structure", *27th Israel Conference on Mechanical Engineering*, Haifa, 19-20 May 1998, 683-685.
 40. Kligerman, Y., Ravve, I. and Bar-Yoseph, P.Z., "Space-Time Spectral Elements for Dynamic Analysis of Plates Based Upon the Reissner-Mindlin Theory", *27th Israel Conference on Mechanical Engineering*, Haifa, 19-20 May 1998, 620-622.
 41. Ravve, I., Kligerman, Y. and Bar-Yoseph, P.Z., "Finite Elements for Nonlinear Spatio-Temporal Dynamics of a Twisted Helicopter Blade", *27th Israel Conference on Mechanical Engineering*, Haifa, 19-20 May 1998, 201-203.
 42. Wilson, E.A., Adler, D. and Bar-Yoseph, P.Z., "Axisymmetric Thrust-Vectoring Nozzle Performance Prediction", *27th Israel Conference on Mechanical Engineering*, Haifa, 19-20 May 1998, 145-147.

43. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z. and Solan, A., "Stability of Axisymmetric Convective Flows with Respect to Three-Dimensional Perturbations", *27th Israel Conference on Mechanical Engineering*, Haifa, 19-20 May, 1998, 315-317.
44. Fischer, A., Bar-Yoseph, P.Z. and Hod, Y., "Visualization of Space-Time Finite Elements Based on Multiresolution Quadtree", *IACM - Fourth World Congress on Computational Mechanics (WCCM)*, Buenos Aires, 29 June - 2nd July 1998. Appears in *Computational Mechanics, New Trends and Applications*, (Idelsohn, S., Oñate, E. and Dvorkin, E., Eds). CIMNE, Barcelona, Spain 1998, (CD, 16 pages).
45. A. Fischer*, P. Bar-Yoseph, Y. Hod "Real-Time Mesh Generation based on Multi-resolution Method", *Israel-Korea Bi-National Symposium on "New Themes in Computer Aided Geometric Modeling"*, Tel-Aviv, Israel, February, 1998.
46. Gelfgat, A.Yu.*, Bar-Yoseph, P.Z. and Yarin, A.L., "Multiplicity and Stability of Steady Convective Flows in Laterally Heated Cavities", *11th Int. Heat Transfer Conference*, Kyongju, Korea, 23-28 August, 1998, Vol. 3, 435-440.
47. Kagan, P., Fischer, A. and Bar-Yoseph, P.Z., "Integrated Mechanically Based CAE System", *5th Symposium on Solid Modelling and Applications*, Ann-Arbor, Michigan, June 9-11, 1999, ACM Press, 23-30.
48. Bar-Yoseph, P.Z. "Time and Space-Time Spectral Element Methods for Analysis and Control of Dynamics Systems", *European Conference on Computational Mechanics, ECCM '99*, Munchen, Germany, August 31 - September 3, 1999 (CD, 20 pages).
49. Rinat, Y. and Bar-Yoseph, P.Z., "Space-Time Spectral Elements for Nonlinear Static and Dynamics Modeling of Piezoelastic Composite Laminated Plates", *European Conference on Computational Mechanics in Applied Sciences and Engineering, ECCOMAS 2000*, Barcelona, Spain, September 11-14, 2000 (CD, 20 pages).
50. Kagan, P., Fischer, A. and Bar-Yoseph, P.Z., "Mechanical Based Design: Refinement of B-Spline Finite Elements", *Shape Modelling Conference*, Genoa, Italy, May 7-11, 2001.
51. Gelfgat, A.Yu.* and Bar-Yoseph, P.Z. "Multiple Solutions and Stability of Confined Convective and Swirling Flows", *Fifth World Congress on Computational Mechanics (WCCM V)*, Vienna, Austria, July 7-12, 2002 (CD, 20 pages).
52. Erenburg, V., Gelfgat, A.Yu.*, Kit, E., Bar-Yoseph, P.Z. and Solan, A., "Natural Convection in a Rectangular Cavity with Piece-Wise Heated Vertical Walls: Multiple States, Stability and Bifurcations", *12th Int. Heat Transfer Conference*, Grenoble, France, August 18-23, 2002.
53. Suponitski, V., Cohen, J. and Bar-Yoseph, P.Z., "The Development of a Localized Vortex Disturbance in Uniform Shear Flow – The Effect of the Initial Amplitude", *Israel Annual Conference on Aerospace Sciences*, Tel-Aviv and Haifa, 19-20 February, 2003 (CD, 20 pages).
54. Suponitski, V., Cohen, J. and Bar-Yoseph, P.Z., "The Development of a Localized Vortex Disturbance in Uniform Shear Flow – The Effect of the Initial Orientation", *29th*

