

CURRICULUM VITAE**ALEXANDER YARIN**

Date of birth: May 20, 1953

Address:

office: 842 W. Taylor Str. Dept. of
Mechanical and Industrial Engineering, University of Illinois at Chicago,
Chicago IL 60607-7022, USA

Telephone, office: (312) 996-3472

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Academic Degrees:

- February 8, 1977 M.Sc. in Mechanical Engineering
(with honors), Polytechnic Institute of Leningrad (Leningradskii
Polytechnicheski Institut imeni M.I. Kalinina), USSR
- June 17, 1980 Candidate of Physico-Mathematical Sciences (Ph.D.) Institute for Problems
in Mechanics, USSR Acad. Sci., Moscow, USSR
(Institut Problem Mekhaniki Akademii Nauk SSSR)
- October 6, 1989 Doctor of Physico-Mathematical Sciences (habilitation), Institute for
Problems in Mechanics, USSR Acad. Sci., Moscow, USSR
(Institut Problem Mekhaniki Akademii Nauk SSSR)

Previous Academic Positions:

- Apr. 1977 - Apr. 1980 Post graduate student, Institute for Problems in Mechanics USSR Acad.
Sci., Moscow, USSR
- May 1980 - Feb. 1986 Junior Research Associate, Institute for Problems in Mechanics,
USSR Acad. Sci., Moscow, USSR
- Feb. 1986 - March 1990 Research Associate, Institute for Problems in Mechanics, USSR Acad.
Sci., Moscow, USSR
- March 1990 - June 1990 Senior Research Associate, Institute for Problems in Mechanics, USSR
Acad. Sci., Moscow, USSR
- October 1990 - June 1997 Associate Professor, Faculty of Mechanical Engineering, Technion, Haifa,
Israel
- June 1997 - Dec. 2005 Professor, Faculty of Mechanical Engineering, Technion, Haifa, Israel
- May 1999 - Dec. 2005 Eduard Pestel Chair in Mechanical Engineering, Technion, Haifa, Israel
- January 2006 - June 2014 Professor, Mechanical and Industrial Engineering Department,
University of Illinois at Chicago, USA
- June 2014 - Distinguished Professor, Mechanical and Industrial Engineering Department,
University of Illinois at Chicago, USA

concurrent:

1985 - 1989	Lecturer, Faculty of Molecular and Chemical Physics, Moscow Physico-Technical Institute, Moscow, USSR.
1988 - 1990	Professor, Moscow Aviation Technology Institute, Moscow, USSR.
2008-2012	Fellow at the Center of Smart Interfaces, Technical University of Darmstadt, Germany
2012-present	Professor of the Department of Electrical and Computer Engineering at the University of Illinois at Chicago (joint appointment)
2012-2015	Visiting Professor, College of Engineering, Korea University (Seoul, S. Korea)

Current Research Interests:

- Hydrodynamics and stability of free liquid jets and films
- Rheology and hydrodynamics of viscoelastic polymeric liquids
- Multiphase flows
- Aerodynamics of gas jets and torches
- Physics and mechanics of advanced technologies in optoelectronics (Optical fibers)
- Numerical investigation of flows with free surfaces by means of the boundary element method
- Combustion theory
- Theory of plasticity
- High-speed penetration
- Drop splashing
- Acoustic levitation
- Evaporation in acoustic field
- Shear friction of polymeric liquids
- Draw resonance in fiber spinning
- Fluid mechanics of sprays
- Spray cooling in microelectronics
- Biofuels
- Nanotechnology: electrospinning of nanofibers, nanoparticle-based ink-jet printing in micro- and optoelectronics, nanofluidics inside carbon nanotubes, continuous deposition of nanocoating on micron- and nano-sized particles in plasma reactors

Research Experience:

- | | |
|-------------|--|
| 1977 - 1980 | <u>Research work at the Institute for Problems in Mechanics, USSR Acad. Sci.</u> , during the study towards the degree of Candidate of Physico-Mathematical Sciences on "The dynamics and break-up of free liquid jets" (with Dr. V.B. Librovich and Dr. V.M. Entov). |
|-------------|--|
- - aerodynamics of non-self-similar gas jets
 - - numerical simulation of combustion and aerodynamics of gas torches

- 1980 - 1989 Research work at the Institute for Problems in Mechanics, USSR Acad. Sci.
- - rheology and hydrodynamics of polymeric liquids subjected to strong flows
 - - liquid disintegration during explosions
 - - combustion of liquid and solid propellants
 - - stability and sensibility of fiber spinning and film blowing processes
 - - modelling of pipeline shapes and stability under the action of external flows and waves, and internal fluid flow (in relation to off-shore oil recovery)
 - - modelling of two-phase flows in three-dimensional jets (in relation to sprinklers and fire fighting jets)
- 1989 - 1990 Research work at the Institute for Problems in Mechanics, USSR Acad. Sci.
- creeping flows occurring during formation of preforms for optical fibers by polishing in optoelectronics
 - thermophoretic deposition of particles in the process of preforms formation
 - spin coating of rough wafers
- 1996-1997 Research work at the University of Wisconsin-Madison, Madison, USA
- shear friction of polymeric liquids
 - evaporation of acoustically levitated droplets
 - numerical simulation of drop splashing
 - turbulent drag reduction by polymer additives
 - draw resonance in fiber spinning
- 1990 - 2005 Research work at the Technion, Haifa, Israel
- combustion of fuels with methanol admixture in internal combustion engines; knocking phenomenon
 - growth of coating on turbine blades in dusty flows
 - capillary breakup of thin liquid layer on wires
 - plasticity theory
 - high-speed penetration
 - shaped - charge jets
 - buckling jets
 - stability of rapidly evaporating jets
 - hydrodynamics of optical fibres forming
 - flow-induced on-line crystallization of polymers
 - drop splashing
 - free surface problems
 - acoustic levitation
 - two-phase flows
 - hydrodynamics of spray formation
 - biotechnological devices
 - micromechanics
 - nanotechnology
 - manufacturing of nanofibers
 - alignment of nanoparticles
- 2003-2004, 2006- Research work at the University of Illinois at Chicago, Chicago, USA

- nanoparticle-based ink-jet printing in micro- and optoelectronics
- nanofluidics inside carbon nanotubes
- continuous deposition of nano-coating on micron- and nano-sized particles in plasma reactors
 - electrospinning of polymer nanofibers for biomedical applications
 - intercalation of carbon nanotubes
 - controlled drug release
 - micro- and nanofluidics
 - elongational rheometry
 - nano-sensorics
 - smoothing of nanochannels
 - spray cooling in microelectronics
 - biofuels
 - meltblowing of micro- and nanofibers
 - solution blowing of nanofibers
 - cooling of microelectronics
 - biopolymer processing as nanofibers
 - phase change materials
 - mechanics and rheology of construction materials
 - mechanics and stability of foams
 - surfactants and plasticisers
 - filtration through nano-textured filters and membranes.

