Ilia Roisman

List of Publications by Citations

120 papers	4,349 citations	33 h-index	63 g-index
137 ext. papers	5,094 ext. citations	3.7 avg, IF	5.96 L-index

#	Paper	IF	Citations
120	Drop impact onto a liquid layer of finite thickness: dynamics of the cavity evolution. *Physical Review E*, **2009**, 79, 036306	2.4	326
119	Dynamic contact angle of spreading droplets: Experiments and simulations. *Physics of Fluids*, **2005**, 17, 062103	4.4	292
118	Normal impact of a liquid drop on a dry surface: model for spreading and receding. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2002**, 458, 1411-1430	2.4	277
117	Inertia dominated drop collisions. II. An analytical solution of the Navier–Stokes equations for a spreading viscous film. *Physics of Fluids*, **2009**, 21, 052104	4.4	232
116	Drop collisions with simple and complex surfaces. *Current Opinion in Colloid and Interface Science*, **2011**, 16, 292-302	7.6	206
115	Impact of a drop onto a wetted wall: description of crown formation and propagation. *Journal of Fluid Mechanics*, **2002**, 472, 373-397	3.7	153
114	Inertia dominated drop collisions. I. On the universal flow in the lamella. *Physics of Fluids*, **2009**, 21, 052103	4.4	127
113	Spray impact: Rim transverse instability initiating fingering and splash, and description of a secondary spray. *Physics of Fluids*, **2006**, 18, 102104	4.4	124
112	Characterization of super liquid-repellent surfaces. *Current Opinion in Colloid and Interface Science*, **2014**, 19, 343-354	7.6	117
111	Investigations on the impact of a drop onto a small spherical target. *Physics of Fluids*, **2007**, 19, 032102	4.4	117
110	Effect of ambient pressure on penetration of a diesel spray. *International Journal of Multiphase Flow*, **2007**, 33, 904-920	3.6	107
109	From drop impact physics to spray cooling models: a critical review. *Experiments in Fluids*, **2018**, 59, 1	2.5	105
108	Drop impact, spreading, splashing, and penetration into electrospun nanofiber mats. *Langmuir*, **2010**, 26, 9516-23	4	104
107	Drop impact onto a dry surface: Role of the dynamic contact angle. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2008**, 322, 183-191	5.1	86
106	Multiple Drop Impact onto a Dry Solid Substrate. *Journal of Colloid and Interface Science*, **2002**, 256, 396-410	3.3	84
105	Collision Phenomena in Liquids and Solids **2017**,		76
104	Drop splashing induced by target roughness and porosity: The size plays no role. *Advances in Colloid and Interface Science*, **2015**, 222, 615-21	14.3	68

103	Chaotic rotation of triaxial ellipsoids in simple shear flow. *Journal of Fluid Mechanics*, **1997**, 340, 83-100	3.7	65
102	Inverse-Leidenfrost phenomenon on nanofiber mats on hot surfaces. *Physical Review E*, **2011**, 84, 036310	2.4	61
101	Heat transfer in the film boiling regime: Single drop impact and spray cooling. *International Journal of Heat and Mass Transfer*, **2017**, 110, 34-42	4.9	60
100	Penetration of a rigid projectile into an elastic-plastic target of finite thickness. *International Journal of Impact Engineering*, **1995**, 16, 801-831	4	60
99	Crater evolution after the impact of a drop onto a semi-infinite liquid target. *Physical Review E*, **2010**, 82, 036319	2.4	53
98	Nonisothermal drop impact and evaporation on polymer nanofiber mats. *Physical Review E*, **2011**, 83, 036305	2.4	49
97	Thermal atomisation of a liquid drop after impact onto a hot substrate. *Journal of Fluid Mechanics*, **2018**, 842, 87-101	3.7	48
96	Dynamics of inertia dominated binary drop collisions. *Physics of Fluids*, **2004**, 16, 3438-3449	4.4	48
95	Fast forced liquid film spreading on a substrate: flow, heat transfer and phase transition. *Journal of Fluid Mechanics*, **2010**, 656, 189-204	3.7	44
94	MODELING OF SPRAY IMPACT ON SOLID SURFACES. *Atomization and Sprays*, **2000**, 10, 387-408	1.2	40
93	Fluctuating flow in a liquid layer and secondary spray created by an impacting spray. *International Journal of Multiphase Flow*, **2005**, 31, 179-200	3.6	39
92	Dynamics of the cavity and the surface film for impingements of single drops on liquid films of various thicknesses. *Journal of Colloid and Interface Science*, **2010**, 350, 336-43	9.3	38
91	Oblique penetration of a rigid projectile into an elastic-plastic target. *International Journal of Impact Engineering*, **1997**, 19, 769-795	4	38
90	Imaging internal flows in a drying sessile polymer dispersion drop using Spectral Radar Optical Coherence Tomography (SR-OCT). *Journal of Colloid and Interface Science*, **2013**, 395, 287-93	9.3	37
89	Transient effects in ice nucleation of a water drop impacting onto a cold substrate. *Physical Review E*, **2017**, 95, 022805	2.4	36
88	Hybrid Hairy Janus Particles for Anti-Icing and De-Icing Surfaces: Synergism of Properties and Effects. *Chemistry of Materials*, **2016**, 28, 6995-7005	9.6	34
87	Inertia dominated flow and heat transfer in liquid drop spreading on a hot substrate. *International Journal of Heat and Fluid Flow*, **2011**, 32, 785-795	2.4	33
86	Ice crystal impact onto a dry solid wall. Particle fragmentation. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2015**, 471, 20150399	2.4	30