- Israel Conference on Mechanical Engineering*, Technion, Haifa, Israel, 12-13 May, 2003 (CD, 39 pages).
55. Bar-Yoseph, P.Z. and Gelfgat, A.Yu.*, "Stability and Bifurcation Analyses for Crystal Growth Processes", *12th International Conference on Computational Methods in Engineering and Sciences (ICCES'04)*, Madeira, Portugal, 25-29 July 2004, 976-981.
 56. Cohen, J., Suponitsky, V., Bar-Yoseph, P.Z., Svizher, A. and Philip, J., "Localized Disturbances and Their Relation to Turbulent Shear Flow", *36th AIAA Fluid Dynamics Conference*, San Francisco, CA, June 5-8, 2006 (paper no. AIAA 2006-3226), 20 pp.
 57. Rosenstein, Y. and Bar-Yoseph, P.Z., "Hydrodynamic Instabilities in Czochralski Process of Crystal Growth – The Effect of Varying the Seed to Crucible Radii Ratio", *Second International Symposium on Instability and Bifurcations in Fluid Dynamics (BIFD 2006)*, Copenhagen, August 15-18, 2006. *J. of Physics: Conference Series*, 64 (2207), 012014, 25 pp. <http://www.iop.org/EJ/toc/1742-6596/64/1>
 58. Rosenstein, Y. and Bar-Yoseph, P.Z., "Hydrodynamic Instabilities in Czochralski Process of Crystal Growth", *European Conference on Computational Fluid Dynamics (ECCOMAS CFD06)*, Egmond aan Zee, The Netherlands, September 5-8, 2006.
 59. Podshivalov, L., Fischer, A., Bar-Yoseph, P.Z. and Ish-Shalom, S., "3D Medical Imaging Techniques of Bone Micro-Architecture as a Base for a 3D Computerized Diagnostic System of Bone Metabolic Diseases", *ISRACAS'07 Rambam Medical Center*, Haifa, Israel, May 10, 2007.
 60. A. Fischer, Y. Holdstein, L. Podshivalov, P. Bar-Yoseph, "Shape retrieval of Micro Structures from micro CT/MRI, using Neural Networks", *Israel-Italy Bi-National Conference on Shape Modeling and Reasoning for Industrial and Bio-Mechanical Applications*, Haifa, Israel, 2007.
 61. Holdstein, Y., Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "A Neural Network Technique for Re-Meshing of Bone Micro-Structure", *International Conference on Advanced Research in Virtual and Rapid Prototyping*, Held in Leiria, Portugal, September 24-29, 2007.
 62. Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "Multi-scale finite-element analysis as a base for a 3D computerized virtual biopsy system", *ASME Conference on Engineering Systems Design and Analysis (ESDA08)*, Held in Technion, Haifa, Israel, July 7-9, 2008.
 63. Quaknin, G. and Bar-Yoseph, P.Z., "Computational Models of Epidermal Cells Migration during Wound Healing", *The Biophysical Society's 53rd Annual Meeting, Boston, Massachusetts*, February 28, 2009 - March 4, 2009. Poster
 64. Holdstein, Y., Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "Mechanical analysis of micro-scaffold-based implants for bone tissue engineering", *ISRACAS'09*, Ichilov Medical Center, Tel-Aviv, Israel, May 7, 2009.
 65. Quaknin, G. and Bar-Yoseph, P.Z., "On Stochastic Movement of Collective Cells and Fingering Morphology", *Third International Symposium on Instability and Bifurcations*

in Fluid Dynamics (BIFD'09), Nottingham University, England, August 10-13, 2009.

66. Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "2D Multi-Resolution Domain-Based Meshing for Multi-scale FE Analysis of Bone Micro-Structures", *2nd South East European Conference on Computational Mechanics (An ECCOMAS and IACM Special Interest Conference; SEECOM 09)*, Held in Island of Rhodes, Greece, June 22-24, 2009.
67. Holdstein, Y., Podshivalov, L., Fischer, A and Bar-Yoseph, P.Z., "Volumetric Texture Synthesis of Bone Micro-Structure as a Base for Scaffold Design", *IEEE International Conference on Shape Modeling and Applications (SMI'09)*, Held in Tsinghua University, Beijing, China, June 26-28, 2009.
68. Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "Multiresolution Geometric Meshing for Multiscale Finite Element Analysis of Bone Micro-Structures", *ECCOMAS International Conference on Tissue Engineering (ICTE '09)*, Held in Leiria, Portugal, July 9-11, 2009.
69. Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "3D Multiscale Finite Element Analysis of Bone Microstructure", *IV European Conference on Computational Mechanics (ECCM 2010)*, Held in Paris, France, May 16-21, 2010.
70. Podshivalov, L.*, Fischer, A. and Bar-Yoseph, P.Z., "Warped hexahedral meshing of ellipsoidal inclusions for design of composite material", *International Conference on Advanced Research in Virtual and Rapid Prototyping*, Leiria, Portugal, September 28-October 1, 2011.
71. Podshivalov, L.*, Fischer, A. and Bar-Yoseph, P.Z., "Performance Assessment of Hexahedral Meshing Methods for Design and Mechanical Analysis of Composite Materials" Proc. *11th Biennial ASME Conference on Engineering Systems Design and Analysis (ESDA 2012)*, Nantes, France, July 2-4, 2012.
72. Podshivalov, L.*, Gomes, C., Zocca, A., Guenster, A., Bar-Yoseph, P.Z. and Fischer, A. "Design, Analysis and Additive Manufacturing of Porous Structures for Biocompatible Microscale Scaffolds." *CIRP Conference on BioManufacturing (CIRP-BioM 2013)*, March 3-5, 2013, Tokyo, Japan. **Best Paper Award – Second Prize.**
73. C. M. Gomes*, A. Zocca, J. Guenster, L. Podshivalov*, P. Bar-Yoseph, A. Fischer, "Designing apatite/wollastonite (A/W) porous scaffolds by powder-based 3D printing", *Int. Conference on Advanced Research in Virtual and Rapid Prototyping (VRAP)* , Leiria, Portugal, October 2013.

Abstracts of Lectures:

1. Bar-Yoseph, P. and Blech, J.J., "The Stability of a High Speed Rotor Supported by Circumferentially Fed Journal Bearings", *8th Israel Conf. on Mechanical Engineering*, Technion, 1974.
2. Bar-Yoseph, P., Solan, A. and Blech, J.J., "The Effect of Inertia on Flow between Misaligned Rotating Disks", *ASME 1980 Winter Annual Meeting*, Chicago, Illinois.
3. Bar-Yoseph, P., "Standard and Asymptotic Finite Element Methods for Incompressible Viscous Flows", *ASME 1982 Winter Annual Meeting*, Phoenix, Arizona.