Short Appointments:

May - June 1990	Visitor, Institute of Physics, Slovak Academy of Sciences, Bratislava, Czechoslovakia
September - October 1992	Visitor, Max-Planck-Institute für Strömungsforschung, Göttingen, Germany
July - October 1993	Visitor, Max-Planck-Institute für Strömungsforschung, Göttingen, Germany
August - September 1994	Visitor, Max-Planck-Institute für Strömungsforschung, Göttingen, Germany
July - August 1995	Visitor, University of Erlangen - Nurnberg, Germany
April 1996	Visiting Professor at the Isaac Newton Institute for Mathematical Sciences, University of Cambridge, U.K.
July - August 1996	Visiting Position, University of Erlangen - Nurnberg, Germany
August 1996 - September 1997	Visiting Professor, University of Wisconsin - Madison, U.S.A. (on sabbatical).
July - August 1998	Visitor at the Technical University of Darmstadt and the University of Erlangen - Nurnberg, Germany
March 1999	Visiting Professor at the University of Akron, U.S.A.
July - August 1999	Visitor at the Technical University of Darmstadt and the University of Erlangen - Nurnberg, Germany

February 2000	Visitor at the University of Akron, U.S.A.
July - August 2000	Visitor at the University of Wisconsin - Madison, U.S.A.
October 2000	Visitor at the University of Erlangen - Nurnberg, Germany.
May – June 2001	Visitor at the University of Akron, U.S.A.
March - April 2002	Visitor at the University of Akron, U.S.A.
August, November – December 2002	Visitor at the National University of Singapore
September 2002	Visiting Professor at the Centre of Excellence for Advanced Materials and Structures, Polish Acad. Sci., Warsaw.
February 2003	Visitor at the University of Akron, USA.
August 2003- August 2004	Distinguished Professor at the University of Illinois at Chicago, USA (on sabbatical).
2012-2015	Visiting Professor at Korea University, Seoul (S. Korea)

Teaching Experience

1985 - 1989	Faculty of Molecular and Chemical Physics, Moscow Physico-Technical Institute Moscow, USSR. <i>Rheology and hydrodynamics of polymeric liquids</i> (undergrad. course)
1988 - 1990	Moscow Aviation Technology Institute, Moscow, USSR. <i>General physics</i> (undergrad. course) Prepared undergraduate course of lectures " <i>Technological Hydrodynamics</i> "
1990 -	Technion, Haifa, Israel Hydrodynamics (undergraduate course) Heat transfer (undergraduate course) Introductory combustion (undergraduate and graduate course) Convective heat transfer (graduate course) Advanced topics in fluid dynamics and rheology (graduate course)
1996-1997	Chemical Engineering Department, University of Wisconsin-Madison, USA. <i>Momentum and heat transfer operations</i> - CHE 326 (undergrad. course)
1999	Technical University of Darmstadt, Department of Mechanical Engineering, Darmstadt, Germany. <i>Advanced topics in fluid dynamics and rheology</i> (graduate course).
2000	University of Erlangen - Nurnberg, Germany. <i>Advanced topics in fluid mechanics, heat transfer and rheology</i> (graduate course).
2002	Centre of Excellence for Advanced Materials and Structures, Polish Acad. Sci.

Electrospinning of nanofibers from polymer solutions and melts.

2006-	University of Illinois at Chicago, USA <i>Transport phenomena in micro- and nanotechnology (ME494)</i> <i>Fluid Mechanics I (ME211)</i> <i>Fluid Mechanics Lab.</i> <i>Intermediate Thermodynamics (ME325)</i> <i>Fundamentals of Turbulence (ME518)</i> <i>Introduction to Thermodynamics (ME205)</i> <i>Probability and Statistics for Engineers (IE342)</i> <i>Heat Conduction (ME521)</i> <i>Mathematical Methods for Engineers (ME494)</i>
2009, 2011	Center for Smart Interfaces, TU Darmstadt, Germany <i>Microfluidics</i>
2017	<i>Atomization and Sprays</i>
2012 -2013	Korea University (Seoul, S. Korea) <i>Transport phenomena in micro- and nanotechnology (ME594)</i> <i>Heat Conduction (ME521)</i>
2014-2017	Korea University (Seoul, S. Korea) <i>Advanced Applied Mathematics: Complex Analysis with Applications to Hydro- and Aerodynamics, Heat and Mass Transfer, Electricity, Control Theory and the Theory of Elasticity (extended ME494)</i>
2017	Technical University Darmstadt, Germany: One of the lecturers of the short course <i>Atomization and Sprays</i>
2018	National Nanotechnology Laboratory for Agrobusiness (Embrapa). Sao Carlos, Brazil, August 13-18, 2018. A week-long course 'Electrospinning and solution blow spinning. Fundamentals and recent advances'.
2019	Technical University Darmstadt, Germany: One of the lecturers of the short course <i>Atomization and Sprays</i>
2020	Technical University Darmstadt, Germany: One of the lecturers of the short course <i>Atomization and Sprays</i>
2021	Technical University Darmstadt, Germany: One of the lecturers of the short course <i>Atomization and Sprays</i>

Administrative Posts

1992	Member of the Local Organizing Committee of XVIII International Congress of Theoretical and Applied Mechanics in Haifa, Israel.
1992 - present	Member of the Technion Committee for evaluation of new immigrants beginning studies for M.Sc. and D.Sc. degrees.
1993-1995	Member of the interfaculty committee for graduate studies for M.E. degree in Polymer Engineering.
1994/5	Coordinator of the Department seminar.
1995/6	Chairman of the paper review committee of the 26th Israel conference on Mechanical Engineering.
1997/8	Chairman of the 27th Israel Conference on Mechanical Engineering.

- 2004 Co-Chair for the Pre-nominated Session on the topic "Complex and smart fluids". The 21st International Congress of Theoretical and Applied Mechanics (ICTAM) in Warsaw, Poland from 15-21 August 2004.
- 2008 Co-Chair for the Pre-nominated Session on the topic "Complex and smart fluids". The 22st International Congress of Theoretical and Applied Mechanics (ICTAM) in Adelaide, Australia, August 2008.
- 2017 Co-Chair of the Focus Session on "The Physics of Electrospray and Electrospinning" at the 70th Annual Meeting of the Division of Fluid Dynamics of the American Physical Society at Denver, November 19-21^s 2017.
- 2017 Member of the International Advisory Committee of the 5th International Conference Electrospin2018, Stellenbosch, South Africa.
- 2020 Session organizer and Chairperson at Filtration International Conference & Exposition, Feb. 25-27, 2020, Chicago, USA.

Reviewing and Refereeing

AIP Advances
 ACSNano
 ACS Applied Materials & Interfaces
 ACS Industrial&Engineering Chemistry Research
 ACS Applied Polymer Materials
 ACS Biomaterials Science&Engineering
 Acta Biomaterialia
 Fluid Dynamics
 Journal of the Royal Society Interfaces
 Journal of Engineering Physics
 Mechanics
 J. of Tribology, Trans. ASME
 Int. J. Multiphase Flow
 J. Rheology
 J. Aerosol Science
 Physics of Fluids
 J. Fluid Mechanics
 ZAMP
 Experiments in Fluids
 Chemical Society Reviews
 J. Appl. Phys.
 Appl. Phys. Letters
 Europhysics Letters
 Nano Letters
 Nanoscale
 Computers & Fluids
 Fluid Dynamics Research
 Lab on a Chip
 Int. J. of Solids and Structures
 Macromolecular Chemistry&Physics

Macromolecular Materials&Engineering
Mathematical Models & Methods in Applied Sciences : M3AS
Advances in Colloid and Interface Science
Polymer
J. Aerosol Science
 Macromolecules
Macromolecular Rapid Communications
Journal of Polymer Science, Part B
Advanced Materials
Advanced Functional Materials
Langmuir
 Chemical Engineering Science
Biomacromolecules
J. Phys. Chem.
AIChE Journal
Biotechnology Journal
Synthetic Metals
Physica A
e-Polymer
Journal of Electrostatics
The ASME Journal of Heat Transfer
European Journal of Applied Mathematics
The European Physical Journal E
Journal of the American Chemical Society
 Journal of Chemical Physics
Journal of the American Ceramic Society
 Computational Fluid Dynamics
 International Journal of Turbo & Jet Engines
 Atomization and Sprays
 J. Sound and Vibration
ASME Journal of Vibration and Acoustics.
Wave Motion
 International Journal of Impact Engineering
 International Journal of Thermal Sciences
International Journal of Heat and Mass Transfer
International Journal of Heat and Fluid Flow
J. of the Electrochemical Society
 J. of Theoretical Biology
J. of Biomedical Materials Research: Part A
Macromolecular Bioscience
Chemistry of Materials
Journal of Non-Newtonian Fluid Mechanics
Journal of Applied Polymer Science
Polymer Engineering&Science
Journal of Thermophysics
Journal of Engineering Mathematics
AIChE Journal
Physical Review Letters
Physical Review Letters A
Physical Review Letters E
Physical Review Fluids
European Polymer Journal
Proceedings of the Royal Society of London A
Materials Chemistry and Physics
Journal of Materials Science
Soft Matter
Materials Science and Engineering B

