

Mathieu Sellier

List of Publications by Year in descending order

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135
papers

1,839
citations

331670

21
h-index

315739

38
g-index

138
all docs

138
docs citations

138
times ranked

1816
citing authors

#	ARTICLE	IF	CITATIONS
1	Viscosity of α -pinene secondary organic material and implications for particle growth and reactivity. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 8014-8019.	7.1	388
2	Gravity-driven flow of continuous thin liquid films on non-porous substrates with topography. Journal of Fluid Mechanics, 2004, 509, 253-280.	3.4	123
3	Efficient and accurate time adaptive multigrid simulations of droplet spreading. International Journal for Numerical Methods in Fluids, 2004, 45, 1161-1186.	1.6	58
4	Review of necessary thermophysical properties and their sensitivities with temperature and electrolyte mass fractions for alkaline water electrolysis multiphysics modelling. International Journal of Hydrogen Energy, 2019, 44, 4553-4569.	7.1	51
5	Modeling the effects of contact angle hysteresis on the sliding of droplets down inclined surfaces. European Journal of Mechanics, B/Fluids, 2014, 48, 218-230.	2.5	49
6	Estimation of thermal conductivity, heat transfer coefficient, and heat flux using a three dimensional inverse analysis. International Journal of Thermal Sciences, 2016, 99, 258-270.	4.9	49
7	Flow of evaporating, gravity-driven thin liquid films over topography. Physics of Fluids, 2006, 18, 013601.	4.0	48
8	Validation of the poke-flow technique combined with simulations of fluid flow for determining viscosities in samples with small volumes and high viscosities. Atmospheric Measurement Techniques, 2015, 8, 2463-2472.	3.1	47
9	An iterative method for the inverse elasto-static problem. Journal of Fluids and Structures, 2011, 27, 1461-1470.	3.4	44
10	Estimation of linearly temperature-dependent thermal conductivity using an inverse analysis. International Journal of Thermal Sciences, 2017, 117, 68-76.	4.9	41
11	Modeling the coalescence of sessile droplets. Biomicrofluidics, 2009, 3, 22412.	2.4	38
12	Reconstruction of river bed topography from free surface data using a direct numerical approach in one-dimensional shallow water flow. Inverse Problems, 2011, 27, 025001.	2.0	36
13	Design of order-preserving algorithms for transient first-order systems with controllable numerical dissipation. International Journal for Numerical Methods in Engineering, 2011, 88, 1411-1448.	2.8	33
14	Inverse problems in free surface flows: a review. Acta Mechanica, 2016, 227, 913-935.	2.1	33
15	Eulerian Two-Fluid Model of Alkaline Water Electrolysis for Hydrogen Production. Energies, 2020, 13, 3394.	3.1	32
16	A computational model of hemodynamic parameters in cortical capillary networks. Journal of Theoretical Biology, 2011, 271, 145-156.	1.7	29
17	Self-propelling, coalescing droplets. International Journal of Multiphase Flow, 2011, 37, 462-468.	3.4	29
18	Thin film flow on surfaces containing arbitrary occlusions. Computers and Fluids, 2009, 38, 171-182.	2.5	26