4. Bar-Yoseph, P., Roesner, K.G. and Solan, A., "Polar Vortex Motion Between Rotating Spherical Shells: Vortex Breakdown, Steady and Time-Periodic", *IUTAM Symposium on Nonlinear Hydrodynamic Stability and Transition*, Nice, September 3-7, 1990. Abstract published in *European J. of Mechanics B, Fluids*, **10**(2), Suppl., 325 (1991).
5. Zrahia, U. and Bar-Yoseph, P., "Space-Time Spectral Element Method for Solution of Second Order Hyperbolic Equations", *2nd Int. Conf. on Spectral and High Order Methods*, Montpellier, June 22-26, 1992.
6. Bar-Yoseph, P., Israeli, M. and Weichhendler, S., "The Asymptotic Spectral Element Method", Abstracts of Lectures, *2nd Int. Conf. on Spectral and High Order Methods*, Montpellier, June 22-26, 1992.
7. Bar-Yoseph, P., "Computational Modelling of Rotating Flows", *9th Technion/Aachen/Jülich Umbrella Symposium on Scientific Computing - Concepts and Applications*, Haifa, September 30 - October 2, 1992.
8. Moses, E., Bar-Yoseph, P. and Yarin, I.L., "On Simplified Modelling Processes in Spark Ignition Engines", *8th Israeli Combustion Meeting*, Acre, November 26, 1992.
9. Yarin, A.L., Arkadyev, A. and Bar-Yoseph, P., "Coating Growth on Turbine Blade in Polydisperse Particles - Hot Gas Flow", *7th Annual Meeting, Israeli Association for Aerosol Research*, Haifa, May 27, 1993.
10. Bar-Yoseph, P., Moses, E. and Zrahia, U., "Spectral Elements for Solving the Burgers Equation", *The James H. Belfer Symposium on Computational Fluid Dynamics*, Technion, June 9, 1993.
11. Ben-Tal., Bar-Yoseph, P. and Flashner, H., "Optimal Slewing of a Flexible Beam by Space-Time Spectral Elements", *2nd European Solid Mechanics Conference*, Genova, September 12-16, 1994, O5.
12. Zrahia, U. and Bar-Yoseph, P., "Spectral Element Methods for Static and Dynamic Response of Composite Laminates", *2nd European Solid Mechanics Conference*, Genova, September 12-16, 1994, C5.
13. Bar-Yoseph, P. and Kryzhanovski, Yu., "Non-Newtonian Effects on Axisymmetric Vortex Breakdown in Confined Swirling Flows", *2nd European Fluid Mechanics Conference*, Warsaw, September 20-24, 1994.
14. Gelfgat, A., Bar-Yoseph, P. and Solan, A., "Stability of a Confined Swirling Flow", *2nd European Fluid Mechanics Conference*, Warsaw, September 20-24, 1994.
15. Bar-Yoseph, P., "Novel Spectral Element Methods for Integration of Dynamic Systems", *The James H. Belfer Symposium on Modelling of Structures and Mechanical Systems*, Technion, May 8-10, 1995.
16. Gelfgat, A., Bar-Yoseph, P. and Solan, A., "Steady-State and Oscillatory Instability of a Confined Swirling Flow in a Cylinder with Rotating Top and Bottom", *Euromech Colloquium No. 336 on Flow Dominated by Centrifugal and Coriolis Forces*, Trondheim, Norway, June 21-23, 1995.
17. Bar-Yoseph, P.Z., "Steady and Unsteady Structures of Axisymmetric Vortex Breakdown in Confined Swirling Flows", *48th Annual Meeting, APS Division of Fluid Dynamics*, Irvine, California, November 19-21, 1995.