Archives of Mechanics
 IEEE IAS Transactions
 IEEE-TDEI (Transactions on Dielectrics and Electrical Insulation)
 Acta Mechanica
 New Journal of Physics
 Journal of Materials Research
 Process Biochemistry
 Chemical Communications
 Composite Science and Technology
 Experimental Thermal and Fluid Science
 Engineering Analysis with Boundary Elements
 Journal of Mathematics in Industry
 Bulletin of the Polish Academy of Sciences
 Separation and Purification Technology
 Composites B
 International Symposium on Two-Phase Flow
 Modelling and Experimentation, October 9-11, 1995,
 Roma, Italy.
 The Israel Science Foundation administered by the Israel
 Academy of Sciences and Humanities.
 The German-Israeli Foundation for Scientific Research and
 Development.
 The 11th International Heat Transfer Conference, Kyongju,
 Korea, 1998.
 Ministry of Science, Culture and Sport, Israel
 2nd International Symposium on Two-Phase Flow Modelling
 & Experimentation, Pisa, Italy, 1999
 Israeli Ministry of Science
 Swiss National Science Foundation
 United States - Israel Binational Science Foundation
 The National Science Foundation, USA
 DTRA, USA
 National Science Center, Poland

Member of the Editorial Advisory Board of "Experiments in Fluids" from July 2003.
 Member of the International Editorial Advisory Board of the Bulletin of the Polish
 Academy of Sciences from 2004.
 Member of the International Editorial Advisory Board of Archives of Mechanics from
 2014.
 Member of the Editorial Advisory Board of the journal "Electrospinning", from 2014.
 Member of the Editorial Advisory Board of 'Physics of Fluids' from 2019.
 Editor of "Springer Handbook of Experimental Fluid Mechanics"-published in 2008.
 Associate Editor of "Experiments in Fluids" 2011-present.

Awards and Fellowships

January 1974	University Award for "Outstanding Student Research", Polytechnic Institute of Leningrad
1980 - 1990	Five Awards in the Institute for Problems in Mechanics USSR Acad. Sci. Contests of research works.
1992 - 1995	Rashi Foundation, The Israel Academy of Sciences and Humanities
1996	First Prize Award for an Excellent Poster Presentation at the

- 26th Israel Conference on Mechanical Engineering
- 1998 First Prize Award for the best poster presentation at the 11th Intern. Heat Transfer Conf., Kyongju, Korea.
- 1999 Gutwirth Award, Technion
- 2003 Prize for Technological Development for Defense against Terror, American Technion Society
- 2005 Hershel Rich Prize – Technion Innovation Award
- 2006 3rd Prize of Society of Mechanics, Taiwan
- 2008-2012 Fellow of the Center of Excellence “Smart Interfaces”, Technical University of Darmstadt, Germany
- 2011 Most Cited Article 2006-2010 [Elsevier: Polymer v. 49, N 10, 2387-2425 (2008)].
- 2016 Fellow of the American Physical Society.

Membership

American Physical Society
 Materials Research Society
 American Society for Gravitational and Space Research

Research Grants

- 1989 - 1990 Institute of Radiotechnics and Electronics, USSR Acad. Sci., "Theoretical foundations of advanced technologies in optoelectronics", 50 000 rubles.
- 1990 - 1992 Research Grant of the Center for Absorption in Science, Ministry of Immigration Absorption (State of Israel).
- 1992 - 1995 Guastalla Fellowship established by Rashi Foundation, The Israel Academy of Sciences and Humanities "Coating growth on a plate in a gas flow with polydisperse particles", \$ 30000.
- 1994 - 1996 Grant of the MAFAT, State of Israel, NIS 180000.
- 1995 - 1998 Grant of the German Israeli Foundation for Scientific Research and Development, DM 273500.
- 1999 - 2002 Grant from the United States - Israel Binational Science Foundation, \$ 150000.
- 1999 - 2001 Grant of the German Israeli Foundation for Scientific Research and Development, DM 495700.
- 1999 Grant from "Superfine Ltd.", NIS 35000.
- 2000 - 2004 Grant from the Israeli Academy of Sciences, “Nanofibers for applications in MEMS, Nanotechnology, biotechnology, and medicine” \$ 220000.
- 2001 Grant from RAFAEL, NIS 20000.

- 2003 Grant from RAFAEL, NIS 30000.
- 2001-2004 Grant from the Center for Nuclear Research, Soreq, \$26700.
- 2002 Grant from MAFAT, State of Israel, "Polymer nanofibers reinforced with carbon nanotubes" \$280000.
- 2001-2003 Grant from MAFAT, State of Israel, "Optimal design and manufacturing of light and small flying objects based on nanofibers." \$25000.
- 2003-2004 Joint Technion- Hebrew University Fund "Developing a nanofiber-based platform for application of antifungal compounds." \$5000
- 2003 Magnet consortium, \$60000.
- 2003 - 2007 Grant from the Israeli Academy of Sciences, \$ 220000 (estimated).
- 2004-2006 Grant from VolkswagenStiftung, Germany , Euro 467400.
- 2004-2006 Magneton consortium, \$ 316848 for the 1st year, Israel.
- 2005-2006 Grant from MAFAT, State of Israel, \$70000.
- 2006-2007 „ Polymer-based Composite Nanofibers by Coelectrospinning“ (PI) Grant from VolkswagenStiftung, Germany , \$100000.
- 2006-2010 „Nanotube-Based Nanofluidic Devices and Fundamental Fluid Studies in the Nanoscale" (co-PI, one of 5) National Science Foundation, NSF-NIRT, \$1,000,000, USA.
- 2007-2008 "Regulating Drug Delivery with Polymeric Nanofibers" National Science Foundation, NSF-NER, (co-PI) \$100,000, USA.
- 2009-2011 "Characterization of Rheological Behavior of Gypsum Slurries, Joint Compounds and Other Material Blends", (PI) Grant from United States Gypsum Company, \$ 227697, USA.
- 2009-2010 "Filled Carbon Nanotubes: Superior Latent Heat Storage Enhancers" (co-PI Department of Energy, \$110000, USA.
- 2010-2013 "Structure-Property Process Relationships for Meltblowing" (PI) The Nonwovens Cooperative Research Center (NCRC), \$134780, USA.
- 2010-2013 "Electrically-driven Dielectric Fluid Flows with Phase Change in Micro- and Nano-scales" National Science Foundation, (co-PI) \$350000, USA.
- 2010-2013 "Drop Impact on Porous Nano-textured Surfaces" (PI) NASA, \$360000, USA
- 2010-2014 "Direct Formation of Soy Rich Nonwovens from Solution" (PI) Grant from United Soybean Board, \$200000, USA.
- 2011-2014 "Fundamental Study of Hydrophobic and Hydrophilic Fibers in Filtration Media and their Effect on Droplet Impact, Coalescence and Penetration" (PI) Nonwovens Cooperative Research Center (NCRC), \$150000, USA.
- 2011-2015 "Heat Transfer Characteristics of a Fluid with Nano-encapsulated Phase Change

