Pierre Lucas

List of Publications by Year
in descending order

114 papers	3,247 citations	136950 32 h-index	168389 53 g-index
114 all docs	114 docs citations	114 times ranked	1851 citing authors

#	Article	IF	Citations
1	The glass transition of water, insight from phase change materials. Journal of Non-Crystalline Solids: X, 2022, 14, 100084.	1.2	5
2	Broadband pyramid antireflective structure on chalcogenide glasses by the hot embossing method for infrared photonics. Optical Materials Express, 2022, 12, 1638.	3.0	2
3	Fragileâ€toâ€Strong Transition in Phaseâ€Change Material Ge₃Sb₆Te₅. Advanced Functional Materials, 2022, 32, .	14.9	16
4	Navigating the Hilbert space of elastic bell states in driven coupled waveguides. Wave Motion, 2022, , 102966.	2.0	3
5	Temperature-controlled spatiotemporally modulated phononic crystal for achieving nonreciprocal acoustic wave propagation. Journal of the Acoustical Society of America, 2022, 151, 3669-3675.	1.1	3
6	Approaching the Glass Transition Temperature of GeTe by Crystallizing Ge₁₅Te₈₅. Physica Status Solidi - Rapid Research Letters, 2021, 15, 2000478.	2.4	12
7	Fragile-to-strong transitions in glass forming liquids. Journal of Non-Crystalline Solids, 2021, 557, 119367.	3.1	7
8	Homogeneity of meltâ€rocked Geâ€"Se glasses and the effect of impurities. International Journal of Applied Glass Science, 2021, 12, 391-397.	2.0	1
9	Extended aging of Geâ€"Se glasses below the glass transition temperature. Journal of Chemical Physics, 2021, 154, 164502.	3.0	6
10	Charles Austen Angell, 1933â€"2021. Journal of Non-Crystalline Solids, 2021, 568, 120869.	3.1	0
11	Glass transition of the phase change material AIST and its impact on crystallization. Materials Science in Semiconductor Processing, 2021, 134, 105990.	4.0	10
12	Origin of photoelastic phenomena in Ge-Se network glasses. Physical Review B, 2021, 104, .	3.2	2
13	Control of effective cooling rate upon magnetron sputter deposition of glassy Ge15Te85. Scripta Materialia, 2020, 178, 223-226.	5.2	12
14	Liquidâ€liquid phase transitions in glassâ€forming systems and their implications for memory technology. International Journal of Applied Glass Science, 2020, 11, 236-244.	2.0	13
15	Violation of the Stokesâ€"Einstein relation in Ge2Sb2Te5, GeTe, Ag4In3Sb67Te26, and Ge15Sb85, and its connection to fast crystallization. Acta Materialia, 2020, 195, 491-500.	7.9	19
16	Directional Elastic Pseudospin and Nonseparability of Directional and Spatial Degrees of Freedom in Parallel Arrays of Coupled Waveguides. Applied Sciences (Switzerland), 2020, 10, 3202.	2.5	5
17	Experimental demonstration of elastic analogues of nonseparable qutrits. Applied Physics Letters, 2020, 116, .	3.3	11
18	Spectral analysis of amplitudes and phases of elastic waves: Application to topological elasticity. Journal of the Acoustical Society of America, 2019, 146, 748-766.	1.1	11

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19	Switching between Crystallization from the Glassy and the Undercooled Liquid Phase in Phase Change Material Ge₂Sb₂Te₅. Advanced Materials, 2019, 31, e1900784.	21.0	64
20	Relative Influence of Topology, Dimensionality and Stoichiometry Toward the Properties of Covalent Network Glasses. Frontiers in Materials, 2019, 6, .	2.4	5
21	Geometric phase invariance in spatiotemporal modulated elastic system. Journal of Sound and Vibration, 2019, 459, 114843.	3.9	8
22	Experimental demonstration of coherent superpositions in an ultrasonic pseudospin. Scientific Reports, 2019, 9, 14156.	3.3	12
23	The sound of Bell states. Communications Physics, 2019, 2, .	5.3	16
24	Phase-change materials: The view from the liquid phase and the metallicity parameter. MRS Bulletin, 2019, 44, 691-698.	3.5	28
25	Fragile-to-strong transitions in glass forming liquids. Journal of Non-Crystalline Solids: X, 2019, 4, 100034.	1.2	14
26	Structural and chemical homogeneity of chalcogenide glass prepared by melt-rocking. Journal of Chemical Physics, 2019, 150, 014505.	3.0	16
27	Optically trapped delayed elasticity in germanium selenide glass fibers. International Journal of Applied Glass Science, 2019, 10, 235-247.	2.0	5
28	Comment on â€œAn experimental critique on the existence of fragile-to-strong transition in glass-forming liquidsâ€ Journal of Non-Crystalline Solids, 2019, 509, 123-126.	3.1	2
29	Breakdown of the Stokes-Einstein relation above the melting temperature in a liquid phase-change material. Science Advances, 2018, 4, eaat8632.	10.3	43
30	Nanograined GeSe4 as a Thermal Insulation Material. Frontiers in Energy Research, 2018, 6, .	2.3	0
31	Composition dependences of refractive index and thermo-optic coefficient in Ge-As-Se chalcogenide glasses. Journal of Non-Crystalline Solids, 2017, 459, 88-93.	3.1	37
32	Chalcogenide glass sensors for bio-molecule detection. , 2017, , .		7
33	Structural evolution on medium-range-order during the fragile-strong transition in Ge15Te85. Acta Materialia, 2017, 129, 259-267.	7.9	47
34	Mechanical model of giant photoexpansion in a chalcogenide glass and the role of photofluidity. Physica B: Condensed Matter, 2017, 516, 85-91.	2.7	7
35	Nonoxide Tellurium-Based Glasses. Springer Series in Materials Science, 2017, , 59-91.	0.6	1
36	Glass Transitions, Semiconductor-Metal Transitions, and Fragilities in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>Ge</mml:mi><mml:mtext>â^'</mml:mtext><mml:mi>V</mml:mi><mml:mtext>â^'</mml:mtext> (<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML") Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 52 Td (display="inline"><mml	3.8	36

