

# Pierre Colinet

## List of Publications by Year in descending order

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107  
papers

2,733  
citations

185998

28  
h-index

243296

44  
g-index

115  
all docs

115  
docs citations

115  
times ranked

1699  
citing authors

#	ARTICLE	IF	CITATIONS
1	Universality of Tip Singularity Formation in Freezing Water Drops. <i>Physical Review Letters</i> , 2014, 113, 054301.	2.9	188
2	Marangoni Bursting: Evaporation-Induced Emulsification of Binary Mixtures on a Liquid Layer. <i>Physical Review Letters</i> , 2017, 118, 074504.	2.9	97
3	Surface-tension-driven instabilities of a pure liquid layer evaporating into an inert gas. <i>Journal of Colloid and Interface Science</i> , 2005, 285, 296-305.	5.0	96
4	Validity domain of the Benney equation including the Marangoni effect for closed and open flows. <i>Journal of Fluid Mechanics</i> , 2005, 527, 303-335.	1.4	95
5	Nonlinear evolution of nonuniformly heated falling liquid films. <i>Physics of Fluids</i> , 2002, 14, 4130-4151.	1.6	84
6	Vapor-Based Interferometric Measurement of Local Evaporation Rate and Interfacial Temperature of Evaporating Droplets. <i>Langmuir</i> , 2014, 30, 2002-2008.	1.6	84
7	On the refined integral method for the one-phase Stefan problem with time-dependent boundary conditions. <i>Applied Mathematical Modelling</i> , 2006, 30, 531-544.	2.2	69
8	Leidenfrost effect: Accurate drop shape modeling and refined scaling laws. <i>Physical Review E</i> , 2014, 90, 053011.	0.8	66
9	Effect of Marangoni Flows on the Shape of Thin Sessile Droplets Evaporating into Air. <i>Langmuir</i> , 2015, 31, 13334-13340.	1.6	65
10	On the Hopf bifurcation occurring in the two-layer Rayleigh-Bénard convective instability. <i>Physics of Fluids</i> , 1994, 6, 2631-2639.	1.6	60
11	Interfacial nonequilibrium and Bénard-Marangoni instability of a liquid-vapor system. <i>Physical Review E</i> , 2003, 68, 041601.	0.8	55
12	A comprehensive analysis of the evaporation of a liquid spherical drop. <i>Journal of Colloid and Interface Science</i> , 2015, 438, 306-317.	5.0	52
13	Final fate of a Leidenfrost droplet: Explosion or takeoff. <i>Science Advances</i> , 2019, 5, eaav8081.	4.7	51
14	Bénard instabilities in a binary-liquid layer evaporating into an inert gas. <i>Journal of Colloid and Interface Science</i> , 2010, 349, 331-353.	5.0	48
15	Leidenfrost drops on a heated liquid pool. <i>Physical Review Fluids</i> , 2016, 1, .	1.0	46
16	Nonmonotonic Rayleigh-Taylor Instabilities Driven by Gas-Liquid CO <sub>2</sub> Chemisorption. <i>Journal of Physical Chemistry B</i> , 2014, 118, 11323-11329.	1.2	45
17	Interfacial turbulence in evaporating liquids: Theory and preliminary results of the ITEL-master 9 sounding rocket experiment. <i>Advances in Space Research</i> , 2003, 32, 119-127.	1.2	39
18	Experimental study of gas-liquid mass transfer coupled with chemical reactions by digital holographic interferometry. <i>Chemical Engineering Science</i> , 2011, 66, 3400-3412.	1.9	38