- Materials” (co-PI) National Science Foundation, \$260000, USA.
- 2011-2015 “Characterization of Rheological Behavior of Gypsum Slurries, Joint Compounds and Other Material Blends”, (PI) Grant from United States Gypsum Company, (PI) \$ 450000, USA.
- 2012-2015 “Spinning Oriented Nanofibers That are Below 50 Nanometers” (PI) Nonwovens Cooperative Research Center (NCRC), \$165000, USA.
- 2013-2016 “Modeling of Meltblowing Process Conditions” (PI) Nonwovens Cooperative Research Center (NCRC), \$165000, USA.
- 2013-2016 “Spray Cooling in Flooding Regime: Pool Boiling on Nano-Textured Surfaces” (PI), NASA, \$450000, USA.
- 2014-2017 “Investigation of bio-polymers and their associated limitations/applications in technical nonwovens” (PI) Nonwovens Cooperative Research Center (NCRC), \$155000, USA.
- 2014-2017 “Heat transfer during the thermoplastic nonwoven molding process” (PI) Nonwovens Cooperative Research Center (NCRC), \$140000, USA.
- 2014-2017 “Micro-crack prevention nanotechnology via supersonic blown ultra-thin/ultra-light/transparent self-healing nanofibers” (the US PI) \$191000, The Agency for Defense Development (Republic of Korea)
- 2015-2018 “Finding the region of origin of bloodspatters in complex situations: Novel physics-based methods and tools” (co-PI), Department of Justice, \$719015, USA.
- 2015-2018 “GOALI: Liquid charging in electrostatic atomizers for coating and painting applications” (co-PI), NSF, \$350000.
- 2015-2017 “Mass transfer of energetic materials: Modeling and experimental studies”, (PI), The Defense Security Cooperation Agency (DSCA)-DOD USA+Ministry of Defence, Government of Israel, \$300000.
- 2015-2016 “Mechanical behavior of paper; effect of particle-size distribution on rheological properties of gypsum slurry; building acoustics” (PI) Grant from United States Gypsum Company, (PI) \$ 75000, USA.
- 2016-2017 “Mechanical behavior of paper & acoustic performance of flat panel” (PI) Grant from United States Gypsum Company, (PI) \$ 75000, USA.
- 2017-2020 “Bonding Area/Pattern That Affect the Properties of Nonwoven: Experiments and Modeling” (PI) Nonwovens Cooperative Research Center (NCRC), \$170000, USA.
- 2017-2021 “Stationary and swing-like pool boiling for microgravity applications for cooling of high-power microelectronics” (PI), NASA, \$320000.
- 2017-2019 “In-depth study of mechanical behavior and constitutive modeling of fibers” (PI) Nonwovens Institute (NI), \$150000, USA.
- 2017-2019 “Sustainable nonwovens: high performance hydroentangled nonwovens with minimized process energy consumption” (PI) Nonwovens Institute (NI), \$150000, USA.

- 2017-2020 “Propagation of flame front of forest fire over a hilly landscape”, (PI), The Defense Security Cooperation Agency (DSCA)-DOD USA+Ministry of Defence, Government of Israel, \$175000.
- 2018-2019 “Paper Modification to Increase Nailpull & Acoustic Performance of Flat Panels with Transmission Losses” (PI) Grant from United States Gypsum Company, (PI) \$ 75000, USA.
- 2018-2020 “Investigation of fiber properties and web properties in spunbond process when webs are laying down on collecting belts” (PI) Nonwovens Institute (NI), \$150000, USA.
- 2018-2020 ‘Holographic Investigation and 3D database of Breakup Mechanisms of Blood’ (co-PI), Department of Justice, J. Michael, D. Attinger and A.L. Yarin \$105000, USA.
- 2018-2021 “Programming ink deposition dynamically: The new science of direct ink writing” (co-PI) National Science Foundation, \$425857, USA.
- 2019-2020 “Acoustic Performance (Transmission and Absorption) of Single & Multi-Layered Flat Panels and Paper Properties Related to Nailpull” (PI) Grant from United States Gypsum Company, (PI) \$ 75000, USA.
- 2019-2022 “Probability of Fiber-Fiber Touching and Roping in Meltblowing at Smaller Inter-nozzle Distances” (PI) Nonwovens Institute (NI), \$150000, USA.
- 2019-2022 “GOALI: Controlled Coating via Charged Droplet Impact and Deposition on Dielectric and Conducting Surfaces” (co-PI) National Science Foundation, \$427437, USA.
- 2020-2023 “Bio-polymers: Alternative polymers, and use of blends and additives to enhance value” (PI) Nonwovens Institute (NI), \$150000, USA.

**List of Publications: Books published– 5; Chapters in books - 12;
Papers in professional journals -418; Submitted papers-3; Papers
in proceedings of professional conferences – 60, Miscellaneous
publications - 7**

Theses:

1. A.L. Yarin, "Turbulent Boundary Layer with Large Adverse Pressure Gradients", M.Sc. Thesis, Polytechnic Institute of Leningrad, Faculty of Physics and Mechanics, Leningrad, USSR (1977).
2. A.L. Yarin, "Theoretical Study of the Dynamics and Break-up of Free Liquid Jets". Ph.D., Candidate of Sciences (Phys., Math.) Thesis, Institute for Problems in Mechanics Acad. Sci. USSR, Moscow (1980).
3. A.L. Yarin, "Strong Flows of Polymeric Liquids in Jets and Films: Rheology and Hydrodynamics", Doctor of Science (Phys., Math.) Habilitation Thesis, Institute for Problems in Mechanics Acad. Sci. USSR, Moscow (1989).

Books

1. A.L. Yarin, *Free Liquid Jets and Films: Hydrodynamics and Rheology*. Longman Scientific & Technical and Wiley & Sons, Harlow, New York, 1993, 446 pp.
2. A.L. Yarin, *Electrospinning of Nanofibers from Polymer Solutions and Melts*. Lecture Notes 5. Centre of Excellence for Advanced Materials and Structures, Warsaw, 2003, 110 pp.
3. A.L. Yarin, B. Pourdeyhimi, S. Ramakrishna. *Fundamentals and Applications of Micro- and Nanofibers*. Cambridge University Press, Cambridge, 2014.
4. A.L. Yarin, I.V. Roisman, C. Tropea. *Collision Phenomena in Liquids and Solids*. Cambridge University Press, Cambridge, 2017.
5. A. L. Yarin, M. W. Lee, S. An, and S. S. Yoon, *Self-Healing Nanotextured Vascular Engineering Materials*. Springer Nature, Switzerland AG, Cham, 2019.