18. Bar-Yoseph, P.Z., "Novel Spectral Element Methods for Time Dependent Problems", *1st Workshop of the Israel Association for Computational Methods in Mechanics*, Technion, Haifa, December 19, 1995.
19. Gelfgat, A., Bar-Yoseph, P.Z. and Solan, A., "Numerical Investigation of Vortex Hydrodynamic Stability", *19th Int. Congress of Theoretical and Applied Mechanics*, Kyoto, Japan, August 25-31, 1996.
20. Gelfgat, A.Yu., Bar-Yoseph, P.Z. and Solan, A., "Numerical Investigation of Stability and Slightly Supercritical States of a Confined Swirling Flow", *Abstracts of James H. Belfer Memorial Symposium on Nonlinear Mechanics*, Haifa, Technion, 1996, 8-9.
21. Keller, I., Oron, A. and Bar-Yoseph, P.Z., "Regular and Irregular Regimes in Binary Fluid Convection Excited by Parametric Resonance", *49th Annual Meeting, APS Division of Fluid Dynamics*, Syracuse, NY, November 24-26, 1996.
22. Gelfgat, A.Yu., Bar-Yoseph, P.Z. and Yarin, A., "Multiple Steady States and Stability of Convective Flows in Long Horizontal Cavities", *Abstracts of James H. Belfer Memorial Symposium on Nonlinear Mechanics*, Haifa, Technion, June 17, 1997, 4-5.
23. Fischer, A., Bar-Yoseph, P.Z. and Hod, Y., "Visualization of Space-Time Finite Elements Based on Multiresolution Quadtree", *ISPRS Theoretical and Practical Aspects of Surface Reconstruction and 3-D Object Extraction*, Haifa, September 9-11, 1997.
24. Gelfgat, A.Yu., Bar-Yoseph, P.Z., Solan, A., "Axisymmetry-Breaking Instabilities of Axially Symmetric Convective Flows", *Tenth Int. Symposium on Transport Phenomena (ISTP-10) in Thermal Science and Process Engineering*, Kyoto, Japan, November 30 - December 3, 1997.
25. Fischer, A., Bar-Yoseph, P.Z. and Hod, Y., "Real-Time Mesh Generation Based on Multiresolution Quadrature", *Israel-Korea Bi-National Conference on New Themes in Computerized Geometrical Modeling*, Tel Aviv University, February 18-19, 1998.
26. Afriat, I. and Bar-Yoseph, P.Z., "Optimal Design of Composite Frames for Bicycles", *2nd Workshop on Composite Materials*, Haifa, 7 April 1998; *27th Israel Conference on Mechanical Engineering*, Haifa, 19-20 May, 1998.
27. Gelfgat, A.Yu., Bar-Yoseph, P.Z. and Solan, A., "Numerical Study of Stability, Bifurcation and Slightly Supercritical States of Confined Flows Using a Global Galerkin Method", *4th Int. Conference on Spectral and High Order Methods (ICOSAHOM)*, Herzliya, Israel, 22-26 June, 1998.
28. Bar-Yoseph, P.Z., "Novel Spectral and Finite Element Methods for Transient Problems", *4th Int. Conference on Spectral and High Order Methods (ICOSAHOM)*, Herzliya, Israel, 22-26 June, 1998.
29. Naveh, Y., Bar-Yoseph, P.Z. and Halevi, Y., "Time Spectral Element Modeling and Control of Unicycle", *IACM - Fourth World Congress on Computational Mechanics (WCCM)*, Buenos Aires, 29 June - 2nd July, 1998.

30. Gelfgat A.Yu., Bar-Yoseph P. and Solan A. 1998. "Numerical Study of Stability, Bifurcations and Slightly Supercritical States of Confined Flows Using a Global Galerkin Method". *Int. Conference on Spectral and High Order Methods*, Herzliya, Israel, June 22-26, 1998.
31. Kagan, P., Fischer, A. and Bar-Yoseph, P.Z., "Novel B-Spline Finite Element Approach Towards Unification of Geometrical Design and Mechanical Analysis", *IACM - Fourth World Congress on Computational Mechanics (WCCM)*, Buenos Aires, 29 June-2nd July, 1998.
32. Gelfgat A.Yu., Bar-Yoseph P. and Solan A. 1998. "Study of Stability, Bifurcations and Slightly Supercritical States of Confined Flows Using Global Galerkin and Finite Volume Methods". *ERCOFTAC/EUROMECH Colloquium 383, Continuation Methods in Fluid Dynamics*, Aussois, France, September 6-9, 1998, 7.
33. Gelfgat, A. Yu., Bar-Yoseph, P.Z. and Solan, A., "Study of Stability, Bifurcations and Slightly Supercritical States of Confined Flows Using Global Galerkin and Finite Volume Methods", *ERCOFTAC and EUROMECH Colloquium 383, Continuation Methods in Fluid Dynamics*, Aussois, France, 6-9 September, 1998.
34. Gelfgat A.Yu., Bar-Yoseph P., Solan A. and Kowalewski T.A. 1999. "High-Azimuthal Number Axisymmetry-Breaking Convective Instabilities in Axisymmetric Freezing of Ice". *ESF-AMIF Phase Change with Convection Workshop*, Warsaw, Poland, June 24-26, 1999, 77-80.
35. Bar-Yoseph, P.Z., Mereu, S., Chippada, S. and Kalro, V., "Novel Computational Mesh Movement Algorithms for Fluid-Structure Interaction Problems", *5th US National Congress on Computational Mechanics*, University of Boulder, Colorado, August 4-6, 1999.
36. Bar-Yoseph, P.Z. "Finite Elements for Nonlinear Modeling and Control in Structural Dynamics", *5th US National Congress on Computational Mechanics, University of Boulder*, Colorado, August 4-6, 1999.
37. Bar-Yoseph, P.Z. and Yishai Rinat, "Spectral Element for Nonlinear Dynamic Modeling of Piezoelectric Composite Laminated Plates", *European Conference on Computational Mechanics (ECCM '99)*, München, Germany, August 31 - September 3, 1999.
38. Bar-Yoseph, P.Z., Mereu, Kalro, V., "Novel Computational Mesh Movement Algorithms for Problems with Moving Boundaries", *ISCFD'99*, Bremen, Germany, Sept. 5-10, 1999.
39. Gelfgat, A.Yu., Bar-Yoseph, P.Z. Solan, A. and Kit, E., "Axisymmetric Breaking Instabilities of Natural Convection in a Vertical Bridgmen Growth Configuration", *The 1999 Annual Conference of the Israeli Association for Crystal Growth*, Weizmann Institute of Science, Rehovot, November, 14, 1999.
40. Gelfgat, A.Yu., Bar-Yoseph, P.Z. and Solan, A., "Numerical Studies on Axisymmetric – Three Dimensional Transitions in Rotating and Convective Flows", *Abstracts of James H. Belfer Memorial Symposium on Nonlinear Mechanics*, Haifa, Technion, 2000, 14-15.

