J W P Schmelzer

List of Publications by Year
in descending order

109 papers	3,986 citations	101384 36 h-index	133063 59 g-index
112 all docs	112 docs citations	112 times ranked	2259 citing authors

#	Article	IF	Citations
1	Homogeneous crystal nucleation in silicate glasses: A 40 years perspective. Journal of Non-Crystalline Solids, 2006, 352, 2681-2714.	1.5	382
2	Updated definition of glass-ceramics. Journal of Non-Crystalline Solids, 2018, 501, 3-10.	1.5	248
3	Kinetics of nucleation and crystallization in poly(É›-caprolactone) (PCL). Polymer, 2011, 52, 1983-1997.	1.8	224
4	Kinetics of nucleation and crystallization of poly(Îµ-caprolactone) â€" Multiwalled carbon nanotube composites. European Polymer Journal, 2014, 52, 1-11.	2.6	126
5	Crystallization of glass-forming liquids: Maxima of nucleation, growth, and overall crystallization rates. Journal of Non-Crystalline Solids, 2015, 429, 24-32.	1.5	91
6	Homogeneous crystal nucleation in polymers. Journal of Physics Condensed Matter, 2017, 29, 453002.	0.7	89
7	Experimental Test of Tammannâ€™s Nuclei Development Approach in Crystallization of Macromolecules. Crystal Growth and Design, 2015, 15, 786-798.	1.4	88
8	Sequence of enthalpy relaxation, homogeneous crystal nucleation and crystal growth in glassy polyamide 6. European Polymer Journal, 2014, 53, 100-108.	2.6	84
9	Homogeneous nucleation versus glass transition temperature of silicate glasses. Journal of Non-Crystalline Solids, 2003, 321, 52-65.	1.5	80
10	Experimental Test of Tammann's Nuclei Development Approach in Crystallization of Macromolecules. International Polymer Processing, 2016, 31, 628-637.	0.3	76
11	Classical and generalized Gibbsâ€™ approaches and the work of critical cluster formation in nucleation theory. Journal of Chemical Physics, 2006, 124, 194503.	1.2	75
12	Curvature-Dependent Surface Tension and Nucleation Theory. Journal of Colloid and Interface Science, 1996, 178, 657-665.	5.0	74
13	Nucleation versus spinodal decomposition in phase formation processes in multicomponent solutions. Journal of Chemical Physics, 2004, 121, 6900-6917.	1.2	74
14	Kinetic criteria of glass formation and the pressure dependence of the glass transition temperature. Journal of Chemical Physics, 2012, 136, 074512.	1.2	69
15	Dynamics of first-order phase transitions in multicomponent systems: a new theoretical approach. Journal of Colloid and Interface Science, 2004, 272, 109-133.	5.0	68
16	Crystal nucleation in glass-forming liquids: Variation of the size of the â€œstructural unitsâ€• with temperature. Journal of Non-Crystalline Solids, 2016, 447, 35-44.	1.5	60
17	Freezing-in and production of entropy in vitrification. Journal of Chemical Physics, 2006, 125, 094505.	1.2	59
18	The effect of elastic stresses on the thermodynamic barrier for crystal nucleation. Journal of Non-Crystalline Solids, 2016, 432, 325-333.	1.5	57

