FrÃ©dÃ©ric Caupin

List of Publications by Year
in descending order

75 papers	3,723 citations	159585 30 h-index	128289 60 g-index
80 all docs	80 docs citations	80 times ranked	2656 citing authors

#	Article	IF	Citations
1	Water: A Tale of Two Liquids. Chemical Reviews, 2016, 116, 7463-7500.	47.7	627
2	Cavitation in water: a review. Comptes Rendus Physique, 2006, 7, 1000-1017.	0.9	331
3	Cavitation pressure in water. Physical Review E, 2006, 74, 041603.	2.1	246
4	A coherent picture of water at extreme negativeÂpressure. Nature Physics, 2013, 9, 38-41.	16.7	170
5	Viscosity of deeply supercooled water and its coupling to molecular diffusion. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 12020-12025.	7.1	168
6	Superfluidity of Grain Boundaries and Supersolid Behavior. Science, 2006, 313, 1098-1100.	12.6	153
7	Supersolidity and disorder. Journal of Physics Condensed Matter, 2008, 20, 173201.	1.8	125
8	Molecular mechanism for cavitation in water under tension. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 13582-13587.	7.1	110
9	Two-structure thermodynamics for the TIP4P/2005 model of water covering supercooled and deeply stretched regions. Journal of Chemical Physics, 2017, 146, 034502.	3.0	107
10	Anomalies in bulk supercooled water at negative pressure. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 7936-7941.	7.1	103
11	Equation of state of water under negative pressure. Journal of Chemical Physics, 2010, 133, 174507.	3.0	73
12	Escaping the no man's land: Recent experiments on metastable liquid water. Journal of Non-Crystalline Solids, 2015, 407, 441-448.	3.1	73
13	Liquid-vapor interface, cavitation, and the phase diagram of water. Physical Review E, 2005, 71, 051605.	2.1	70
14	Pressure dependence of viscosity in supercooled water and a unified approach for thermodynamic and dynamic anomalies of water. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 4312-4317.	7.1	70
15	Water at the cavitation limit: Density of the metastable liquid and size of the critical bubble. Europhysics Letters, 2010, 90, 16002.	2.0	63
16	Curvature Dependence of the Liquid-Vapor Surface Tension beyond the Tolman Approximation. Physical Review Letters, 2016, 116, 056102.	7.8	63
17	Exploring water and other liquids at negative pressure. Journal of Physics Condensed Matter, 2012, 24, 284110.	1.8	62
18	Viscosity and self-diffusion of supercooled and stretched water from molecular dynamics simulations. Journal of Chemical Physics, 2018, 149, 094503.	3.0	62