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19	Leidenfrost drops cooling surfaces: theory and interferometric measurement. <i>Journal of Fluid Mechanics</i> , 2017, 827, 614-639.	1.4	38
20	Interaction of three-dimensional hydrodynamic and thermocapillary instabilities in film flows. <i>Physical Review E</i> , 2008, 78, 066311.	0.8	37
21	Contact line arrest in solidifying spreading drops. <i>Physical Review Fluids</i> , 2017, 2, .	1.0	37
22	Singularity-free description of moving contact lines for volatile liquids. <i>Physical Review E</i> , 2013, 87, 010401.	0.8	35
23	Rayleigh-Marangoni oscillatory instability in a horizontal liquid layer heated from above: coupling and mode mixing of internal and surface dilational waves. <i>Journal of Fluid Mechanics</i> , 2000, 405, 57-77.	1.4	34
24	HEXAGONAL MARANGONI CONVECTION IN A RECTANGULAR BOX WITH SLIPPERY WALLS. <i>Quarterly Journal of Mechanics and Applied Mathematics</i> , 1993, 46, 683-707.	0.5	32
25	On integrable singularities and apparent contact angles within a classical paradigm. <i>European Physical Journal: Special Topics</i> , 2011, 197, 89-113.	1.2	32
26	Experimental study of dispersion and miscible viscous fingering of initially circular samples in Hele-Shaw cells. <i>Physics of Fluids</i> , 2010, 22, .	1.6	29
27	Truncated versus Extended Microfilms at a Vapor-Liquid Contact Line on a Heated Substrate. <i>Langmuir</i> , 2011, 27, 1758-1769.	1.6	29
28	Disorder-induced hysteresis and nonlocality of contact line motion in chemically heterogeneous microchannels. <i>Physics of Fluids</i> , 2012, 24, .	1.6	29
29	Threshold of Bénard-Marangoni instability in drying liquid films. <i>Europhysics Letters</i> , 2012, 99, 34001.	0.7	28
30	Self-propelled Leidenfrost drops on a thermal gradient: A theoretical study. <i>Physics of Fluids</i> , 2017, 29, .	1.6	25
31	Onset of thermal ripples at the interface of an evaporating liquid under a flow of inert gas. <i>Experiments in Fluids</i> , 2012, 52, 1107-1119.	1.1	24
32	Two-layer Bénard-Marangoni instability and the limit of transverse and longitudinal waves. <i>Physical Review E</i> , 1998, 57, 2872-2884.	0.8	23
33	Bénard-Marangoni convection of a binary mixture as an example of an oscillatory bifurcation under strong symmetry-breaking effects. <i>Physica D: Nonlinear Phenomena</i> , 2000, 145, 84-109.	1.3	23
34	Thermal transients during the evaporation of a spherical liquid drop. <i>International Journal of Heat and Mass Transfer</i> , 2016, 97, 803-817.	2.5	22
35	Nonequilibrium Gibbs™ Criterion for Completely Wetting Volatile Liquids. <i>Langmuir</i> , 2014, 30, 11847-11852.	1.6	21
36	Magnetomigration of Rare-Earth Ions Triggered by Concentration Gradients. <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 5301-5305.	2.1	21

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37	Bubbles, drops, films: transferring heat in space. Europhysics News, 2008, 39, 23-25.	0.1	20
38	Gas absorption into a spherical liquid droplet: Numerical and theoretical study. Chemical Engineering Journal, 2012, 207-208, 851-864.	6.6	20
39	Direct numerical simulation of bubble-liquid mass transfer coupled with chemical reactions: Influence of bubble shape and interface contamination. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2011, 381, 130-138.	2.3	18
40	On the boundary immobilization and variable space grid methods for transient heat conduction problems with phase change: Discussion and refinement. Comptes Rendus - Mecanique, 2012, 340, 501-511.	2.1	18
41	Asymptotic theory for a Leidenfrost drop on a liquid pool. Journal of Fluid Mechanics, 2019, 863, 1157-1189.	1.4	18
42	CO2 absorption in aqueous solutions of N-(2-hydroxyethyl)piperazine: Experimental characterization using interferometry and modeling. Chemical Engineering Science, 2013, 100, 249-258.	1.9	17
43	Experimental and numerical analysis of buoyancy-induced instability during CO2 absorption in NaHCO3 and Na2CO3 aqueous solutions. Chemical Engineering Science, 2017, 157, 232-246.	1.9	17
44	Vapor-Mediated versus Substrate-Mediated Interactions between Volatile Droplets. Langmuir, 2019, 35, 7060-7065.	1.6	17
45	Influence of Bénard-Marangoni instability on the morphology of drying colloidal films. Soft Matter, 2019, 15, 2381-2390.	1.2	17
46	STEADY MICROSTRUCTURE OF A CONTACT LINE FOR A LIQUID ON A HEATED SURFACE OVERLAID WITH ITS PURE VAPOR: PARAMETRIC STUDY FOR A CLASSICAL MODEL. Multiphase Science and Technology, 2009, 21, 213-248.	0.2	17
47	Spatially quasiperiodic convection and temporal chaos in two-layer thermocapillary instabilities. Physical Review E, 1996, 54, 514-524.	0.8	16
48	Evaporation Rates and Bénard-Marangoni Supercriticality Levels for Liquid Layers Under an Inert Gas Flow. Microgravity Science and Technology, 2013, 25, 251-265.	0.7	16
49	Chemo-Hydrodynamical Instability Created by CO2 Absorption in an Aqueous Solution of NaHCO3 and Na2CO3. Microgravity Science and Technology, 2008, 20, 171-175.	0.7	15
50	Time-dependent Marangoni-Bénard instability of an evaporating binary-liquid layer including gas transients. Physics of Fluids, 2013, 25, .	1.6	15
51	Analyzing closed-fringe images using two-dimensional Fan wavelets. Applied Optics, 2015, 54, 2939.	0.9	15
52	Vapor-Liquid Steady Meniscus at a Superheated Wall: Asymptotics in an Intermediate Zone Near the Contact Line. Microgravity Science and Technology, 2010, 22, 249-255.	0.7	14
53	Leidenfrost drops: Effect of gravity. Europhysics Letters, 2015, 110, 24001.	0.7	14
54	Evaporation induced demixing in binary sessile drops. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2020, 602, 125052.	2.3	14