41. Solan, A., Gelfgat, A.Yu. and Bar-Yoseph, P.Z., "Three-Dimensional Instabilities of Flow in a Rotating Lid-Cylinder Enclosure, *ICTAM 2000*, Chicago, August 27 – September 2, 2000, 84.
42. Gelfgat, A.Yu., Bar-Yoseph, P.Z., Solan, A. and Kit, E., "Axisymmetry-Breaking Instabilities of Axisymmetric Natural Convection in a Vertical Cylinder with a Parabolic Side Wall Temperature", *ICTAM 2000*, Chicago, August 27 – September 2, 2000, 81.
43. Gelfgat, A.Yu., Bar-Yoseph, P.Z. and Solan, A., "Axisymmetry-Breaking Instabilities in a Vertical Bridgman Crystal Growth Model", *3rd Int. Workshop on Modeling in Crystal Growth*, Stony Brook, NY, October 18-20, 2000, 105.
44. Bar-Yoseph, P.Z., Gelfgat, A.Yu. and Solan, A., "Novel Results in Axisymmetry-Breaking Instabilities of Swirling Flow in a Cylinder with Rotating Lid", *12th Int. Couette-Taylor Workshop*, Evanston, IL, September 6-8, 2001.
45. Gelfgat, A.Yu., Yarin A.L. and Bar-Yoseph, P.Z., "Stability of a Two-Layer Dean Flow with a Capillary Liquid-Liquid Interface", *12th Int. Couette-Taylor Workshop*, Evanston, IL, September 6-8, 2001.
46. Amir, N., Bar-Yoseph, P.Z. and Dovrat, A., "Simulation of Heat Exposure and Damage to the Eye Lens in a Neighborhood Bakery", Annual Meeting, *Israel Society for Vision & Eye Research*, March 14-15, 2002.
47. Sharon, N., Bar-Yoseph, P.Z. and Dovrat, A., "Simulation of Heat Exposure and Damage to the Eye Lens in Neighborhood Bakery", *XV Int. Congress of Eye Research*, Geneva, Switzerland, October 6-10, 2002.
48. Bar-Yoseph, P.Z., Participation in Workshop on "Medical Problems with Technological Solutions", Bruce Rappaport Faculty of Medicine, Technion, Haifa, 15 January, 2003.
49. Rosenstein, Y. and Bar-Yoseph, P.Z., "On the Hydrodynamic Instabilities in Czochralski (Cz) Process", *29th Israel Conference of Mechanical Engineering*, Technion, Haifa, 12-13 May, 2003.
50. Eshkoli, E., Bar-Yoseph, P.Z. and Adler, D., "Numerical Study of Jet in a Cross Flow", *29th Israel Conference of Mechanical Engineering*, Technion, Haifa, 12-13 May, 2003.
51. Potapov, A., Gelfgat, A.Yu. and Bar-Yoseph, P.Z., "Computational Modeling of Melting/Solidification Affected by Convection", *29th Israel Conference of Mechanical Engineering*, Technion, Haifa, 12-13 May, 2003.
52. Suponitsky, V., Cohen, J. and Bar-Yoseph, P.Z., "The Development of a Localized Vortex Disturbance in Uniform Shear Flow – The Effect of the Initial Orientation", *29th Israel Conference of Mechanical Engineering*, Technion, Haifa, 12-13 May, 2003.
53. Rubinov, A., Gelfgat, A.Yu., Bar-Yoseph, P.Z. and Solan, A., "Parametric Instability on Cylindrical Thermocapillary Liquid Bridges", *29th Israel Conference of Mechanical Engineering*, Technion, Haifa, 12-13 May, 2003.

54. Suponitsky, V., Cohen, J., Bar-Yoseph, P.Z. and Shukhman, I., "Numerical and Theoretical Investigation of the Evolution of a Localized Vortex Disturbance in Uniform Shear Flow", *33rd AIAA Fluid Dynamics Conference*, Orlando, Florida, June 23-26, 2003.
55. Rubinov, A., Bar-Yoseph, P.Z., Solan, A., Erenburg, V., Gelfgat, A.Yu. and Kit, E., "Two- and Three-Dimensional Instabilities of Natural Convection in a Vertical Cavity or Cylinder with Partially Heated Sidewalls", *5th European Fluid Mechanics Conference*, Toulouse, France, August, 24-28, 2003, 111.
56. Rubinov, A., Bar-Yoseph, P.Z., Solan, A. and Gelfgat, A.Yu., "Three-Dimensional Instability of Thermocapillary Convection in Liquid Bridges in Zero Gravity under Different Heating Conditions", *5th European Fluid Mechanics Conference*, Toulouse, France, August, 24-28, 2003, 497.
57. Gelfgat, A.Y., Rubinov, A., Bar-Yoseph, P.Z. and Solan, A., "Direct Numerical Study of Three-Dimensional Instabilities in a Hydrodynamic Model of Crystal Czochralski Growth Process", *14th Int. Crystal Growth Conf.*, Grenoble, August 9-13, 2004, 26.
58. Cohen, J., Suponitsky, V. and Bar-Yoseph, P.Z., "The Instability of a Localized Vortex Disturbance in Uniform Shear Flow", *21st International Congress of Theoretical and Applied Mechanics (ICTAM04)*, Warsaw, Poland, August 15-21, 2004
59. Gelfgat, A.Yu., Bar-Yoseph, P.Z. and Cohen, S., "Magnetic Field Effects of Stability of Convective Flows", *Second International Symposium on Instability and Bifurcations in Fluid Dynamics (BIFD2006)*, Copenhagen, August 15-18, 2006.
60. Fischer, A., Holdstein, Y., Podshivalov, L., and Bar-Yoseph, P.Z., "A Neural Network Technique for Mesh Reconstruction of Bone Micro-Structure", *2007 Israel-Italy Bi-National Conference on Shape Modeling and Reasoning for Industrial and Biomedical*.
61. Podshivalov, L., Fischer, A. and Bar-Yoseph, P.Z., "3D Visualization and Analysis for Diagnosis of Bone Micro-Structures: an Overview and New Directions", *VisionTrain - An EU Marie Curie Research Training Network in the Field of Computational Vision*, Haifa, Israel, November 26-27, 2007.
62. Tang, R., Bar-Yoseph, P.Z., and Lasheras, J.C., "Fluid Characteristic in Abdominal Aortic Aneurysms (AAAs) and Its Correlations to Thrombus Formation", *61st Annual Meeting of the APS Division of Fluid Dynamics*, San Antonio, TX, November 23-25, 2008. 2008 APS DFD HL002T.
63. Quakanin, Gaddiel, and Bar-Yoseph, P.Z., "The Development of Epidermal Wound Healing: A Computational Approach", *ISCM25*, Ben-Gurion University of the Negev, Beer-Sheva, October 23, 2008.
64. Podshivalov, L., Fischer, A., and Bar-Yoseph, P.Z., "Domain Decomposition Techniques as a Base for a Multi-scale Finite Element Analysis of the Bone Tissue", *ISCM25*, Ben-Gurion University of the Negev, Beer-Sheva, October 23, 2008.
65. Podshivalov, L., Holdstein, Y., Fischer, A. and Bar-Yoseph, P.Z., "3D Visualization and Analysis for Diagnosis of Bone Micro-structures: An Overview and New