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19	The Prigogine-Defay ratio revisited. Journal of Chemical Physics, 2006, 125, 184511.	1.2	56
20	On the dependence of the properties of glasses on cooling and heating rates. Journal of Non-Crystalline Solids, 2011, 357, 1291-1302.	1.5	53
21	Cooling rate dependence of undercooling of pure Sn single drop by fast scanning calorimetry. Applied Physics A: Materials Science and Processing, 2011, 104, 189-196.	1.1	52
22	Crystallization in glass-forming liquids: Effects of decoupling of diffusion and viscosity on crystal growth. Journal of Non-Crystalline Solids, 2015, 429, 45-53.	1.5	51
23	Dependence of crystal nucleation on prior liquid overheating by differential fast scanning calorimeter. Journal of Chemical Physics, 2014, 140, 104513.	1.2	50
24	Crystal nucleation and growth in glass-forming melts: Experiment and theory. Journal of Non-Crystalline Solids, 2008, 354, 269-278.	1.5	49
25	Size and rate dependence of crystal nucleation in single tin drops by fast scanning calorimetry. Journal of Chemical Physics, 2013, 138, 054501.	1.2	47
26	How Do Crystals Form and Grow in Glassâ€Forming Liquids: Ostwald's Rule of Stages and Beyond. International Journal of Applied Glass Science, 2010, 1, 16-26.	1.0	46
27	Stress development and relaxation during crystal growth in glass-forming liquids. Journal of Non-Crystalline Solids, 2006, 352, 434-443.	1.5	45
28	On the determination of the kinetic pre-factor in classical nucleation theory. Journal of Non-Crystalline Solids, 2010, 356, 2901-2907.	1.5	43
29	Heat capacity measurements and modeling of polystyrene glass transition in a wide range of cooling rates. Journal of Non-Crystalline Solids, 2015, 409, 63-75.	1.5	40
30	Theory of nucleation in viscoelastic media: application to phase formation in glassforming melts. Journal of Non-Crystalline Solids, 2003, 315, 144-160.	1.5	39
31	Glass Transition, Crystallization of Glass-Forming Melts, and Entropy. Entropy, 2018, 20, 103.	1.1	39
32	Kinetic criteria of glass-formation, pressure dependence of the glass-transition temperature, and the Prigogineâ€“Defay ratio. Journal of Non-Crystalline Solids, 2015, 407, 170-178.	1.5	38
33	Comments on the Nucleation Theorem. Journal of Colloid and Interface Science, 2001, 242, 354-372.	5.0	37
34	Relaxation and crystal nucleation in polymer glasses. European Polymer Journal, 2018, 102, 195-208.	2.6	37
35	Comparison of Different Approaches to the Determination of the Work of Critical Cluster Formation. Journal of Colloid and Interface Science, 2000, 231, 312-321.	5.0	36
36	The effect of elastic stress and relaxation on crystal nucleation in lithium disilicate glass. Journal of Non-Crystalline Solids, 2004, 333, 150-160.	1.5	36

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37	Crystallization of glass-forming liquids: Thermodynamic driving force. Journal of Non-Crystalline Solids, 2016, 449, 41-49.	1.5	36
38	Thermodynamic analysis of nucleation in confined space: Generalized Gibbs approach. Journal of Chemical Physics, 2011, 134, 054511.	1.2	35
39	Kinetics of boiling in binary liquidâ€"gas solutions: Comparison of different approaches. Journal of Chemical Physics, 2003, 119, 6166-6183.	1.2	34
40	Beating Homogeneous Nucleation and Tuning Atomic Ordering in Glass-Forming Metals by Nanocalorimetry. Nano Letters, 2017, 17, 7751-7760.	4.5	34
41	New insights on the thermodynamic barrier for nucleation in glasses: The case of lithium disilicate. Journal of Non-Crystalline Solids, 2005, 351, 1491-1499.	1.5	32
42	On the dependence of the properties of glasses on cooling and heating rates II. Journal of Non-Crystalline Solids, 2011, 357, 1303-1309.	1.5	32
43	Crystallization of Glass: What We Know, What We Need to Know. International Journal of Applied Glass Science, 2016, 7, 253-261.	1.0	31
44	Crystallization in glass-forming liquids: Effects of fragility and glass transition temperature. Journal of Non-Crystalline Solids, 2015, 428, 68-74.	1.5	29
45	Crystallization of glass-forming liquids: Specific surface energy. Journal of Chemical Physics, 2016, 145, .	1.2	29
46	Effects of Glass Transition and Structural Relaxation on Crystal Nucleation: Theoretical Description and Model Analysis. Entropy, 2020, 22, 1098.	1.1	28
47	Kinetics of Condensation and Boiling:Â Comparison of Different Approachesâ€. Journal of Physical Chemistry B, 2001, 105, 11595-11604.	1.2	27
48	Phenomenological theories of glass transition: Classical approaches, new solutions and perspectives. Journal of Non-Crystalline Solids, 2008, 354, 311-324.	1.5	27
49	Structural order parameters, the Prigogineâ€"Defay ratio and the behavior of the entropy in vitrification. Journal of Non-Crystalline Solids, 2009, 355, 653-662.	1.5	27
50	Time of Formation of the First Supercritical Nucleus, Timeâ€lag, and the Steadyâ€State Nucleation Rate. International Journal of Applied Glass Science, 2017, 8, 48-60.	1.0	27
51	On the definition of temperature and its fluctuations in small systems. Journal of Chemical Physics, 2010, 133, 134509.	1.2	26
52	Thermodynamic Aspects of Pressureâ€Induced Crystallization: Kauzmann Pressure. International Journal of Applied Glass Science, 2016, 7, 474-485.	1.0	26
53	Kauzmann paradox and the crystallization of glass-forming melts. Journal of Non-Crystalline Solids, 2018, 501, 21-35.	1.5	26
54	The Third Principle of thermodynamics and the zero-point entropy of glasses: History and new developments. Journal of Non-Crystalline Solids, 2009, 355, 581-594.	1.5	25