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55	Explosive Leidenfrost droplets. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	14
56	Self-induced flows enhance the levitation of Leidenfrost drops on liquid baths. <i>Physical Review Fluids</i> , 2020, 5, .	1.0	14
57	BÃ©nard instabilities in a binary-liquid layer evaporating into an inert gas: Stability of quasi-stationary and time-dependent reference profiles. <i>European Physical Journal: Special Topics</i> , 2011, 192, 71-81.	1.2	13
58	Asymptotic analysis of the evaporation dynamics of partially wetting droplets. <i>Journal of Fluid Mechanics</i> , 2017, 824, 574-623.	1.4	13
59	Magnetophoretic Sprinting: A Study on the Magnetic Properties of Aqueous Lanthanide Solutions. <i>Journal of Physical Chemistry C</i> , 2018, 122, 23675-23682.	1.5	13
60	Contact-line singularities resolved exclusively by the Kelvin effect: volatile liquids in air. <i>Journal of Fluid Mechanics</i> , 2019, 858, 881-916.	1.4	13
61	Evaporation dynamics of completely wetting drops on geometrically textured surfaces. <i>Europhysics Letters</i> , 2017, 120, 16001.	0.7	12
62	Multi-scale Numerical Modeling of Radial Heat Transfer in Grooved Heat Pipe Evaporators. <i>Microgravity Science and Technology</i> , 2008, 20, 293-297.	0.7	11
63	Spontaneous channeling of solitary pulses in heated-film flows. <i>Europhysics Letters</i> , 2008, 84, 64002.	0.7	11
64	Coupling between Mass Transfer and Chemical Reactions during the Absorption of CO <sub>2</sub> in a NaHCO <sub>3</sub> -Na <sub>2</sub> CO <sub>3</sub> Brine : Experimental and Theoretical Study. <i>International Journal of Chemical Reactor Engineering</i> , 2008, 6, .	0.6	10
65	Mathematical modeling of the drying of a spherical colloidal drop. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2019, 576, 110-122.	2.3	10
66	Controlling the wetting and evaporation dynamics of non-ideal volatile binary solutions. <i>Journal of Colloid and Interface Science</i> , 2021, 592, 319-328.	5.0	10
67	Marangoni bursting: Evaporation-induced emulsification of a two-component droplet. <i>Physical Review Fluids</i> , 2018, 3, .	1.0	10
68	Contact angle hysteresis in a microchannel: Statics. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	10
69	Multiplication of defects in hexagonal patterns. <i>Europhysics Letters</i> , 2002, 57, 480-486.	0.7	9
70	Marangoni effect from density variations in apolar ultrathin films. <i>Europhysics Letters</i> , 2006, 74, 861-867.	0.7	9
71	Importance of wave-number dependence of Biot numbers in one-sided models of evaporative Marangoni instability: Horizontal layer and spherical droplet. <i>Physical Review E</i> , 2015, 91, 053018.	0.8	9
72	Asymptotic analysis of the contact-line microregion for a perfectly wetting volatile liquid in a pure-vapor atmosphere. <i>Physical Review Fluids</i> , 2017, 2, .	1.0	9