Directions", *Israeli Society for Medical and Biological Engineering (ISMBE) Annual Symposium*, Tel-Aviv, Israel, March 12, 2009.

66. Podshivalov, L., Holdstein, Y., Fischer, A. and Bar-Yoseph, P.Z., "3D Multiscale Finite Element Analysis of Bone Microstructure", *The Israeli Conference on Mechanical Engineering (ICME' 10)*, Tel-Aviv, Israel, June 2, 2010.
67. Podshivalov, L., Fischer, A., and Bar-Yoseph, P.Z., "3D Multi-resolution Geometric Modeling and Multiscale Finite Element Analysis of Bone Micro-structures", *Israeli Symposium on Computer Aided Surgery, Medical Robotics and Medical Imaging (ISRACAS'10)*, Herzlia, Israel, November 11, 2010.
68. Moiseyev, G., Givli, S. and Bar-Yoseph, P.Z., "Building 'Bottom-Up' Blood Coagulation Models using Mechanical Statistics" *ISCM31*, Oct. 27, 2011, Ben-Gurion University, Beer-Sheva, Israel
69. Moiseyev, G., and Bar-Yoseph, P.Z., "Building 'Bottom-Up' Blood Coagulation Models using Mechanical Statistics" *ECI Conference on Computational Fluid Dynamics (CFD) in Medicine and Biology* in conjunction with the *7th International Biofluid Mechanics Symposium*, Crowne Plaza Dead Sea, Ein Bokek, Dead Sea, Israel, March 25-30, 2012.

Special Organizational Activities in Conferences:

- | | |
|------------|---|
| 2019-2022 | Member, International Advisory Committee, 10 th International Symposium of Bifurcations and Instabilities in fluid Dynamics (BIFD 2022), Bernoulli Institute of the University of Groningen, The Netherlands, July 18-21,2022. |
| 2019-2020 | Member, International Advisory Committee, 9 th International Bio-Fluid Mechanics and Vascular Mechano-Biology Symposium, Tucson, Arizona February 13-16, 2020. |
| 2018-2019 | Member, International Advisory Committee, 8 th International Symposium of Bifurcations and Instabilities in fluid Dynamics (BIFD 2019), University of Limerick, Ireland, July 16-19,2019. |
| 2018: | Co-organizer, 45 th Annual Meeting of the Israel Association for Computational Methods in Mechanics (ISCM-45), Technion, Oct. 18, 2018 |
| 2017: | Co-organizer, 42 nd Annual Meeting of the Israel Association for Computational Methods in Mechanics (ISCM-42), Technion, April 30, 2017. |
| 2016-2017: | Member, International Advisory Committee, 7 th International Symposium on Bifurcations and Instabilities in Fluid Dynamics (BIFD 2017), The Woodlands, Texas, USA, July 11-14, 2017. |
| 2015-2016: | Session Organizer, "Modelling and Simulations of Vascular Diseases, 14 th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE 2016), Tel-Aviv, Sept. 20-22, 2016. |