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37	Thermomechanical characterization of stress localization in glass: An experimental and numerical study. Strain, 2017, 53, e12234.	2.4	0
38	Tailoring phonon band structures with broken symmetry by shaping spatiotemporal modulations of stiffness in a one-dimensional elastic waveguide. Physical Review B, 2017, 96, .	3.2	14
39	Structure of ZnCl₂ Melt. Part II: Fragile-to-Strong Transition in a Tetrahedral Liquid. Journal of Physical Chemistry B, 2017, 121, 11210-11218.	2.6	29
40	Selenide Glass Fibers for Biochemical Infrared Sensing. , 2017, , 285-319.		4
41	Interplay between structure and transport properties of molten salt mixtures of ZnCl2â€“NaClâ€“KCl: A molecular dynamics study. Journal of Chemical Physics, 2016, 144, 094501.	3.0	28
42	Improving spatio-temporal resolution of infrared images to detect thermal activity of defect at the surface of inorganic glass. Infrared Physics and Technology, 2016, 77, 193-202.	2.9	10
43	Structure of ZnCl₂ Melt. Part I: Raman Spectroscopy Analysis Driven by Ab Initio Methods. Journal of Physical Chemistry B, 2016, 120, 4174-4181.	2.6	20
44	Composition dependence of physical and optical properties in Ge-As-S chalcogenide glasses. Journal of Non-Crystalline Solids, 2016, 440, 38-42.	3.1	60
45	On the structure of Geâ€“Asâ€“Teâ€“Cu glasses. Journal of Non-Crystalline Solids, 2016, 433, 1-5.	3.1	8
46	Structural analysis of Cuâ€“Asâ€“Te glasses: Results from Raman and 65Cu NMR spectroscopy. Journal of Non-Crystalline Solids, 2016, 432, 527-534.	3.1	9
47	Chalcogenide glass fibers: Optical window tailoring and suitability for bio-chemical sensing. Optical Materials, 2015, 47, 530-536.	3.6	48
48	Development of optical fibers for mid-infrared sensing: state of the art and recent achievements. Proceedings of SPIE, 2015, , .	0.8	1
49	Structural Origin of Fragility in Geâ€“Asâ€“S Glasses Investigated by Calorimetry and Raman Spectroscopy. Journal of Physical Chemistry B, 2015, 119, 5096-5101.	2.6	21
50	Phase change alloy viscosities down to <i>Tg</i> using Adam-Gibbs-equation fittings to excess entropy data: A fragile-to-strong transition. Journal of Applied Physics, 2015, 118, .	2.5	60
51	Chalcogenide optical fibers for mid-infrared sensing. Optical Engineering, 2014, 53, 027101.	1.0	53
52	Fabrication, characterization and applications of infrared transparent chalcogenide fibers. , 2014, , .		0
53	Selenide and telluride glasses for mid-infrared bio-sensing. Proceedings of SPIE, 2014, , .	0.8	11
54	Relative Contribution of Stoichiometry and Mean Coordination to the Fragility of Geâ€“Asâ€“Se Glass Forming Liquids. Journal of Physical Chemistry B, 2014, 118, 1436-1442.	2.6	57