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55	Dependence of the width of the glass transition interval on cooling and heating rates. Journal of Chemical Physics, 2013, 138, 034507.	1.2	25
56	Generalized Gibbsâ€™ approach in heterogeneous nucleation. Journal of Chemical Physics, 2013, 138, 164504.	1.2	25
57	Crystallization of glass-forming melts: New answers to old questions. Journal of Non-Crystalline Solids, 2018, 501, 11-20.	1.5	25
58	Entropy and the Tolman Parameter in Nucleation Theory. Entropy, 2019, 21, 670.	1.1	25
59	Stress induced pore formation and phase selection in a crystallizing stretched glass. Journal of Non-Crystalline Solids, 2010, 356, 1679-1688.	1.5	23
60	Temperature fluctuations and the thermodynamic determination of the cooperativity length in glass forming liquids. Journal of Chemical Physics, 2017, 146, 104501.	1.2	21
61	Curvature dependence of the surface tension and crystal nucleation in liquids. International Journal of Applied Glass Science, 2019, 10, 57-68.	1.0	21
62	Evolution of cluster size-distributions in nucleation-growth and spinodal decomposition processes in a regular solution. Journal of Non-Crystalline Solids, 2010, 356, 2915-2922.	1.5	20
63	Crystallization of Supercooled Liquids: Self-Consistency Correction of the Steady-State Nucleation Rate. Entropy, 2020, 22, 558.	1.1	19
64	How Do Crystals Nucleate and Grow: Ostwaldâ€™s Rule of Stages and Beyond. Hot Topics in Thermal Analysis and Calorimetry, 2017, , 195-211.	0.5	18
65	Steady-State Crystal Nucleation Rate of Polyamide 66 by Combining Atomic Force Microscopy and Fast-Scanning Chip Calorimetry. Macromolecules, 2020, 53, 5560-5571.	2.2	18
66	Generalized Gibbsâ€™ approach to the thermodynamics of heterogeneous systems and the kinetics of first-order phase transitions. Journal of Engineering Thermophysics, 2007, 16, 119-129.	0.6	17
67	Temperature of critical clusters in nucleation theory: Generalized Gibbs' approach. Journal of Chemical Physics, 2013, 139, 034702.	1.2	17
68	On the thermodynamic driving force for interpretation of nucleation experiments. Journal of Non-Crystalline Solids, 2010, 356, 2185-2191.	1.5	16
69	Heterogeneous nucleation on rough surfaces: Generalized Gibbsâ€™ approach. Journal of Chemical Physics, 2017, 147, 214705.	1.2	16
70	Glass transition and primary crystallization of Al86Ni6Y4.5Co2La1.5 metallic glass at heating rates spanning over six orders of magnitude. Scripta Materialia, 2019, 162, 146-150.	2.6	16
71	Theory of pore formation in glass under tensile stress: Generalized Gibbs approach. Journal of Non-Crystalline Solids, 2011, 357, 3474-3479.	1.5	15
72	Rapid solidification behavior of nano-sized Sn droplets embedded in the Al matrix by nanocalorimetry. Materials Research Express, 2014, 1, 045012.	0.8	15