- 2015-2016: Member, advisory/scientific board, *The eighth International Bio-Fluid Symposium and Workshop*, Caltech, Pasadena, 12-14 February, 2016.
- 2014-2015: Co-organizer, *6th International Symposium on Bifurcations and Instabilities in Fluid Dynamics (BIFD 2015)*, Paris, France, July 15-17, 2015.
- 2014-2015: Member, Scientific Committees, *21th Congress of the European Society of Biomechanics (ESB)*, Prague, Czech Republic, 5-8 July, 2015.
- 2014: Co-organizer, *36th Annual Meeting of the Israel Association for Computational Methods in Mechanics (ISCM-36)*, Technion, April 24, 2014.
- 2013-2014: Track Leader, Computational Mechanics, *ASME 2014 12th Biennial Conference on Engineering Systems Design and Analysis (ESDA2014)*, Copenhagen, Denmark, June 25-27, 2014.
- 2012-2013: Member, International Advisory Committee, *the 2013 World Congress on Advances in Structural Engineering and Mechanics (ASEM13)*, Organized by KAIST, Korea, September 8-12, 2013.
- 2012-2013: Co-organizer, *5th International Symposium on Bifurcations and Instabilities in Fluid Mechanics (BIFD2013)*, Technion, July 8-11, 2013.
- 2012: Member, Scientific Committee of the *6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2012)*.
- 2011: Member, International Advisory Committee, *the 2011 World Congress on Advances in Structural Engineering and Mechanics (Asem11+)*, Korea, September 18-23, 2011.
- 2010-2011: Co-organizer, *4th International Symposium on Bifurcations and Instabilities in Fluid Mechanics*, Universitat Politecnica de Catalunya, Barcelona, Spain, July 18-21, 2011. <http://congress.cimne.com/bifd2011/frontal/default.asp>.
- 2009: Member, Panel Session, *International LinkSCEEM High Performance Computing Conference*, Pathos, Cyprus, October 6-9, 2009.
- 2008-2009: Co-organizer, *3rd International Symposium on Bifurcations and Instabilities in Fluid Mechanics*, University of Nottingham, UK, August 13-16, 2009.
- 2007-2008: Track Leader, Computational Mechanics, *9th Biennial Conference on Engineering Systems Design and Analysis (ESDA 2008)*, Haifa, Israel, July 7-9, 2008.
- 2007-2008: Member, International Advisory Board, *8th World Congress on Computational Mechanics (WCCM8)* and *5th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2008)*, Venice, Italy, June 30 – July 5, 2008.

- 2007-2008: Member (IACMM Representative), Organizing Committee, *18th International Conference on Domain Decomposition Methods (DDM18)*, Hebrew University, January 2008.
- 2007: Chairman, Plenary and Morning Sessions, Workshop on *Computations in Nanotechnology*, Russell Berrie Nanotechnology Institute, Technion, May 9, 2007.
- 2007: Co-organizer, *22nd Annual Meeting of the Israel Association for Computational Methods in Mechanics (ISCM-22)*, Technion, March 15, 2007.
- 2007: Member, International Organizing Committee, *14th International Conference on Computational Methods in Engineering and Sciences (ICCES'07)*, Miami, January 3-8, 2007.
- 2006: Chairman, Plenary Session, *ECCOMASS CFD*, 2006, Egmond aan Zee, The Netherlands, September 5-8, 2006.
- 2005-2006: Member, Organizing Panel, *European Conference on Computational Fluid Dynamics (ECCOMAS CFD 06)*, Egmond aan Zee, The Netherlands, September 5-8, 2006.
- 2004-2006: Co-organizer, *2nd International Symposium on Bifurcations and Instabilities in Fluid Mechanics*, University of Denmark, Lyngby, August 15-18, 2006.
- 2004-2005: Member, International Organizing Committee, *13th International Conference on Computational & Experimental Engineering and Sciences (ICCES'05)*, Chennai, India, 1-6 December 2005.
- 2004: Co-organizer, *High Performance Computing and Visualization Conference*, Technion, 11 October 2004.
- 2004: Organizer of the *Special Symposium on Stabilities and Bifurcations in Fluid Mechanics*, *12th International Conference on Computational Methods in Engineering and Sciences (ICCES'04)*, Madeira, Portugal, 25-29 July 2004.
- 2003: Chairman, Computational Mechanics Session, *29th Israel Conference on Mechanical Engineering*, Technion, 12-13 May 2003.
- 2002-2003: Organizer, Annual Meeting of the *Israel Association for Computational Methods in Mechanics (IACMM)*, Technion, April 2002, 2003.
- 2000-2002: Member of the Scientific Board of the *5th World Congress on Computational Mechanics (WCCM V)*, Vienna, Austria, July 7-12, 2002.
- 2000-2001: Member of the Scientific Advisory Committee of the *1st International Conference on Computational Engineering & Sciences, ICES'2001*, Puerto Vallarta, Mexico.

- 2000-2001: Member of the Scientific Committee of the *2nd European Conference on Computational Mechanics (ECCM-2001)*, Cracow, Poland, June 26-29, 2001.
- 1999-2000: Member of the Organizing Committee, *ECCOMAS 2000 (European Community in Computations Methods in Applied Sciences)*, Barcelona, Spain, Sept. 11-14, 2000.
- 1999: Chairman, Plenary Session, *ISCFD '99*, Bremen, Germany, Sept. 5-10, 1999.
- 1998-9: Organizer of the *Spectral and High Order Methods Session*, European Conference on Computational Mechanics (ECCM '99), München, Germany, August 31 - September 3, 1999.
- 1998-9: Member of the Scientific Board of the *European Conference on Computational Mechanics (ECCM '99)*, München, Germany.
- 1998-9: Member of the Scientific Committee, *8th Int. Symposium on Computational Fluid Mechanics*, Bremen, Germany.
- 1997: Chairman, Session IV, *Belfer Memorial Symposium on Nonlinear Mechanics*, Technion.
- 1997: Chairman, Mini Symposium on Numerical Treatment of Singularities and Interfacial Phenomena, *IUTAM Symposium on Non-Linear Singularities in Deformation and Flow*, Technion.
- 1996: Member of the Scientific Committee and Chairman, CFD Session, *2nd Scientific Visualization Conference*, Technion.
- 1996: Chairman, Computational Mechanics Session, *26th Israel Conference on Mechanical Engineering*, Technion.
- 1995: Organizer, *1st Workshop of the Israel Association for Computational Methods in Mechanics*, Technion.
- 1995: Chairman, Spectral Methods Session, *6th International Symposium on Computational Fluid Dynamics (6ISCFD)*, Lake Tahoe, Nevada.
- 1994: Chairman, Suspension I Session, *2nd European Fluid Mechanics Conference*, Warsaw.
- 1994: Chairman and Developer, Finite Element Modeling of Local Effects in Composite Laminates Session, *1st International Conference on Composite Engineering (ICCE/1)*, New Orleans, USA.
- 1994: Chairman, Computational Mechanics Session, *25th Israel Conference on Mechanical Engineering*, Technion.
- 1993: Chairman, Non-Newtonian Flow Session, *5th International Symposium on Computational Fluid Dynamics*, Sendai, Japan