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73	Theoretical analysis of a dynamic thermoconvective pattern in a circular container. <i>Physical Review E</i> , 2000, 61, 2663-2668.	0.8	8
74	Direct numerical simulation of the transfer from spherical bubbles to and aqueous solutions with clean and fully contaminated interface. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2010, 365, 28-35.	2.3	8
75	Organization of microbeads in Leidenfrost drops. <i>Soft Matter</i> , 2014, 10, 4061.	1.2	8
76	Assessment of the light extinction spectroscopy technique for submicron particle characterization. <i>Powder Technology</i> , 2016, 291, 375-382.	2.1	8
77	Effect of Magnetic Susceptibility Gradient on the Magnetomigration of Rare-Earth Ions. <i>Journal of Physical Chemistry C</i> , 2019, 123, 23131-23139.	1.5	8
78	Oscillatory Instability and High-Frequency Wave Modes in a Marangoni-Bénard Layer with Deformable Free Surface. <i>Journal of Non-Equilibrium Thermodynamics</i> , 2001, 25, 381-405.	2.4	8
79	Improving speed and precision of local frequency analysis using Gaussian ridge interpolation for wavelet and windowed Fourier ridge algorithms. <i>Optics and Lasers in Engineering</i> , 2016, 77, 54-63.	2.0	7
80	Contact line stick-slip motion and meniscus evolution on micrometer-size wavy fibres. <i>Journal of Colloid and Interface Science</i> , 2019, 540, 544-553.	5.0	7
81	Nonlinear Marangoni convection with the inclined temperature gradient in multilayer systems. <i>Physical Review E</i> , 2006, 73, 066310.	0.8	6
82	Lubrication-type analysis of thermo-hydraulic transport in a model grooved heat pipe. <i>Heat and Mass Transfer</i> , 2014, 50, 415-425.	1.2	6
83	Measuring contact angles of small spherical particles at planar fluid interfaces by Light Extinction. <i>Applied Physics Letters</i> , 2016, 108, 201605.	1.5	6
84	Influence of a nonlinear reference temperature profile on oscillatory Bénard-Marangoni convection. <i>Physical Review E</i> , 2003, 68, 066310.	0.8	5
85	The role of the Soret effect on Marangoni-Benard stability. <i>Lecture Notes in Physics</i> , 1991, , 281-294.	0.3	5
86	Evaporation-driven Contact Angles in a Pure-vapor Atmosphere : the Effect of Vapor Pressure Non-uniformity. <i>Mathematical Modelling of Natural Phenomena</i> , 2012, 7, 53-63.	0.9	4
87	Analyzing Droplets through Digital Holography and a 1D Wavelet Transform Technique. , 2013, , .		4
88	Some advances in lubrication-type theories. <i>European Physical Journal: Special Topics</i> , 2007, 146, 377-389.	1.2	3
89	Impact of an insoluble surfactant on the thresholds of evaporative Bénard-Marangoni instability under air. <i>European Physical Journal E</i> , 2017, 40, 90.	0.7	3
90	Measuring Vapour Cloud Concentrations with Digital Holography. , 2012, , .		3

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91	Waterâ€™propylene glycol sessile droplet shapes and migration: Marangoni mixing and separation of scales. Journal of Fluid Mechanics, 2022, 933, .	1.4	3
92	Two-Phase Flow Pattern and Pressure Drop in a Microchannel. , 2003, , 465.		2
93	Two-dimensional modelling of transient capillary driven damped micro-oscillations and self-alignment of objects in microassembly. Journal of Fluid Mechanics, 2021, 910, .	1.4	2
94	Contact angles for perfectly wetting pure liquids evaporating into air: Between de Gennes-type and other classical models. Physical Review Fluids, 2020, 5, .	1.0	2
95	Finite-amplitude regimes of the short-wave Marangoni-Benard convective instability. Physical Review E, 1995, 52, 2603-2616.	0.8	1
96	Anticonvection with an inclined temperature gradient. Physical Review E, 2002, 66, 056305.	0.8	1
97	Thermo-diffusion revisited: A comparative approach between two recent thermodynamic formalisms. Journal of Non-Equilibrium Thermodynamics, 2004, 29, .	2.4	1
98	Leidenfrost Drops. , 2015, , 85-99.		1
99	Experimental study on evaporation of droplets in microgravity and in the presence of electric field. Journal of Physics: Conference Series, 2022, 2177, 012047.	0.3	1
100	Oscillatory Instability and High-Frequency Wave Modes in a Marangoni-Benard Layer with Deformable Free Surface. Journal of Non-Equilibrium Thermodynamics, 2001, 25, .	2.4	0
101	Interferometric profiling of transparent objects in zero-fringe mode using 2D Fan Wavelets. , 2015, , .		0
102	Precursor Films and Contact Line Microstructures. , 2015, , 31-56.		0
103	Complex Fluids Droplets in Leidenfrost State. , 2015, , 369-379.		0
104	A Flexible Multi-Scale Two-Dimensional Model for Calculating the Radial Heat Transfer in Grooved Heat Pipes. , 2008, , .		0
105	Interfacial patterns and waves in liquid layers and thin films. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2010, , 1-56.	0.3	0
106	Genesis of Benardâ€™Marangoni Patterns in Thin Liquid Films Drying into Air. Understanding Complex Systems, 2013, , 95-104.	0.3	0
107	Fragmentation de Marangoni: les gouttes qui sâ€™â©clatent. , 2018, , 32-35.	0.1	0