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19	Thermal performances and emitter efficiency improvement studies on premixed micro-combustors with different geometric shapes for thermophotovoltaics applications. <i>Energy</i> , 2021, 226, 120298.	8.8	24
20	Substrate design or reconstruction from free surface data for thin film flows. <i>Physics of Fluids</i> , 2008, 20, 062106.	4.0	23
21	Droplet actuation induced by coalescence: Experimental evidences and phenomenological modeling. <i>European Physical Journal: Special Topics</i> , 2013, 219, 131-141.	2.6	22
22	Thermocapillary migration of droplets under molecular and gravitational forces. <i>Journal of Fluid Mechanics</i> , 2018, 847, 1-27.	3.4	20
23	An iterative algorithm for optimal mould design in high-precision compression moulding. <i>Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture</i> , 2007, 221, 25-33.	2.4	19
24	Surface tension of concentrated cellulose solutions in 1-ethyl-3-methylimidazolium acetate. <i>Cellulose</i> , 2016, 23, 1043-1050.	4.9	17
25	Optimal Shape Design in Heat Transfer Based on Body-Fitted Grid Generation. <i>International Journal for Computational Methods in Engineering Science and Mechanics</i> , 2013, 14, 227-243.	2.1	16
26	Estimating the viscosity of a highly viscous liquid droplet through the relaxation time of a dry spot. <i>Journal of Rheology</i> , 2015, 59, 733-750.	2.6	15
27	Efficiency improvement for geothermal power generation to meet summer peak demand. <i>Energy Policy</i> , 2009, 37, 3370-3376.	8.8	14
28	The Kinematics and Dynamics of Undulatory Motion of a Tuna-Mimetic Robot. <i>International Journal of Advanced Robotic Systems</i> , 2015, 12, 83.	2.1	14
29	Modelling the wetting of a solid occlusion by a liquid film. <i>International Journal of Multiphase Flow</i> , 2015, 71, 66-73.	3.4	14
30	Parameter estimation in heat conduction using a two-dimensional inverse analysis. <i>International Journal for Computational Methods in Engineering Science and Mechanics</i> , 2016, 17, 274-287.	2.1	14
31	An investigation into improved non-contact adhesion mechanism suitable for wall climbing robotic applications. , 2011, , .		13
32	Scaling Laws of Droplet Coalescence: Theory and Numerical Simulation. <i>Advances in Mathematical Physics</i> , 2018, 2018, 1-16.	0.8	13
33	Evolutionary Design Optimization of an Alkaline Water Electrolysis Cell for Hydrogen Production. <i>Applied Sciences (Switzerland)</i> , 2020, 10, 8425.	2.5	13
34	The inverse problem in creeping film flows. <i>Acta Mechanica</i> , 2012, 223, 841-847.	2.1	12
35	Modeling the spreading and sliding of power-law droplets. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2013, 432, 2-7.	4.7	12
36	Three-Dimensional Optimal Shape Design in Heat Transfer Based on Body-fitted Grid Generation. <i>International Journal for Computational Methods in Engineering Science and Mechanics</i> , 2013, 14, 473-490.	2.1	12

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37	Identification of space- and temperature-dependent heat transfer coefficient. <i>International Journal of Thermal Sciences</i> , 2018, 128, 28-37.	4.9	12
38	A Direct Solution Approach to the Inverse Shallow-Water Problem. <i>Mathematical Problems in Engineering</i> , 2012, 2012, 1-18.	1.1	11
39	Non-identifiability of the Rayleigh damping material model in Magnetic Resonance Elastography. <i>Mathematical Biosciences</i> , 2013, 246, 191-201.	1.9	11
40	A free-piston Stirling cryocooler using metal diaphragms. <i>Cryogenics</i> , 2016, 80, 8-16.	1.7	11
41	CFD analysis of a diaphragm free-piston Stirling cryocooler. <i>Cryogenics</i> , 2016, 79, 7-16.	1.7	11
42	Bathymetry reconstruction based on the zero-inertia shallow water approximation. <i>Theoretical and Computational Fluid Dynamics</i> , 2013, 27, 721-732.	2.2	10
43	An iterative method for modelling the air-cooled organic Rankine cycle geothermal power plant. <i>International Journal of Energy Research</i> , 2011, 35, 436-448.	4.5	9
44	Design, Fabrication, and Swimming Performance of a Free-Swimming Tuna-Mimetic Robot. <i>Journal of Robotics</i> , 2014, 2014, 1-7.	0.9	9
45	Direct reconstruction of glacier bedrock from known free surface data using the one-dimensional shallow ice approximation. <i>Geomorphology</i> , 2015, 228, 356-371.	2.6	9
46	Inertial and dimensional effects on the instability of a thin film. <i>Journal of Fluid Mechanics</i> , 2016, 787, 449-473.	3.4	9
47	Evolution of an eroding cylinder in single and lattice arrangements. <i>Journal of Fluids and Structures</i> , 2017, 70, 295-313.	3.4	9
48	Identification of Ellis rheological law from free surface velocity. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2019, 263, 15-23.	2.4	9
49	Pancake making and surface coating: Optimal control of a gravity-driven liquid film. <i>Physical Review Fluids</i> , 2019, 4, .	2.5	9
50	On the Applicability of an Isochronous Integration Framework for Parabolic/Hyperbolic Heat Conduction Type Problems. <i>Numerical Heat Transfer; Part A: Applications</i> , 2012, 62, 372-392.	2.1	8
51	Flow domain identification from free surface velocity in thin inertial films. <i>Journal of Fluid Mechanics</i> , 2013, 720, 338-356.	3.4	8
52	Dynamic wetting of an occlusion after droplet impact. <i>International Journal of Multiphase Flow</i> , 2019, 111, 264-271.	3.4	8
53	Beating capillarity in thin film flows. <i>International Journal for Numerical Methods in Fluids</i> , 2010, 63, 431-448.	1.6	7
54	The optimal profile of weirs for minimum static holdup. <i>International Journal of Multiphase Flow</i> , 2012, 39, 245-248.	3.4	7