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19	Thermodynamics of Fluid Polyamorphism. Physical Review X, 2018, 8, .	8.9	61
20	Compressibility Anomalies in Stretched Water and Their Interplay with Density Anomalies. Journal of Physical Chemistry Letters, 2017, 8, 5519-5522.	4.6	58
21	Thermodynamics of supercooled and stretched water: Unifying two-structure description and liquid-vapor spinodal. Journal of Chemical Physics, 2019, 151, 034503.	3.0	53
22	Shrinking of Rapidly Evaporating Water Microdroplets Reveals their Extreme Supercooling. Physical Review Letters, 2018, 120, 015501.	7.8	49
23	A comprehensive scenario of the thermodynamic anomalies of water using the TIP4P/2005 model. Journal of Chemical Physics, 2016, 145, 054505.	3.0	48
24	Acoustic Crystallization and Heterogeneous Nucleation. Physical Review Letters, 2001, 86, 5506-5509.	7.8	46
25	Equation of state for water and its line of density maxima down to â˜'120 MPa. Physical Chemistry Chemical Physics, 2016, 18, 5896-5900.	2.8	45
26	Fiber optic probe hydrophone for the study of acoustic cavitation in water. Review of Scientific Instruments, 2011, 82, 034904.	1.3	44
27	Wetting Properties of Grain Boundaries in Solid<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi>He</mml:mi><mml:mprescripts /><mml:none /><mml:mn>4</mml:mn></mml:mmultiscripts></mml:math>. Physical Review Letters, 2007, 99, 205302.	7.8	42
28	Critical Casimir Effect and Wetting by Helium Mixtures. Physical Review Letters, 2003, 90, 116102.	7.8	35
29	Comment on â€œMaxima in the thermodynamic response and correlation functions of deeply supercooled waterâ€. Science, 2018, 360, .	12.6	32
30	Absolute limit for the capillary rise of a fluid. Europhysics Letters, 2008, 82, 56004.	2.0	31
31	Liquid Helium up to 160 bar. Journal of Low Temperature Physics, 2004, 136, 93-116.	1.4	29
32	The limit of metastability of water under tension: theories and experiments. Journal of Physics Condensed Matter, 2005, 17, S3597-S3602.	1.8	23
33	Cavitation in Heavy Water and Other Liquids. Journal of Physical Chemistry B, 2011, 115, 14240-14245.	2.6	23
34	Minimal Microscopic Model for Liquid Polyamorphism and Waterlike Anomalies. Physical Review Letters, 2021, 127, 185701.	7.8	21
35	Homogeneous nucleation of crystals by acoustic waves. Europhysics Letters, 2006, 75, 91-97.	2.0	20
36	Limits of metastability of liquid helium. Physica B: Condensed Matter, 2003, 329-333, 356-359.	2.7	19

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37	Cavitation in plants at low temperature: is sap transport limited by the tensile strength of water as expected from Briggsâ€™ Zâ€tube experiment?. New Phytologist, 2007, 173, 571-575.	7.3	19
38	Detecting vapour bubbles in simulations of metastable water. Journal of Chemical Physics, 2014, 141, 18C511.	3.0	19
39	Comment on â€œObservation of Unusual Mass Transport in Solid hcpHe4â€• Physical Review Letters, 2008, 101, 189601; author reply 189602.	7.8	17
40	Acoustic Nucleation of Solid Helium 4 on a Clean Glass Plate. Journal of Low Temperature Physics, 2001, 125, 155-164.	1.4	16
41	Nucleation of crystals from their liquid phase. Comptes Rendus Physique, 2006, 7, 988-999.	0.9	16
42	Melting and freezing of embedded nanoclusters. Physical Review B, 2008, 77, .	3.2	16
43	Anomaly in the Stability Limit of LiquidH3e. Physical Review Letters, 2001, 87, 145302.	7.8	14
44	Nucleation of Solid Helium from Liquid Under High Pressure. Journal of Low Temperature Physics, 2003, 131, 145-154.	1.4	13
45	Static Structure Factor and Static Response Function ofÂSuperfluid Helium 4: a Comparative Analysis. Journal of Low Temperature Physics, 2008, 152, 108-121.	1.4	13
46	Time-resolved quantitative multiphase interferometric imaging of a highly focused ultrasound pulse. Applied Optics, 2010, 49, 6127.	2.1	12
47	High Pressure Inside Nanometer-Sized Particles Influences the Rate and Products of Chemical Reactions. Environmental Science & Technology, 2021, 55, 7786-7793.	10.0	12
48	Comment on â€˜Nanoscale water capillary bridges under deeply negative pressureâ€™ [Chem. Phys. Lett. 451 (2008) 88]. Chemical Physics Letters, 2008, 463, 283-285.	2.6	10
49	Supersolidity and Superfluidity of Grain Boundaries. Journal of Low Temperature Physics, 2007, 148, 665-670.	1.4	9
50	Characterization of elastomeric scaffolds developed for tissue engineering applications by compression and nanoindentation tests, Î¼-Raman and Î¼-Brillouin spectroscopies. Biomedical Optics Express, 2019, 10, 1649.	2.9	9
51	Heterogeneous Cavitation in Liquid Helium 4 Near a Glass Plate. Journal of Low Temperature Physics, 2002, 126, 615-620.	1.4	8
52	Supersolidity and Disorder in Solid Helium 4. Journal of Low Temperature Physics, 2008, 150, 267-275.	1.4	8
53	Nucleation in a Fermi Liquid at Negative Pressure. Journal of Low Temperature Physics, 2002, 126, 91-96.	1.4	7
54	Optical Measurement of the Non-linear Focusing of Sound in Liquid Helium 4. Journal of Low Temperature Physics, 2002, 126, 643-648.	1.4	7