85	Droplet-air collision dynamics: evolution of the film thickness. *Physical Review E*, **2014**, 89, 013023	2.4	30
84	Binary collisions of drops of immiscible liquids. *Journal of Fluid Mechanics*, **2012**, 690, 512-535	3.7	30
83	Oblique penetration of a rigid projectile into a thick elastic–plastic target: theory and experiment. *International Journal of Impact Engineering*, **1999**, 22, 707-726	4	30
82	Normal impact of supercooled water drops onto a smooth ice surface: experiments and modelling. *Journal of Fluid Mechanics*, **2018**, 835, 1087-1107	3.7	30
81	Characterization of secondary droplets during thermal atomization regime. *Experimental Thermal and Fluid Science*, **2018**, 98, 516-522	3	29
80	Heat transfer during simultaneous impact of two drops onto a hot solid substrate. *International Journal of Heat and Mass Transfer*, **2017**, 113, 898-907	4.9	28
79	On the instability of a free viscous rim. *Journal of Fluid Mechanics*, **2010**, 661, 206-228	3.7	28
78	Splash of a drop impacting onto a solid substrate wetted by a thin film of another liquid. *Physical Review Fluids*, **2018**, 3,	2.8	27
77	Breakup and atomization of a stretching crown. *Physical Review E*, **2007**, 76, 026302	2.4	26
76	Drop impact on chemically structured arrays. *Journal of Physics Condensed Matter*, **2005**, 17, S595-S605	1.8	26
75	Dislodging a sessile drop by a high-Reynolds-number shear flow at subfreezing temperatures. *Physical Review E*, **2015**, 92, 023007	2.4	25
74	Comparative assessment of Volume-of-Fluid and Level-Set methods by relevance to dendritic ice growth in supercooled water. *Computers and Fluids*, **2013**, 79, 44-52	2.8	25
73	Propagation of a kinematic instability in a liquid layer: capillary and gravity effects. *Physical Review E*, **2008**, 77, 046305	2.4	25
72	Drop collision with a hot, dry solid substrate: Heat transfer during nucleate boiling. *Physical Review Fluids*, **2017**, 2,	2.8	24
71	Influence of solidification on the impact of supercooled water drops onto cold surfaces. *Experiments in Fluids*, **2015**, 56, 1	2.5	23
70	On the splashing of high-speed drops impacting a dry surface. *Journal of Fluid Mechanics*, **2020**, 892,	3.7	23
69	Computations of spontaneous rise of a rivulet in a corner of a vertical square capillary. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2018**, 544, 118-126	5.1	22
68	Normal penetration of an eroding projectile into an elastic–plastic target. *International Journal of Impact Engineering*, **2001**, 25, 573-597	4	22