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55	Multi-frequency inversion in Rayleigh damped Magnetic Resonance Elastography. Biomedical Signal Processing and Control, 2014, 13, 270-281.	5.7	7
56	Parametric-based brain Magnetic Resonance Elastography using a Rayleigh damping material model. Computer Methods and Programs in Biomedicine, 2014, 116, 328-339.	4.7	7
57	Regressive cross-correlation of pressure signals in the region of stenosis: Insights from particle image velocimetry experimentation. Biomedical Signal Processing and Control, 2017, 32, 143-149.	5.7	7
58	Non-uniform suction control of flow around a circular cylinder. International Journal of Heat and Fluid Flow, 2020, 82, 108559.	2.4	7
59	SURFACE TEMPERATURE RECONSTRUCTION BASED ON THE THERMOCAPILLARY EFFECT. ANZIAM Journal, 2010, 52, 146-159.	0.2	6
60	One-dimensional bathymetry based on velocity measurements. Inverse Problems in Science and Engineering, 2013, 21, 704-720.	1.2	6
61	Aerodynamic Optimal Shape Design Based on Body-Fitted Grid Generation. Mathematical Problems in Engineering, 2014, 2014, 1-22.	1.1	6
62	Rheometry based on free surface velocity. Inverse Problems in Science and Engineering, 2019, 27, 689-709.	1.2	6
63	Patching Hele-Shaw Cells to Investigate the Flow at Low Reynolds Number in Fracture Networks. Transport in Porous Media, 2021, 136, 147-163.	2.6	6
64	Optimal Process Design in High-Precision Glass Forming. International Journal of Forming Processes, 2006, 9, 61-78.	0.3	6
65	GS4-1 Computational Framework for Heat Transfer Problems: Part 2 "Extension to Nonlinear Cases with Illustration to Radiation Heat Transfer Problem. Numerical Heat Transfer, Part B: Fundamentals, 2012, 62, 157-180.	0.9	5
66	On the Kutta Condition in Potential Flow over Airfoil. Journal of Aerodynamics, 2014, 2014, 1-10.	0.1	5
67	Design and Construction of a Specialised Biomimetic Robot in Multiple Swimming Gaits. International Journal of Advanced Robotic Systems, 2015, 12, 168.	2.1	5
68	Marangoni-induced actuation of miscible liquid droplets on an incline. International Journal of Multiphase Flow, 2016, 82, 27-34.	3.4	5
69	Modeling the Effects of Absorption on Spreading Dynamics. Transport in Porous Media, 2016, 112, 637-663.	2.6	5
70	Inverse problem of simultaneously estimating the thermal conductivity and boundary shape. International Journal for Computational Methods in Engineering Science and Mechanics, 2017, 18, 166-181.	2.1	5
71	FREE-SURFACE DYNAMICS OF THIN SECOND-GRADE FLUID OVER AN UNSTEADY STRETCHING SHEET. ANZIAM Journal, 2018, 60, 249-268.	0.2	5
72	An inverse analysis for determination of space-dependent heat flux in heat conduction problems in the presence of variable thermal conductivity. International Journal for Computational Methods in Engineering Science and Mechanics, 2019, 20, 229-241.	2.1	5