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55	Optical Measurement of Wetting by 3He-4He Mixtures Near Their Tri-Critical Point. Journal of Low Temperature Physics, 2003, 130, 543-555.	1.4	7
56	Freezing of Helium-4: Comparison of Different Density Functional Approaches. Journal of Low Temperature Physics, 2007, 148, 731-736.	1.4	7
57	Brillouin spectroscopy of fluid inclusions proposed as a paleothermometer for subsurface rocks. Scientific Reports, 2015, 5, 13168.	3.3	7
58	Restoring Halite Fluid Inclusions as an Accurate Palaeothermometer: Brillouin Thermometry Versus Microthermometry. Geostandards and Geoanalytical Research, 2020, 44, 243-264.	3.1	7
59	Density Functional Theory of Freezing of Superfluid Helium 4. Journal of Low Temperature Physics, 2004, 134, 181-186.	1.4	6
60	Absence of grain boundary melting in solid helium. Journal of Physics Condensed Matter, 2008, 20, 494228.	1.8	6
61	Density Functional Theory of the Interface between Solid and Superfluid Helium 4. Journal of Low Temperature Physics, 2005, 138, 331-336.	1.4	5
62	Comment on â€œLarge Melting-Point Hysteresis of Ge Nanocrystals Embedded inSiO2â€• Physical Review Letters, 2007, 99, 079601; author reply 079602.	7.8	4
63	Homogeneous Nucleation of 4He Crystals by Acoustic Waves. Journal of Low Temperature Physics, 2007, 148, 645-652.	1.4	4
64	Effect of dissolved salt on the anomalies of water at negative pressure. Journal of Chemical Physics, 2020, 152, 194501.	3.0	4
65	Reconstructing lake bottom water temperatures and their seasonal variability in the Dead Sea Basin during MIS5e. Depositional Record, 2022, 8, 616-627.	1.7	4
66	Interplay of vitrification and ice formation in a cryoprotectant aqueous solution at low temperature. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2112248119.	7.1	4
67	Comment on â€œCapillary Filling of Anodized Alumina Nanopore Arraysâ€• Physical Review Letters, 2007, 98, 259601; author reply 259602.	7.8	3
68	Quantum Statistics of Metastable Liquid Helium. , 2002, , 201-214.		3
69	Homogeneous Nucleation of Solid 4He. AIP Conference Proceedings, 2006, , .	0.4	1
70	Dynamical Viscoelastic Properties of Poly(Ester-Urethane) Biomaterial for Scaffold Applications. Lecture Notes in Mechanical Engineering, 2020, , 1-8.	0.4	1
71	Ultrasonic Cavitation in Freon at Room Temperature. , 2002, , 307-313.		1
72	The Limits of Metastability of Liquid Helium. , 2002, , 145-160.		1

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73	The Expansion Coefficient of Liquid Helium 3 and the Shape of Its Stability Limit. Journal of Low Temperature Physics, 2002, 126, 73-78.	1.4	0
74	Optical Observations of Disorder in Solid Helium 4. Journal of Low Temperature Physics, 2008, , 1.	1.4	0
75	Predictions for the properties of water below its homogeneous crystallization temperature revisited. Journal of Non-Crystalline Solids: X, 2022, 14, 100090.	1.2	0