67	Model for ballistic fragmentation and behind-armor debris. *International Journal of Impact Engineering*, **2000**, 24, 171-201	4	22
66	Computational modelling of flow and conjugate heat transfer of a drop impacting onto a cold wall. *International Journal of Heat and Mass Transfer*, **2017**, 109, 971-980	4.9	20
65	Crystallization of supercooled water: A level-set-based modeling of the dendrite tip velocity. *International Journal of Heat and Mass Transfer*, **2013**, 66, 830-837	4.9	20
64	Impact of a crushing ice particle onto a dry solid wall. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2015**, 471, 20150525	2.4	19
63	Fluctuations of a spray generated by an airblast atomizer. *Experiments in Fluids*, **2009**, 46, 1081-1091	2.5	18
62	On the influence of surface tension during the impact of particles on a liquid-gaseous interface. *Physics of Fluids*, **2016**, 28, 012108	4.4	17
61	Fast transient spray cooling of a hot thick target. *Journal of Fluid Mechanics*, **2019**, 881, 84-103	3.7	17
60	Spontaneous rise in open rectangular channels under gravity. *Journal of Colloid and Interface Science*, **2018**, 527, 151-158	9.3	16
59	Towards modelling of initial and final stages of supercooled water solidification. *International Journal of Thermal Sciences*, **2015**, 92, 150-161	4.1	15
58	Investigation of the Impact Behaviour of Ice Particles **2014**,		15
57	Gravity effect on spray impact and spray cooling. *Microgravity Science and Technology*, **2007**, 19, 151-154	1.6	14
56	Supercooled Water Drops Do Not Freeze During Impact on Hybrid Janus Particle-Based Surfaces. *Chemistry of Materials*, **2019**, 31, 112-123	9.6	13
55	3D computation of an incipient motion of a sessile drop on a rigid surface with contact angle hysteresis. *Theoretical and Computational Fluid Dynamics*, **2015**, 29, 373-390	2.3	12
54	Magic carpet breakup of a drop impacting onto a heated surface in a depressurized environment. *International Journal of Heat and Mass Transfer*, **2019**, 145, 118729	4.9	12
53	The hydrodynamics of drop impact onto chemically structured surfaces. *Journal of Physics Condensed Matter*, **2005**, 17, S607-S622	1.8	12
52	Thermal stability control of the water-in-diesel microemulsion fuel produced by using a nonionic surfactant combined with aliphatic alcohols. *Journal of Dispersion Science and Technology*, **2020**, 41, 771-778	1.5	12
51	Behavior of charged and uncharged drops in high alternating tangential electric fields. *Physical Review E*, **2020**, 101, 023102	2.4	11
50	Shape evolution of a melting nonspherical particle. *Physical Review E*, **2015**, 92, 033012	2.4	11

49	Study of the internal flow in a rotary atomizer and its influence on the properties of the resulting spray. *International Journal of Multiphase Flow*, **2018**, 100, 30-40	3.6	11
48	Pinch-off of a stretching viscous filament and drop transport. *New Journal of Physics*, **2015**, 17, 083059	2.9	10
47	Spray Generated by an Airblast Atomizer Under Elevated Ambient Pressures. *Journal of Propulsion and Power*, **2010**, 26, 1170-1183	1.8	9
46	Transport processes in a wet granular ice layer: Model for ice accretion and shedding. *International Journal of Heat and Mass Transfer*, **2016**, 97, 461-472	4.9	9
45	Laser based measurement of water film thickness for the application in exhaust after-treatment processes. *International Journal of Heat and Fluid Flow*, **2018**, 71, 288-294	2.4	8
44	Numerical investigation of ice particle accretion on heated surfaces with application to aircraft engines **2014**,		8
43	Spray Generated by an Airblast Atomizer at High-Pressure Conditions **2007**, 619		8
42	CHARACTERIZATION OF A SPRAY GENERATED BY AN AIRBLAST ATOMIZERWITH PREFILMER. *Atomization and Sprays*, **2010**, 20, 887-903	1.2	8
41	Capillary rivulet rise in real-world corners. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2020**, 592, 124530	5.1	7
40	Aerodynamically driven motion of a wall-bounded drop on a smooth solid substrate. *Physical Review Fluids*, **2019**, 4,	2.8	7
39	Modelling of the breakup process of viscous fluids by a high-speed rotary atomizer. *Experiments in Fluids*, **2018**, 59, 1	2.5	6
38	Splashing of a Newtonian drop impacted onto a solid substrate coated by a thin soft layer. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2018**, 553, 89-96	5.1	6
37	Note on Dynamics of inertia dominated binary drop collisions[Phys. Fluids 16, 3438 (2004)]. *Physics of Fluids*, **2009**, 21, 022101	4.4	6
36	Secondary atomization of water-in-oil emulsion drops impinging on a heated surface in the film boiling regime. *International Journal of Heat and Mass Transfer*, **2021**, 165, 120672	4.9	6
35	Investigation of the Melting Behaviour of Ice Particles in an Acoustic Levitator **2014**,		5
34	Pinch-off of a viscous liquid bridge stretched with high Reynolds numbers. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2020**, 587, 124271	5.1	5
33	Water Drop Impact on Cold Surfaces with Solidification **2011**,		4
32	Heat Transfer During Drop Impact Onto a Heated Solid Substrate **2010**,		4