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73	Fluid dynamics investigation of a large array. <i>Physics of Fluids</i> , 2021, 33, .	4.0	5
74	Direct Reconstruction of Three-dimensional Glacier Bedrock and Surface Elevation from Free Surface Velocity. <i>AIMS Geosciences</i> , 2016, 2, 45-63.	1.0	5
75	Identification of Relaxation Functions in Glass by Mean of a Simple Experiment. <i>Journal of the American Ceramic Society</i> , 2007, 90, 2980-2983.	3.8	4
76	A NOTE ON APPROXIMATE BENCHMARK SOLUTIONS FOR VISCOUS TWO-LAYER FLOWS. <i>ANZIAM Journal</i> , 2010, 51, 406-415.	0.2	4
77	GS4-1 Computational Framework for Heat Transfer Problems: Part 1 "Linear Cases with Illustration to Thermal Shock Problem. <i>Numerical Heat Transfer, Part B: Fundamentals</i> , 2012, 62, 141-156.	0.9	4
78	A mathematical model of a twin ducted-fan vertical takeoff and landing jetpack. <i>Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering</i> , 2014, 228, 1831-1844.	1.3	4
79	Thermodynamic peculiarities of alpha-type Stirling engines for low-temperature difference power generation: Optimisation of operating parameters and heat exchangers using a third-order model. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2014, 228, 1936-1947.	2.1	4
80	Flow domain identification in three-dimensional creeping flows. <i>Physics of Fluids</i> , 2017, 29, .	4.0	4
81	Unraveling surfactant transport on a thin liquid film. <i>Wave Motion</i> , 2017, 70, 183-194.	2.0	4
82	Models for the bead mobility technique: A droplet-based viscometer. <i>Aerosol Science and Technology</i> , 2019, 53, 749-759.	3.1	4
83	On the Kutta Condition in Compressible Flow over Isolated Airfoils. <i>Fluids</i> , 2019, 4, 102.	1.7	4
84	Hydrodynamic loading profiles of viscously-interacting blocks subject to different stimulus locations. <i>Journal of the Royal Society of New Zealand</i> , 2021, 51, 346-360.	1.9	4
85	Estimation of Functional Form of Time-Dependent Heat Transfer Coefficient Using an Accurate and Robust Parameter Estimation Approach: An Inverse Analysis. <i>Energies</i> , 2021, 14, 5073.	3.1	4
86	Combustion modelling of a rotary limekiln. <i>Progress in Computational Fluid Dynamics</i> , 2010, 10, 384.	0.2	3
87	Insights into the power law relationships that describe mass deposition rates during electrospinning. <i>Journal of Materials Science</i> , 2012, 47, 1113-1118.	3.7	3
88	Process Parameter Identification in Thin Film Flows Driven by a Stretching Surface. <i>International Journal of Engineering Mathematics</i> , 2014, 2014, 1-12.	0.2	3
89	Multi-frequency Rayleigh damped elastography: in silico studies. <i>Medical Engineering and Physics</i> , 2015, 37, 55-67.	1.7	3
90	MODELING AN IMPACT DROPLET ON A PAIR OF PILLARS. <i>Interfacial Phenomena and Heat Transfer</i> , 2017, 5, 43-57.	0.8	3

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91	Modelling ripple morphodynamics driven by colloidal deposition. Computers and Fluids, 2018, 163, 54-67.	2.5	3
92	Sandwiched droplet actuated by Marangoni force in a Hele-Shaw cell. Acta Mechanica, 2018, 229, 571-584.	2.1	3
93	Effects of boundary layer suction control on flow through an axisymmetric diverging channel. Journal of the Royal Society of New Zealand, 2021, 51, 389-408.	1.9	3
94	The effects of surface roughness on the flow in multiple connected fractures. Fluid Dynamics Research, 2022, 54, 015504.	1.3	3
95	Wet-core temperature and concentration profiles in a single skim milk droplet drying process. Applied Thermal Engineering, 2022, 212, 118571.	6.0	3
96	Modeling of Multi-Layer Phase Change Material in a Triplex Tube under Various Thermal Boundary Conditions. Energies, 2022, 15, 3465.	3.1	3
97	Efficiency-based optimisation of a 2-DOF robotic fish model. International Journal of Biomechanics and Biomedical Robotics, 2013, 2, 93.	0.2	2
98	Rheological effects on the levelling dynamics of thin fluid films. International Journal of Numerical Methods for Heat and Fluid Flow, 2015, 25, 1850-1867.	2.8	2
99	MARANGONI-IMPROVED MIXING IN A TWO-DROPLET SYSTEM. Interfacial Phenomena and Heat Transfer, 2017, 5, 81-95.	0.8	2
100	Consistent formulation of the power-law rheology and its application to the spreading of non-Newtonian droplets. Meccanica, 2018, 53, 3709-3717.	2.0	2
101	Effects of a microscale ridge on dynamic wetting during drop impact. Journal of the Royal Society of New Zealand, 2020, 50, 523-537.	1.9	2
102	Bedrock reconstruction from free surface data for unidirectional glacier flow with basal slip. Acta Mechanica, 2021, 232, 305-322.	2.1	2
103	Thin Liquid Film Dynamics on a Spinning Spheroid. Fluids, 2021, 6, 318.	1.7	2
104	Direct Reconstruction of Three-dimensional Glacier Bedrock and Surface Elevation from Free Surface Velocity. AIMS Microbiology, 2016, 2, 45-63.	2.2	2
105	Novel Swimming Mechanism for a Robotic Fish. Advances in Mechatronics and Mechanical Engineering, 2013, , 41-58.	1.0	2
106	Interactive Fluid Coupling Effects of Non-Neighbouring Members. Sensors, 2021, 21, 6961.	3.8	2
107	An augmented lagrangian algorithm for recovery of ice thickness in unidirectional flow using the shallow ice approximation. Applied Mathematical Modelling, 2022, 107, 650-669.	4.2	2
108	Novel diaphragm based Stirling cryocooler. , 2012, , .		1