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73	Non-stoichiometric crystallization of lithium metasilicateâ€“calcium metasilicate glasses. Part 2 â€” Effect of the residual liquid. Journal of Non-Crystalline Solids, 2013, 379, 131-144.	1.5	14
74	Comments on the thermodynamic analysis of nucleation in confined space. Journal of Non-Crystalline Solids, 2014, 384, 2-7.	1.5	14
75	First-order curvature corrections to the surface tension of multicomponentÂsystems. Journal of Colloid and Interface Science, 2003, 264, 228-236.	5.0	13
76	The phenomenology of metastable liquids and the glass transition. Journal of Engineering Thermophysics, 2007, 16, 205-223.	0.6	13
77	Theory of crystal nucleation of glassâ€forming liquids: Some new developments. International Journal of Applied Glass Science, 2022, 13, 171-198.	1.0	13
78	Cluster growth and dissolution of fullerenes in non-polar solvents. Journal of Molecular Liquids, 2006, 127, 142-144.	2.3	12
79	Correlation between glass transition temperature and the width of the glass transition interval. International Journal of Applied Glass Science, 2019, 10, 502-513.	1.0	12
80	Pressureâ€induced crystallization of liquids: Maxima of nucleation, growth, and overall crystallization rates. International Journal of Applied Glass Science, 2018, 9, 198-207.	1.0	11
81	Statistical Approach to Crystal Nucleation in Glass-Forming Liquids. Entropy, 2021, 23, 246.	1.1	11
82	Kinetics of segregation processes in solutions: Saddle point versus ridge crossing of the thermodynamic potential barrier. Journal of Non-Crystalline Solids, 2014, 384, 8-14.	1.5	10
83	Glass Transition Behavior: A Generic Phenomenological Approach. International Journal of Applied Glass Science, 2010, 1, 221-236.	1.0	9
84	Heterogeneous Nucleation in Solutions on Rough Solid Surfaces: Generalized Gibbs Approach. Entropy, 2019, 21, 782.	1.1	8
85	Comment on â€œSimple improvements to classical bubble nucleation modelsâ€. Physical Review E, 2016, 94, 026801.	0.8	7
86	Reply to â€œComment on â€˜Glass Transition, Crystallization of Glass-Forming Melts, and Entropyâ€â€™ by Zanotto and Mauro. Entropy, 2018, 20, 704.	1.1	7
87	Kinetic criteria of vitrification and pressure-induced glass transition: dependence on the rate of change of pressure. Thermochimica Acta, 2019, 677, 42-53.	1.2	7
88	Application of the Nucleation Theorem to Crystallization of Liquids: Some General Theoretical Results. Entropy, 2019, 21, 1147.	1.1	7
89	On different possibilities of a thermodynamically consistent determination of the work of critical cluster formation in nucleation theory. Journal of Chemical Physics, 2003, 119, 10759-10763.	1.2	6
90	Ice-Crystal Nucleation in Water: Thermodynamic Driving Force and Surface Tension. Part I: Theoretical Foundation. Entropy, 2020, 22, 50.	1.1	6

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91	Nucleation and growth in freely expanding gases. Physica A: Statistical Mechanics and Its Applications, 1998, 254, 389-410.	1.2	5
92	The Calorimetric Glass Transition in a Wide Range of Cooling Rates and Frequencies. Advances in Dielectrics, 2018, , 307-351.	1.2	5
93	Fullerene Cluster Formation in Carbon Disulfide and Toluene. Fullerenes Nanotubes and Carbon Nanostructures, 2006, 14, 481-488.	1.0	4
94	Influence of nanopowder particle size on competition and growth of different crystallographic phases during temperature cycling. Acta Materialia, 2009, 57, 5771-5781.	3.8	4
95	Elastic stresses in crystallization processes in finite domains. Journal of Non-Crystalline Solids, 2010, 356, 1670-1678.	1.5	4
96	Size-dependent hysteresis and phase formation kinetics during temperature cycling of metal nanopowders. Journal of Physics Condensed Matter, 2011, 23, 245301.	0.7	4
97	Neutron reflectometry for structural studies in thin films of polymer nanocomposites. Modeling. Nuclear Physics and Atomic Energy, 2018, 19, 376-382.	0.2	4
98	Crystal Nucleation and Growth in Cross-Linked Poly(Îµ-caprolactone) (PCL). Polymers, 2021, 13, 3617.	2.0	4
99	A dissipative one-dimensional collision model with intermediate energy storage. Physica D: Nonlinear Phenomena, 2003, 185, 158-174.	1.3	2
100	On the possibility of modeling of polymers glass transition in a wide range of cooling and heating rates. Journal of Molecular Liquids, 2017, 235, 172-177.	2.3	2
101	Fragmentation in dissipative collisions: a computer model study. Physica D: Nonlinear Phenomena, 2002, 164, 110-126.	1.3	1
102	Model Description of Aggregation in Fullerene Solutions. AIP Conference Proceedings, 2005, , .	0.3	1
103	Kinetics of Nucleation, Aggregation and Ageing. , 2006, , 131-160.		1
104	IN REMEMBRANCE OF VLADIMIR P. SKRIPOV: SOME PERSONAL REFLECTIONS. Interfacial Phenomena and Heat Transfer, 2017, 5, ix-xvii.	0.3	1
105	Anisotropic Nucleation, Growth and Ripening under Stirringâ€"A Phenomenological Model. Entropy, 2020, 22, 1254.	1.1	1
106	Kinetic Processes in Fullerene Solutions. Physics of Particles and Nuclei, 2021, 52, 315-329.	0.2	1
107	Nucleation Catalysis in Metastable Liquids: Inborn Active Sites. Crystal Research and Technology, 2000, 35, 515-527.	0.6	0
108	Comment on â€œMinimum free-energy pathway of nucleationâ€•[J. Chem. Phys. 135, 134508 (2011)]. Journal of Chemical Physics, 2012, 136, 107101.	1.2	0

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109	In remembrance of Ivan S. Gutzow: Some personal reflections. International Journal of Applied Glass Science, 2020, 11, 603-607.	1.0	0