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55	Shortâ€Range Order in <scp><scp>Ge</scp></scp>â€“<scp><scp>As</scp></scp>â€“<scp><scp>Te</scp></scp> Glasses. Journal of the American Ceramic Society, 2014, 97, 1625-1632.	3.8	19
56	Relaxation of enthalpy fluctuations during sub-Tg annealing of glassy selenium. Journal of Chemical Physics, 2013, 138, 244504.	3.0	33
57	Photoinduced aging and viscosity evolution in Se-rich Ge-Se glasses. Journal of Applied Physics, 2013, 114, 074901.	2.5	5
58	Enhanced luminescence in Er3+-doped chalcogenide glassâ€“ceramics based on selenium. Optical Materials, 2013, 35, 2527-2530.	3.6	13
59	Thermoelectric bulk glasses based on the Cuâ€“Asâ€“Teâ€“Se system. Journal of Materials Chemistry A, 2013, 1, 8917.	10.3	35
60	Physical properties of the GexSe1âˆ’x glasses in the 0<x<0.42 range in correlation with their structure. Journal of Non-Crystalline Solids, 2013, 377, 54-59.	3.1	58
61	Telluride glasses for far infrared photonic applications. Optical Materials Express, 2013, 3, 1049.	3.0	61
62	Glass-Oxide Nanocomposites as Effective Thermal Insulation Materials. Materials Research Society Symposia Proceedings, 2013, 1558, 1.	0.1	1
63	The Development of Advanced Optical Fibers for Long-Wave Infrared Transmission. Fibers, 2013, 1, 110-118.	4.0	16
64	Telluride Glasses for Infrared Optical Sensing. , 2012, , .		0
65	Te-based chalcohalide glasses for far-infrared optical fiber. Optical Materials Express, 2012, 2, 1470.	3.0	52
66	Fragile-strong behavior in the As<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mi>x</mml:mi></mml:msub></mml:math>Se<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>1</mml:mn><mml:mo>âˆ’</mml:mo><mml:mi>x</mml:mi></mml:mrow></mml:msub></mml:math>glass forming system in relation to structural dimensionality. Physical Review B, 2012, 85, .	3.2	59
67	Nanoporous surface of infrared transparent chalcogenide glassâ€“ceramics by chemical etching. Materials Research Bulletin, 2012, 47, 4076-4081.	5.2	2
68	Competition between photorelaxation and photoexcitation in chalcogenide glasses and the effect of aging. Journal of Non-Crystalline Solids, 2011, 357, 888-892.	3.1	8
69	Advanced infrared glasses for biochemical sensing. , 2011, , 217-243.		3
70	Long-Wave Infrared-Transmitting Optical Fibers. Journal of the American Ceramic Society, 2011, 94, 1761-1765.	3.8	21
71	Thermal and gamma-ray induced relaxation in Asâ€“S glasses: modelling and experiment. Journal Physics D: Applied Physics, 2011, 44, 395402.	2.8	6
72	Detection of bio-molecules using conductive chalcogenide glass sensor. , 2011, , .		0

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73	Mechanism of photostructural changes in mixed-chalcogen Asâ€“Sâ€“Se glasses investigated by Raman spectroscopy. Journal Physics D: Applied Physics, 2011, 44, 045404.	2.8	18
74	Single-mode Low-loss Optical Fibers for Long-wave Infrared Transmission. , 2011, , .		1
75	Highâ€Conductivity Telluriumâ€Based Infrared Transmitting Glasses and their Suitability for Bioâ€Optical Detection. Journal of the American Ceramic Society, 2010, 93, 1941-1944.	3.8	29
76	Composition dependence and reversibility of photoinduced refractive index changes in chalcogenide glass. Journal Physics D: Applied Physics, 2010, 43, 445401.	2.8	23
77	Photoinduced fluidity in chalcogenide glasses at low and high intensities: A model accounting for photon efficiency. Physical Review B, 2010, 82, .	3.2	27
78	Opto-electrophoretic detection of bio-molecules using conducting chalcogenide glass sensors. Optics Express, 2010, 18, 26754.	3.4	28
79	Single-mode low-loss optical fibers for long-wave infrared transmission. Optics Letters, 2010, 35, 3360.	3.3	57
80	Optical microfabrication of tapers in low-loss chalcogenide fibers. Journal of the Optical Society of America B: Optical Physics, 2010, 27, 966.	2.1	20
81	Correlation between structure and physical properties of chalcogenide glasses in the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>As</mml:mtext></mml:mrow><mml:mi>x</mml:mi></mml:msub> Physical Review B, 2010, 82, .	3.2	117
82	Bimodal phase percolation model for the structure of Ge-Se glasses and the existence of the intermediate phase. Physical Review B, 2009, 80, .	3.2	69
83	Integrated Capture and Spectroscopic Detection of Viruses. Applied and Environmental Microbiology, 2009, 75, 6431-6440.	3.1	17
84	Influence of ageing conditions on the mechanical properties of Teâ€“Asâ€“Se fibres. Journal Physics D: Applied Physics, 2009, 42, 095405.	2.8	16
85	Simultaneous microscopic measurements of photodarkening and photoexpansion in chalcogenide films. Journal Physics D: Applied Physics, 2009, 42, 135412.	2.8	13
86	Correlation Between Thermal and Mechanical Relaxation in Chalcogenide Glass Fibers. Journal of the American Ceramic Society, 2009, 92, 1986-1992.	3.8	19
87	Telluriumâ€Based Farâ€Infrared Transmitting Glasses. Journal of the American Ceramic Society, 2009, 92, 2920-2923.	3.8	76
88	Sub-wavelength imaging of photo-induced refractive index pattern in chalcogenide glass films. Optics Communications, 2009, 282, 4370-4373.	2.1	5
89	Origin of photo-induced transmitting oscillations in chalcogenide glasses. Optics Express, 2009, 17, 18165.	3.4	20
90	Reversible giant photocontraction in chalcogenide glass. Optics Express, 2009, 17, 18581.	3.4	29