Chapters in books

1. V.M. Entov and A.L. Yarin, "Dynamics of Free Liquid Jets and Films of Viscous and Rheologically Complex Liquids". *Advances in Mechanics*, VINITI, Mekhanika Zhidkosti i Gaza (Fluid Dynamics), 18, 112-197 (1984) (in Russian).
2. A.L. Yarin, "Self-similarity". *Springer Handbook of Experimental Fluid Mechanics*, pp. 57-82 (2007).
3. A.L. Yarin, "Drop Impact Dynamics: Splashing, Spreading, Receding, Bouncing...". *Annual Review of Fluid Mechanics* v.38, 159-192 (2006).
4. D.H. Reneker, A.L. Yarin, E. Zussman and H. Xu, "Electrospinning of Nanofibers from Polymer Solutions and Melts" *Advances in Applied Mechanics* v. 41, 43-195 (2007).
5. D.H. Reneker, A.L. Yarin, E. Zussman, S. Koombhongse and W. Kataphinan, "Nanofiber Manufacturing: Toward Better Process Control" *American Chemical Society Series 918*, Chapter 2 (Eds. D.H. Reneker and H. Fong), 7-20, 2006.
- 6.....C.J. Thompson, G.G. Case, A.L. Yarin and D.H. Reneker, "Effects of Parameters on Nanofiber Diameter Determined from Electrospinning Model", *Nanotechnology Research: New Nanostructures*. (Xiaohua Huang, Ed.). Chapter 6, pp. 223-242, Nova Science Publishers Inc., 2007.
7. J.K. Wise, M. Cho, E. Zussman, C.M. Megaridis and A.L. Yarin, "Electrospinning techniques to control deposition and structural alignment of nanofibrous scaffolds for cellular orientation and cytoskeletal reorganization", *Nanotechnology and Tissue Engineering*, pp. 243-260. (Editors: C.T. Laurencin and L.S. Nair) CRC Press, Taylor and Francis (2008).
8. J.K. Wise, E. Zussman, A.L. Yarin, C.M. Megaridis, M. Cho. "Electrospinning techniques to control deposition and structural alignment of nanofibrous scaffolds for cellular orientation and cytoskeletal reorganization", *Nanotechnology and Tissue Engineering*, 2nd Edition (Editors: C.T. Laurencin and L.S. Nair), pp. 285- 303, CRC Press, Taylor and Francis (2014).
9. N. Ashgriz, A.L. Yarin. Chapter 1. Capillary instability of free liquid jets. *Springer Handbook of Atomization and Sprays*, pp. 3-53, Springer, Heidelberg (2011).

10. A.L. Yarin. Chapter 2. Bending and buckling instabilities of free liquid jets: experiments and general quasi-one-dimensional model. Springer Handbook of Atomization and Sprays, pp. 55-73, Springer, Heidelberg (2011).
11. S. Sinha-Ray, Y. Zhang, A.L. Yarin, S.C. Davis, B. Pourdeyhimi. Solution blowing of soy protein fibers. Chapter 20 in Biobased Monomers, Polymers, and Materials (Editors: Smith, P.B., Gross R.A.). pp. 335-348. American Chemical Society Symposium Series 1105, Washington, 2012 (distributed by Oxford University Press).
12. J.K. Wise, M. Cho, E. Zussman, C.M. Megaridis and A.L. Yarin, "Electrospinning techniques to control deposition and structural alignment of nanofibrous scaffolds for cellular orientation and cytoskeletal reorganization", *Nanotechnology and Regenerative Engineering*, pp. 285-303. (Editors: C.T. Laurencin and L.S. Nair) CRC Press, Taylor and Francis (2015).

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Invited Talks

1. International Seminar "Mechanics and Physics of Plasma and Gas Flow - Aerodynamics of Combustion", Riga, USSR, 1986.
2. 5th National Symposium on "Optical Fibres and Their Applications", Warsaw, Poland, 1989.
3. 6th National Congress on Theoretical and Applied Mechanics, Varna, Bulgaria, 1989.
4. International workshop "Boiling", Bruxelles, Belgium, 1993.
5. Ben Gurion University of the Negev, Beer-Sheva, 1991, 1999.
6. Tel-Aviv University, 1992, 2001.
7. Hebrew University, Jerusalem, 1998.

8. A Newton Institute Euroconference "Constitutive Relations and their Applications", Cambridge, U.K., 1996.
9. Institute of Physics, Slovak Academy of Sciences, Bratislava, Czechoslovakia, 1989, 1990.
10. Institut für Strömungslehre und Wärmeübertragung. Technische Universität Wien, Austria, 1990.
11. Max-Planck-Institut für Strömungsforschung, Göttingen, Germany, 1992, 1993, 1994.
12. Laboratoire PMMH, ESPCI, French Academy of Sciences, Paris, 1994.
13. University of Erlangen - Nurnberg, Erlangen, Germany, 1994, 1995, 1997, 2000.
14. Rheology Research Center, University of Wisconsin - Madison, U.S.A., 1996, 2000, 2004.
15. University of Cambridge, Newton Institute, Cambridge, U.K., 1996.
16. University of Akron, U.S.A., 1997, 1999, 2000, 2001, 2005, 2008.
17. Northwestern University, Chicago, U.S.A., 1997, 2007, 2017.
18. The University of Illinois at Chicago, Chicago, U.S.A., 1997, 2005.
19. Massachusetts Institute of Technology, Boston, 1997, 2004.
20. University of Southern California, Los-Angeles, U.S.A., 1997, 2004.
21. University of Michigan, Ann-Arbor, U.S.A., 1997.
22. Technical University of Darmstadt, Darmstadt, Germany, 1998, 2000, 2003, 2008.
23. University of Nebraska, Lincoln, Nebraska, U.S.A., 1999, 2006.
24. Istanbul Technical University, Istanbul, Turkey, 1999.
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30. Case Western Reserve University, Cleveland, U.S.A., 2002.
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32. Centre of Excellence for Advanced Materials and Structures and Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland 2002.
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39. 2nd International Conference on Complex Materials, Stuttgart, Germany, 2005.
40. 25th German-Israeli Conference, Dresden, Germany, 2005.
41. University of Chicago, 2006.
42. "Donaldson", Company, Minneapolis, 2006.
43. "3M", Company, Minneapolis, 2006; 2012.
44. North Carolina State University, MemFAST Meeting, 2007.
45. ETH, Zurich, Switzerland, 2007.
46. Master Class on "Near-wall Interfacial Transport Phenomena"- Technical University of Darmstadt, 2008.
47. Seminar "Optische Messtechniken fuer die Charakterisierung von Transportprozessen an Grenzflächen", Hirshegg-Kleinwalsertal, Austria, 2008.
48. University of Notre Dame, Notre Dame, USA, 2008.
49. International Workshop "Electrostatic Atomization of Electrically Insulating Liquids: Principles and Applications", Southampton, UK, March 2009.
50. Workshop at Hewlett-Packard-Indigo, Company, Rehovot, Israel, May 2009.
51. Technion-Israel Institute of Technology, Haifa, May 2009; December 2010; January 2016, December 2016.
52. Phillips-Universitat Marburg, Germany, July 2009.
53. Eindhoven University, Holland, September 2009.
54. Fourth International Meeting on Nanotechnology, Guadalajara, Mexico, July 2009.
55. Tokyo Institute of Technology, May 2010.
56. 16th European Conference on Mathematics for Industry, Wuppertal, Germany, July, 2010.
57. Fraunhofer Institute, Kaiserslautern, Germany, August 2010.
58. 8th Central European Symposium on Pharmaceutical Technology, September 2010, Graz, Austria
59. Technical University of Graz, September 2010, Austria.
60. The 57th AVS International Symposium, Albuquerque, NM, October,

2010, USA.

61. Using Sources of Hard X-Rays, Chicago, Argonne National Laboratory.
62. Wayne State University, Detroit, March 2011.
63. North Dakota State University, Fargo, North Dakota, April 2011.
64. 18th Ostwald Kolloquium, Mainz, Germany, May 16-18, 2011.
65. Institute of Fundamental Technical Problems, Polish Academy of Sciences, May 2011.
66. Korea University, Seoul, S. Korea, July 2011.
67. Seoul National University, Seoul, S. Korea, July 2011, July 2013.

68. Max-Planck-Institut für Polymerforschung, Mainz, Germany, February 2012.
69. Southeast University, Nanjing, China, July 2012.
70. Michigan Technological University, October, 2012.
71. Worcester Polytechnic Institute, January, 2013.
72. North Carolina State University, October, 2013.
73. University of Minnesota, Minneapolis, February, 2014.
74. United States Gypsum Research Facility, August, 2014.
75. California State University Northridge, February, 2015.
76. Iowa State University, Ames, April 2015.
77. University of Bayreuth, Germany, March 2016.
78. The University of Sydney, Australia, June 2016.
79. Royal Melbourne Institute of Technology (RMIT), Melbourne, Australia, June 2016.
80. University of Canterbury, Christchurch, New Zealand, June 2016.
81. The University of Auckland, Auckland, New Zealand, June 2016.
82. Cambridge University, Cambridge, U.K., September 2016.
83. Technical University Darmstadt, Darmstadt, Germany, February 2017.
84. University of Lisbon, Lisbon, Portugal, June 2017.
85. University of Seville, Spain, June 2017.
86. Korea Institute of Science and Technology (KIST), Jeonbuk branch, South Korea, July 2017.