31	Evaluation of spray/wall interaction data. *Measurement Science and Technology*, **2011**, 22, 065402	2	4
30	Numerical and Experimental Study of Spray Produced by an Airblast Atomizer Under Elevated Pressure Conditions **2008**,		4
29	Wetting and icing of surfaces. *Current Opinion in Colloid and Interface Science*, **2021**, 53, 101400	7.6	4
28	Millisecond fluid pattern formation in the nip of a gravure printing machine. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2019**, 575, 222-229	5.1	3
27	Investigations on the Influence of Fuel Oil Film Interaction on Pre-ignition Events in Highly Boosted DI Gasoline Engines **2018**,		3
26	Fast liquid sheet and filament dynamics in the fluid splitting process. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2018**, 557, 20-27	5.1	3
25	CHAOTIC DISINTEGRATION OF A LIQUID WALL FILM: A MODEL OF AN AIR-BLAST ATOMIZATION. *Atomization and Sprays*, **2010**, 20, 837-845	1.2	3
24	Fingering instability of a viscous liquid bridge stretched by an accelerating substrate. *Journal of Fluid Mechanics*, **2020**, 899,	3.7	3
23	Measurements and modelling of the residual mass upon impact of supercooled liquid drops. *Experiments in Fluids*, **2021**, 62, 1	2.5	3
22	Primary Atomization in an Airblast Gas Turbine Atomizer. *Fluid Mechanics and Its Applications*, **2013**, 3-27	0.2	2
21	Shuffling gait motion of an aerodynamically driven wall-bound drop. *Physical Review Fluids*, **2020**, 5,	2.8	2
20	FLUX MEASUREMENTS IN SPRAYS USING PHASE DOPPLER TECHNIQUES. *Atomization and Sprays*, **2001**, 11, 34	1.2	2
19	Experimental Investigation of AdBlue Film Formation in a Generic SCR Test Bench and Numerical Analysis Using LES. *Applied Sciences (Switzerland)*, **2021**, 11, 6907	2.6	2
18	Inception of ice accretion by ice crystal impact. *Journal of Physics: Conference Series*, **2016**, 745, 032013	0.3	2
17	Thermosuperrepellency of a hot substrate caused by vapour percolation. *Communications Physics*, **2021**, 4,	5.4	2
16	Hydrodynamic model of a collision of a spherical plastic ice particle with a perfectly rigid substrate. *International Journal of Impact Engineering*, **2021**, 104019	4	2
15	Drops make a splash **2017**,		1
14	Drop Impact onto a Dry Solid Wall100-154		1

13	Drop Impact onto Dry Surfaces with Complex Morphology155-252		1
12	Impact of Supercooled Liquid Drops onto Cold Solid Substrates **2015**,		1
11	Measurement of the Heat Flux During a Drop Impact onto a Hot Dry Solid Surface Using Infrared Thermal Imaging. *Notes on Numerical Fluid Mechanics and Multidisciplinary Design*, **2020**, 553-562	0.3	1
10	Mode of Action of Silicone Drift Control Agents **2016**, 113-132		1
9	Computational Study of Hydrodynamics and Heat Transfer Associated with a Liquid Drop Impacting a Hot Surface **2011**, 543-548		1
8	Impact of electric charge and motion of water drops on the inception field strength of partial discharges. *Physical Review E*, **2020**, 102, 063101	2.4	1
7	Interfacial relaxation □Crucial for phase-field methods to capture low to high energy drop-film impacts. *International Journal of Heat and Fluid Flow*, **2022**, 94, 108943	2.4	1
6	Interaction between an aerodynamically driven, wall-bound drop and a single groove. *European Physical Journal: Special Topics*, **2020**, 229, 1757-1769	2.3	0
5	Optical investigation on the interaction between a fuel-spray and an oil wetted wall with the focus on secondary droplets. *International Journal of Engine Research*,146808742210952	2.7	0
4	Selected Basic Flows and Forces44-84		
3	Drop Impacts with Liquid Pools and Layers255-320		
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