- 1990: Chairman, Computational Mechanics Session, *23rd Israel Conference on Mechanical Engineering*, Technion.
- 1987: Chairman, Computational Mechanics Session, *21st Israel Conference on Mechanical Engineering*, Technion.
- 1987: Chairman, Editorial Board, *21st Israel Conference on Mechanical Engineering*, Technion.
- 1984: Chairman, Computational Mechanics Session, *18th Israel Conference on Mechanical Engineering*, Technion.

Reviewer for Conferences:

- 1998-9: European Conference on Computational Mechanics (*ECCM '99*)
- 1998-9: 8th International Symposium on Computational Fluid Dynamics (*ISCFD '99*)
- 1997: First Israel-France Binational Workshop on Failure of Materials.
- 1997: International Symposium on Advances in Computational Heat Transfer, Cesme, Turkey.
- 1994: 5th International Symposium on Computational Fluid Dynamics, Sendai, Japan.
- 1992: 13th International Conference on Numerical Methods in Fluid Dynamics, Rome.
- 1984, 1987, 1990, 1994: 18th, 21st, 23rd & 25th Israel Conferences on Mechanical Engineering, Technion.
- 1984: 26th Israel Annual Conference on Aviation and Astronautics, Technion.

SPECIAL PROFESSIONAL ACTIVITIES:

Reviewer for Research Proposals:

- 2005: Referee, Hanin Prize for Excellence in Fluid Dynamic Research.
- 1996, 1999, 2004: *German Israel Foundation for Scientific Research and Development (G.I.F.)*.
- 1994: Directorate of Defense Research and Development, Israel Defense Ministry.

Seminars Presented (Abroad):

1. "Asymptotic Finite Element Methods for Boundary Layer Problems", Max-Planck-Institut für Strömungsforschung, Göttingen, Germany (September 1984).

2. "Novel Variational-Asymptotic Formulations for Delamination Modelling in Composite Structures", Applied Mechanics Division Seminar, Stanford University, Stanford, CA. (December 1985).
3. Variational-Asymptotic Formulations for Interlaminar Stress Analysis in Composite Structures", Aerospace & Mechanical Engineering Seminar, University of Southern California, CA. (August 1986).
4. "Asymptotic Finite Element Method for Boundary Value Problems", Mechanical Engineering Seminar, MIT, Cambridge, MA (August 1988).
5. "Spectral Element Methods for Solving Rotating Fluid Flows", Kolloquium Über Strömungsmechanik, Technische Hochschule Darmstadt, Darmstadt, Germany (January 1992).
6. "Multiple Flow Modes and Vortex Breakdown Phenomena in Rotating Systems", Institute of Computational Fluid Dynamics, Tokyo, Japan (September 1993).
7. "Multiple Flow Modes and Vortex Breakdown Phenomena in Rotating Systems", Aerospace & Mechanical Engineering Seminar, University of Southern California, CA. (September 1993).
8. "Space-Time Spectral Element Methods for Convective-Diffusive Equations", Department of Mathematics, Chemistry and Technical Physics, Military University of Technology, Warsaw, Poland (September 1994).
9. "Novel Space-Time Spectral Element Methods for Unsteady Convection-Diffusion Problems", Dept. of Mechanical Engineering, UMIST, Manchester (August 1995).
10. "Novel Space-Time Spectral Element Methods for Nonlinear Differential Equations", R.P.I., Troy (July 1996).
11. "Finite Element Procedures for Analysis, Design and Visualization", Dept. of Mechanical Engineering, Marquette University, Milwaukee, (November 1998).
12. "Stability of Multiple Steady States of Convection in Laterally Heated Cavities", Dept. of Mechanics, Royal Institute of Technology, Stockholm (September 1999).
13. "On Stochastic Movement of Collective Cells and Fingering Morphology" and on "3-D Bone Reconstruction from Micro CT/MRI Medical Images and Multi-Scale Finite Element Analysis for Diagnosis of Osteoporosis", Dept. of Biomedical Engineering and Computational Science, Helsinki University of Technology (August 2009).
14. "Computational Simulation of Hemodynamically Induced Blood Coagulation Formation and Growth", Division of Mechanics, Royal Institute of Technology, Stockholm (August 2009).
15. "On Stochastic Movement of Collective Cells and Fingering Morphology" and on "Computational Simulation of Hemodynamically Induced Blood Coagulation Formation and Growth", Division of Fluid Dynamics, Department of Applied Mechanics, Chalmers University of Technology (August 2009).

16. "On Stochastic Movement of Collective Cells and Fingering Morphology" and on "Computational Simulation of Hemodynamically Induced Blood Coagulation Formation and Growth", Dept. of Mathematics, Technical University of Denmark, Lyngby, Denmark (September 2009).
17. "Novel Computational Methods for Simulation of Arterial and Metabolic Diseases", Department of Mechanical Engineering, Florida International University (September 17, 2011); Department of Mechanical and Aerospace Engineering, The George Washington University (September 20, 2011); Department of Biomedical Engineering, Columbia University (September 23, 2011).