87. Kyoto Institute of Technology, Japan, June 2018.
88. National Nanotechnology Laboratory for Agrobusiness (Embrapa). Sao Carlos, Brazil, August 2018.
89. Clemson University, February 2019.
90. Korea University, May 2019.
91. Korea Institute of Science and Technology (KIST), Jeonbuk branch, South Korea, June 2019.
92. Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland, July 2019.
93. AGH University of Science and Technology, Krakow, Poland, July 2019.
94. University of Mar Del Plata, Division Polimeros Biomedicos, INTEMA CONICET, Mar Del Plata, Argentina, December 2019.
95. Georgia Tech (Georgia Institute of Technology), Atlanta, USA, February, 2021.
96. Sungkyunkwan University (S. Korea), Aug. 19, 2021.

Participation in international congresses

- | | |
|----------------|---|
| November 1986 | Second International Colloquium on Dust Explosions. Jadwisin, Poland (the paper was accepted and published). |
| 1987 | 18th Symposium on Advanced Problems and Methods in Fluid Mechanics, Warsaw, Poland (the paper was accepted and published). |
| February 1989 | 5th National Symposium on "Optical Fibres and Their Applications", Warsaw, Poland. |
| April 1989 | 5th Annual Meeting of the Polymer Processing Society, Kyoto, Japan (the paper was accepted and published). |
| September 1989 | 6th National Congress on Theoretical and Applied Mechanics, Bulgaria, Varna. |
| April 1990 | 6th Annual Meeting of the Polymer Processing Society, Nice, France (the paper was accepted and published). |
| July 1990 | 1st ISAIIF, Beijing, China (the paper was accepted and published). |
| August 1990 | Ninth International Heat Transfer Conference, Jerusalem, Israel. |
| September 1990 | Golden Jubilee Meeting of the British Society of Rheology and Third European Rheology Conference, Edinburgh, U.K. (the paper was accepted and published). |

- August 1991 International Conference on Hydrodynamics of Technological Processes for Materials Production, Sofia, Bulgaria (the paper was presented by the coauthor).
- August 1991 6th Annual Conference of the European Consortium of Mathematics in Industry (ECMI), Limerick, Ireland (the paper was presented by the coauthor).
- September 1991 1st European Fluid Mechanics Conference, Cambridge, U.K.
- January 1992 International Conference on Heterogeneous Combustion, Dead Sea, Israel.
- August 1992 XVIII International Congress of Theoretical and Applied Mechanics, Haifa, Israel (speaker and a member of the Local Organizing Committee).
- September 1993 International workshop "Boiling" held in the Université Libre de Bruxelles.
- September 1994 2nd European Fluid Mechanics Conference, Warsaw, Poland (the paper was accepted and presented by the coauthor).
- April 1995 Euromech Colloquium 332 - Drag Reduction, Ravello, Italy.
- May 1995 15th International Symposium on Ballistics, Jerusalem, Israel.
- July 1995 3rd International Congress on Industrial and Applied Mathematics, Hamburg, Germany.
- September 1995 1st World Congress on Ultrasonics, Berlin, Germany (the paper was presented by the coauthor).
- April 1996 A Newton Institute Euroconference "Constitutive Relations and their Applications", Cambridge, U.K.
- July 1996 The Second World Congress of Nonlinear Analysis, Athens, Greece.
- July 1996 The ASME Fluids Engineering Division Summer Meeting, San Diego, California, U.S.A. (the paper was presented by the coauthor).
- August 1996 XIX International Congress of Theoretical and Applied Mechanics, Kyoto, Japan (the paper was presented by the coauthor).
- September 1996 Euromech Colloquium 355 - Interfacial Instabilities, Palaiseau, Paris, France (the paper was accepted and presented by the coauthor).
- November 1996 Annual Meeting of the American Institute of Chemical Engineering (AIChE), Chicago, USA.
- March 1997 Annual meeting of the 'Gesellschaft für Angewandte Mathematik und Mechanik' - GAMM, Regensburg, Germany (the paper was presented by the coauthor).
- May 1997 International Symposium on Advances in Computational Heat Transfer, Cesme, Izmir, Turkey, 1997 (the paper was presented by a coauthor).
- July 1997 Euromech 367 - 2nd European Coating Symposium, Strasbourg, France (the paper was presented by the coauthor).
- August 1997 The 7th International Conference on Liquid Atomization and Spray Systems (ICLASS '97), Seoul, Korea (the paper was presented by the coauthor).

- September 1997 3rd 'European Fluid Mechanics Conference, Göttingen, Germany (the paper was presented by the coauthor).
- November 1997 Applications of Power Ultrasound in Physical and Chemical Processing. Toulouse, France (the paper was presented by the coauthor).
- March 1998 Interne Arbeitssitzungen der GVC-Fachausschüsse "Kristallisation", "Mehrphasenströmungen", "Technische Reaktionsführung" (GVC)/ "Technische Reaktionen" (DECHEMA), "Mischvorgänge", "Rheologie" and "Wärme- und Stoffübertragung" vom 2. bis 6. März 1998 in Aachen, Germany (the paper was presented by a coauthor).
- June 1998 3rd International Conference on Multiphase Flow 98, Lyon, France.
- July 1998 14th Annual Conference on Liquid Atomization and Spray Systems, Manchester, England (the paper was presented by a coauthor).
- July 1998 Workshop "Liquid Interface Interactions: Drop-wall and Drop-drop Impacts". Techn. Univ. Darmstadt, Germany.
- August 1998 11th International Heat Transfer Conference, Korea (the paper was presented by a coauthor).
- September 1998 8th International Symposium on Flow Visualization, Sorrento, Italy.
- March 1999 GVC meeting in Bad Kissingen, Germany (the paper was presented by a coauthor).
- February 2000 GVC workshop in Baden-Baden "Rheologie" (the paper was presented by a coauthor).
- July 2000 8th International Conference on Liquid Atomization and Spray Systems (ICLASS'2000), Pasadena, U.S.A., (the paper was presented by a coauthor).
- August 2000 XX International Congress of Theoretical and Applied Mechanics, Chicago, U.S.A.
- September 2000 16th Annual Conf. on Liquid Atomization and Spray Systems, Darmstadt, Germany (the paper was presented by a coauthor).
- November 2000 4th Euromech Fluid Mechanics Conference, Eindhoven, Holland.
- January 2001 9th Polychar World Forum on Polymer Applications and Theory, Denton, TX, U.S.A. (the paper was presented by a coauthor).
- February 2001 GVC workshop in Weimar "Rheologie" (the paper was presented by a coauthor).
- March 2001 GVC workshop in Raderborn "Trocknungstechnik" (the paper was presented by a coauthor).
- May 2001 The Fiber Society Spring 2001 Meeting "New Frontiers in Fiber-Based Products", Raleigh, NC, U.S.A.
- September 2001 ILASS-Europe 2001, Zurich, Sept. 2-6, Switzerland
- November 2001 AIChE National Meeting, Reno, NV, November 4-9, 2001 (the work was presented by a coauthor).