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91	Forming Glasses from Se and Te. Molecules, 2009, 14, 4337-4350.	3.8	110
92	Glasses for Seeing Beyond Visible. Chemistry - A European Journal, 2008, 14, 432-442.	3.3	134
93	Light-Induced Matrix Softening of Ge-As-Se Network Glasses. Physical Review Letters, 2008, 101, 177402.	7.8	53
94	Chemical stability of chalcogenide infrared glass fibers. Corrosion Science, 2008, 50, 2047-2052.	6.6	27
95	Sub-Tg viscoelastic behaviour of chalcogenide glasses, anomalous viscous flow and stress relaxation. Journal of the Ceramic Society of Japan, 2008, 116, 890-895.	1.1	13
96	Integrated capture and spectroscopic detection of viruses in an aqueous environment. , 2008, , .		2
97	Biocompatibility of Teâ€“Asâ€“Se glass fibers for cell-based bio-optic infrared sensors. Journal of Materials Research, 2007, 22, 1098-1104.	2.6	22
98	Development of Farâ€Infraredâ€Transmitting Te Based Glasses Suitable for Carbon Dioxide Detection and Space Optics. Advanced Materials, 2007, 19, 3796-3800.	21.0	161
99	Infrared Glass?Ceramics With Fine Porous Surfaces for Optical Sensor Applications. Journal of the American Ceramic Society, 2007, 90, 2073-2077.	3.8	35
100	Energy landscape and photoinduced structural changes in chalcogenide glasses. Journal of Physics Condensed Matter, 2006, 18, 5629-5638.	1.8	32
101	Biologically Inspired Sensing: Infrared Spectroscopic Analysis of Cell Responses to an Inhalation Health Hazard. Biotechnology Progress, 2006, 22, 24-31.	2.6	17
102	Photostructural relaxation in Asâ€“Seâ€“S glasses: Effect of network fragility. Journal of Non-Crystalline Solids, 2006, 352, 2067-2072.	3.1	31
103	Advances in chalcogenide fiber evanescent wave biochemical sensing. Analytical Biochemistry, 2006, 351, 1-10.	2.4	90
104	Infrared biosensors using hydrophobic chalcogenide fibers sensitized with live cells. Sensors and Actuators B: Chemical, 2006, 119, 355-362.	7.8	90
105	Lung cell fiber evanescent wave spectroscopic biosensing of inhalation health hazards. Biotechnology and Bioengineering, 2006, 95, 599-612.	3.3	32
106	Calorimetric characterization of photoinduced relaxation in GeSe9 glass. Journal of Applied Physics, 2006, 100, 023502.	2.5	13
107	Hydrophobic chalcogenide fibers for cell-based bio-optical sensors. , 2005, , .		2
108	Evaluation of Toxic Agent Effects on Lung Cells by Fiber Evanescent Wave Spectroscopy. Applied Spectroscopy, 2005, 59, 1-9.	2.2	72

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109	Raman temperature measurement during photostructural changes in GexSe1â[^]'x glass. Journal of Non-Crystalline Solids, 2005, 351, 1653-1657.	3.1	39
110	Competitive photostructural effects inGeâˆ'Seglass. Physical Review B, 2005, 71, .	3.2	40
111	Recent advances in chalcogenide glasses. Journal of Non-Crystalline Solids, 2004, 345-346, 276-283.	3.1	254
112	Photoinduced structural relaxation in chalcogenide glasses. Journal of Non-Crystalline Solids, 2003, 332, 35-42.	3.1	52
113	Photodarkening in Ge3Se17 glass. Journal of Non-Crystalline Solids, 2000, 274, 23-29.	3.1	26
114	Separability and Nonseparability of Elastic States in Arrays of One-Dimensional Elastic Waveguides. , 0, , .		5