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109	Biochemical sensing assays based on coalescence-induced self-propulsion digital microfluidics. , 2013, , .		1
110	Imaging of Rayleigh damping properties of the in vivo brain using parametric Magnetic Resonance Elastography.. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 3881-3886.	0.4	1
111	Oblique Impact of a Droplet on a Textured Substrate. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2019, , 119-131.	0.2	1
112	Dynamics of Thin Film Under a Volatile Solvent Source Driven by a Constant Pressure Gradient Flow. Fluids, 2019, 4, 198.	1.7	1
113	Eliminating Boundary Layer Separation on a Cylinder with Nonuniform Suction. International Journal of Aerospace Engineering, 2020, 2020, 1-11.	0.9	1
114	On an Exact Step Length in Gradient-Based Aerodynamic Shape Optimizationâ€™Part II: Viscous Flows. Fluids, 2021, 6, 106.	1.7	1
115	10.1063/1.3154552.1. , 2009, , .		1
116	Free-surface dynamics of thin second-grade fluid over an unsteady stretching sheet. ANZIAM Journal, 0, 60, 249.	0.0	1
117	General Model for Cortical Capillary Networks and an Investigation on Pertinent Functional Reactivity to the Different Blood Inflows. IFMBE Proceedings, 2010, , 450-453.	0.3	1
118	Describing Lava Rheology using Flow Dynamics Information. , 2020, , .		1
119	Convergence and computational cost analysis of a boundary integral method applied to a rigid body moving in a viscous fluid in close proximity to a fixed boundary. Journal of Engineering Mathematics, 2022, 132, 1.	1.2	1
120	Subzone based multi-frequency magnetic resonance elastography using a Rayleigh damped material model. , 2012, 2012, 436-9.		0
121	Effects of Physicochemical Parameters on Colloidal Potentials. Applied Mechanics and Materials, 0, 564, 222-227.	0.2	0
122	Slug Self-Propulsion in a Capillary Tube Mathematical Modeling and Numerical Simulation. Advances in Mathematical Physics, 2016, 2016, 1-16.	0.8	0
123	The spontaneous motion of a slug of miscible liquids in a capillary tube. International Journal of Nanotechnology, 2017, 14, 530.	0.2	0
124	Spatially-Resolved 3ï‰ Thermal Flow Sensing for Microfluidics and Biology. , 2019, , .		0
125	Effects of Non-neighbouring Members in an Array of Beams Vibrating in Fluids. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2019, , 283-293.	0.2	0
126	Evolution of a Melting Sphere in Cross Flow Using an Arbitrary Mesh Topology. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2019, , 217-229.	0.2	0

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127	The Three Dynamical Regimes of a Droplet Driven by Thermocapillarity. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2019, , 85-95.	0.2	0
128	Ka rere ngā•mea katoa “ everything flows. Journal of the Royal Society of New Zealand, 2021, 51, 187-193.	1.9	0
129	An Adaptive Design Approach for A Geothermal Plant with Changing Resource Characteristics. , 2011, , .		0
130	Direct Reconstruction of Three-dimensional Glacier Bedrock and Surface Elevation from Free Surface Velocity. AIMS Geosciences, 2016, 2, 45-63.	1.0	0
131	How valid is Taylor dispersion formula in slugs?. ANZIAM Journal, 0, 59, 155.	0.0	0
132	Modelling and Simulation of Spin Coating on a Spherical Substrate. , 2020, , .		0
133	Numerical Simulation of Milk Droplet Drying Process. , 2020, , .		0
134	Non-Isothermal Thin-Film Flow of a Viscoplastic Material Over Topography. SSRN Electronic Journal, 0, , .	0.4	0
135	Inferring rheological properties and topographical features from free surface flow data. , 2022, 3, 100064.		0