- December 2001 Bi-National Israel-Britain Workshop on “Applied Mathematical Methods in Spray Combustion”, Beer-Sheva, Israel.
- 2002 10th Polychar World Forum on Polymer Applications and Theory.
- August 2002 IEEE-NANO’2002, Second Conference on Nanotechnology, Aug. 26-28, Washington DC, USA.
- September 2002 ILASS-Europe 2002, Zaragoza, Sept.9-11, Spain.
- November 2002 The German-Israeli Workshop, Nanochemistry-2002, Eilat, Israel.
- August 2003 The 5th Euromech Fluid Mechanics Conference, Toulouse, Aug. 24-28, France
- September 2003 226th American Chemical Society Meeting, New York, Sept.7-11, U.S.A.
- March 2004 Annual APS March Meeting, Montreal, Canada, 2004.
- 2004 The NT’04 International Conference on the Science and Application of Nanotubes, San Luis Potosi, Mexico, 2004.
- August 2004 21th International Congress of Theoretical and Applied Mechanics, Warsaw, Poland
- August 2004 Symposium and Exhibition, AUVSI’s Unmanned Systems, North America 2004, Anaheim, California, U.S.S., Aug. 3-5, 2004
- June 2005 2nd International Conference on Complex Materials, Stuttgart, Germany, 2005.
- June 2005 25th German-Israeli Conference, Dresden, Germany, 2005.
- September 2005 Biomedical Engineering Society Annual Fall Meeting, Baltimore, USA, 2005 (the work was presented by the coauthor).
- November 2005 American Physical Society meeting at Chicago, Minisymposium "Fluid Transport in Nanotubes and Nanochannels" (the work was presented by the coauthor).
- October 2006 Biomedical Engineering Society Annual Fall Meeting, Chicago, USA, 2006 (the work was presented by the coauthor).
- November 2006 ASME Congress, Chicago, USA.
- April 2007 MRS Spring Meeting, San Francisco, CA, USA, April 9-13 (the work was presented by the student).
- October 2007 Conference on Advanced Fibers and Polymer Materials, Shanghai, China, Oct. 15-17 (the work was presented by a coauthors).
- May 2008 International Graz Congress for Pharmaceutical Engineering, Graz, Austria (the work was presented by my coauthor).
- October 2008 ASME International Manufacturing Science and Engineering Conference, Collocated with the 3rd JSME/ASME International Conference on Materials and Processing Chicago (the works were presented by the students).
- March 2009 Electrostatic Atomization of Electrically Insulating Liquid: Principles

- and Applications. International Workshop. Southampton UK, March 2-3. (invited speaker)
- April 2009 MRS Spring Meeting. San Francisco, CA, USA, April 13-17, (the work was presented by the student).
- July 2009 European Polymer Congress 09, July 12-17, Graz, Austria (the work was presented by my coauthor).
- July 2009 Fourth International Meeting on Nanotechnology, Guadalajara, Mexico.
- November 2009 62nd Annual Meeting of the APS Division of Fluid, Minneapolis, USA, 2009.
- March 2010 American Physical Society Meeting, Portland, Oregon, USA.
- May-June 2010 7 th International Conference on Multiphase Flow 2010 (ICMF-2010), Tampa, Florida, USA.
- June 2010 Third International Conference on Porous Media and its Applications in Science, Engineering and Industry, Montecatini, Italy.
- July 2010 16th European Conference on Mathematics for Industry, Wuppertal, Germany.
- August 2010 Nanofibers for the 3rd Millenium, Raleigh, N.C.
- September 2010 8th Central European Symposium on Pharmaceutical Technology 2010, Graz, Austria (keynote speaker).
- October 2010 Workshop on Evolution and Control of Complexity: Key Experiments. Using Sources of Hard X-Rays, Chicago, Argonne National Laboratory.
- April 2011 Materials Research Society, Spring Meeting, April 25-29, San Francisco, USA.
- May 2011 18th Ostwald Kolloquium, Mainz, Germany, May 16-18, 2011 (invited speaker).
- August 2011 Fibers&Thermoplastics, USB TAP Meeting, Raleigh, N.C., Aug. 2-3, 2011.
- August 2011 Nanofibers for the 3rd Millenium, Raleigh, N.C., Aug. 29-31, 2011.
- May-June 2012 2nd International Conference on Electrospinning, Jeju, S. Korea, May 29-June 1 (keynote speaker).
- July 2012 ASME 2012 Summer Heat Transfer Conference HT2012 July 8-12, 2012, Rio Grande, Puerto Rico.
- July 2012 III National Conference of Nano and Micromechanics, Warsaw, Poland, July 4-6 (invited speaker).

- September 2012 MSE 2012 Conference in Darmstadt, Germany (25-27 September).
- 2011 Nanotechnology Materials and Devices Conference (NMDC), 2012 IEEE
- April 2013 Materials Research Society Spring Meeting, San Francisco, USA
- May 2013 International Workshop “Mathematics of Splashing” at the International Centre for Mathematical Sciences (Edinburgh, UK); May 28-31 (invited speaker).
- September 2013 13th International Symposium on Polymeric Materials, Bayreuth, Germany (invited speaker).
- November 2013 66th Annual APS-DFD Meeting, November 24-26, 2013, Pittsburg
- March 2014 American Physical Society (APS) Meeting, Denver
- June 2014 Fluid Mechanics Colloquium and Celebration on the occasion of the 60th birthday of Prof. Dr.-Ing. Cameron Tropea (invited speaker)
- July 2014 International Workshop on Electrospinning for High Performance Applications. Donghua University, Shanghai, China (invited speaker).
- August 2014 3rd International Conference on Electrospinning, San Francisco, USA, Aug. 4-7 (keynote speaker).
- October 2014 American Filtration and Separations Society. Next Generation Filter Media Conference. Chicago, USA, October 14-15.
- October 2014 30th Annual meeting of the American Society for Gravitational and Space Research, Pasadena, USA, October 22-26.
- February 2015 Research, Innovation & Science for Engineered Fabrics Conference and Nanofibers for the Third Millenium (RISE & N3M), Miami, USA, February 9-12.
- May 2015 The 15th Conference of the International Association of Colloid and Interface Scientists in Mainz, Germany (keynote speaker), May 24-29.
- July 2015 The 11th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, 20-23 July, Kruger National Park, South Africa (keynote speaker).
- August 2015 ASME 2015: Joint International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (InterPACK) and the International Conference on Nanochannels, Microchannels and Minichannels (ICNMM), San Francisco, USA.

- September 2015 International Conference NART-2015: Nanofibers, Applications and Related Technologies, Liberec, The Czech Republic, Sept 1-3, 2015 (keynote speaker).
- November 2015 31st Annual meeting of American Society for Gravitational and Space Research, Alexandria, Virginia, Nov. 10-14, 2015, U.S.A.
- November 2015 68th Annual Meeting of the American Physical Society, Division of Fluid Dynamics. 22-24 November 2015, Boston, U.S.A.
- March 2016 American Physical Society Meeting, Baltimore, March 14-18, U.S.A. (the work was presented by the student).
- April 2016 10TH World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology, 4-7 April, Glasgow, U.K. (the work was presented by the student).
- June-July 2016 The 4th International Conference Electrospin 2016, June 28-July 1, Otranto, Italy (invited speaker).
- June 2016 7th European Thermal-Sciences Conference, 19-23 June 2016, Krakow, Poland (the work was presented by the coauthor).
- September 2016 27th European Conference of Liquid Atomization and Spray Systems, 4-7 Sept. Brighton, U.K. (keynote speaker).
- September 2016 NART 2016, Nanofibers, Applications and Related Technologies, Sept. 13-15, Raleigh, NC, USA.
- October 2016 32th Annual meeting of the American Society for Gravitational and Space Research, Cleveland, USA, October 26-27.
- November 2016 69th American Physical Society Meeting, Division of Fluid Dynamics, Portland, USA.
- March 2017 American Physical Society Meeting, New Orleans, USA (the work was presented by the student).
- September 2017 The XVI Brazil Materials Research Society Meeting, Gramado, Brazil, September 10th to September 14th 2017, (Plenary Speaker).
- September 2017 International Conference NART-2017: Nanofibers, Applications and Related Technologies, Liberec, The Czech Republic, Sept 25-28, 2017 (plenary speaker).
- November 2017 American Physical Society Meeting, Division of Fluid Dynamics, Nov. 19-21 Denver, USA.
- November 2017 33th Annual meeting of the American Society for Gravitational and Space Research, Seattle, USA.

- January 2018 The 5th International Conference Electrospin 2018, January 16-January 18, Stellenbosch, South Africa (invited speaker).
- June 2018 The 7th World Congress on Biopolymers and Polymer Chemistry, Osaka, Japan, June 4-6 (keynote speaker).
- July 2018 ICLASS 2018: 14TH INTERNATIONAL CONFERENCE ON LIQUID ATOMIZATION & SPRAY SYSTEMS July 22-26, 2018 – Chicago, USA
- October 2018 Filtration2018, International Conference & Exposition, October 2-4, 2018, Philadelphia, USA (plenary speaker).
- November 2018 34th Annual meeting of the American Society for Gravitational and Space Research, Bethesda, Maryland, USA, October 31-Nov. 3, 2018.
- November 2018 71st American Physical Society Meeting, Division of Fluid Dynamics, Atlanta, USA.
- November 2018 2018-Sustainable Industrial Processing Summit&Exhibition, 4-7 November, 2018, Rio de Janeiro, Brazil (keynote speaker).
- July 2019 6th Conference on Nano- and Micromechanics, July 3-5, 2019, Rzeszow, Poland (keynote speaker).
- September 2019 International Conference NART-2019: Nanofibers, Applications and Related Technologies, Liberec, The Czech Republic, Sept 18-20, 2019 (keynote speaker).
- October 2019 NASA SLPSRA Fluid Physics Workshop, October 16-17, 2019, Cleveland, USA.
- November 2019 35th Annual meeting of the American Society for Gravitational and Space Denver, USA, November 23-Nov. 26, 2019.
- November 2019 72nd American Physical Society Meeting, Division of Fluid Dynamics, Seattle, Nov. 23-26, USA.
- February 2020 Filtration International Conference & Exposition, Feb. 25-27, 2020, Chicago, USA (keynote speaker).
- November 2020 73rd American Physical Society Meeting, Division of Fluid Dynamics, Chicago, Nov. 22-25, USA.
- April 13, 2021 Virtual World Dental Congress of the FDI World Dental Congress.
- July 2021 16th US National Congress on Computational Mechanics, July 25-29, 2021, Chicago, USA.
- August 19, 2021 Sungkyunkwan University (S. Korea). 2021 61st Summer Korean Vacuum Society Conference (keynote speaker).

- August 2021 ICLASS 2021, 15th Triennial International Conference on Liquid Atomization and Spray Systems, Edinburgh, UK, 29 Aug. - 2 Sept. 2021.
- August 2021 61st KVS: Online Distinguished Lecture Series for Young Scientists Sungkyunkwan University (S. Korea).
- September 2021 International Conference NART-2021: Nanofibers, Applications and Related Technologies, Istanbul, Turkey, Sept 8-10, 2021 (keynote speaker).

Graduate and postgraduate students supervision

- 1977 V. Churlyayev - M.Sc. in Physical Engineering (joint supervision with Dr. V.M. Entov)
- 1982 - 1983 L. Semenova - M.Sc. in Physical Engineering (joint supervision with Dr. V. M. Entov)
- 1984 A. Naimanova - M.Sc. in Appl. Math. (joint supervision with Prof. K.E. Dzhaugashtin)
- 1985 G. Iskhakova - M.Sc. in Appl. Math. (joint supervision with Prof. K.E. Dzhaugashtin)
- 1984 - 1987 M. Murzabayev - Ph.D. (Candidate of Phys.- Math. Sciences) (joint supervision with Prof. K.E. Dzhaugashtin)
- 1985 - 1988 T. Getmanyuk - Ph.D. (Candidate of Chemical Sciences) (joint supervision with Prof. V.G. Kulichikhin)
- 1985 - 1988 Fam Khyu Ty - Ph.D. (Candidate of Phys.- Math. Sciences) (joint supervision with Dr. V.M. Entov)
- 1988 - 1990 T. Nudlina - Ph.D. (Candidate of Phys.- Math. Sciences) expected to graduate in 1990.
- 1987 - 1990 M. Kryuchkova - M.Sc. in Mech. Engineering
- 1990 - 1994 E. Moses (Ph.D. student, joint supervision with Prof. P. Bar-Yoseph)
- 1992 - 1994 I. Roisman (M.Sc. student)
- 1994 - 1995 D.A. Weiss (postdoctorant)
- 1994 - 1998 I. Roisman (Ph.D. student, joint supervision with Prof. M. Rubin)
- 1996 - 1998 M. Rozentswaig (M.Sc. student)

1996 - 2000 Sh. Kahana (M.Sc. student)
1997 - 1998 D. Lastochkin (Ph.D. student, joint supervision with Prof. Z. Tadmor)
1997 - 1998 D. Shavit (M.E. student)
1998 - 2000 D. Shavit (M.Sc. student)
1997 - 1999 G. Yosiphon (M.Sc. student)
1998 - 2003 E. Gilboa (M.Sc. student)
2001 - 2001 Y. Bendet-Rozer (M.E. student)
2001 -2003 E. Eshkoli (PhD student, joint supervision with Prof. P. Bar-Yoseph)
2001 - 2004 O. Feingold (M.E. student)
2002- 2005 E. Katz (M.Sc. student)
2002 - 2004 A. Noiberger (Ph.D. student, joint supervision with Prof. D. Rittel)
2003- 2005 Z. Sobe (M.Sc. student)
2005 - 2005 E. Katz (PhD student)
2006 B. Sautter (PhD student)
2006 –2010 S. Raman (PhD student)
2006-2009 M. Tiwari (PhD student)
2006-2008 K. Sun (PhD student)
2006-2015 M. Mustafa (PhD student)
2006-2007 A.V. Bazilevsky (postdoctorant)
2007-2011 Suman Sinha-Ray (PhD student)
2011-2013 Suman Sinha-Ray (postdoctorant)
2007 D. Placke (postdoctorant)
2008- 2012 Y. Zhang (PhD student)
2008-2009 C. Steffes (PhD student)
2008-2012 A. Lembach (PhD student)
2010-2019 A. Kolbasov (PhD student)

2010-2014 R. Sahu (PhD student)
2014-2015 R. Sahu (postdoctorant)
2010-2013 S. Jun (PhD student)
2010-2014 D. Pelot (PhD student)
2010-2013 Sh. Khansari (PhD student)
2011-2016 S. Sett (PhD student)
2011-2016 Sumit Sinha-Ray (PhD student)
2012-2013 M. Plakhotnyuk (MS student)
2013- 2016 M.W. Lee (postdoctorant)
2012-2019 A. Ghosal (PhD student)
2014-2019 C. Staszal (PhD student)
2014-2019 P. Comiskey (PhD student)
2015-2019 W. Zhang (PhD student)
2015- A. Sankaran (PhD student)
2016- G. Li (PhD student)
2017- K. Chen (PhD student)
2012-2017 D. Dannessa (PhD student)
2015-2016 S. Duzyer (postdoctorant)
2016-2020 S. An (postdoctorant)
2017- J. Plog (PhD student)
2018- M. Hamphill (PhD student)
2018-2020 P. Shinde (MS student)
2019- Y. Dias (PhD student)
2019- V. Kumar Balakrishnan (PhD student)
2020- F. Varghese (MS student)
2020- R. Granda (PhD student)

2020- Y. Wang (PhD student)