

# Pierre Lucas

## List of Publications by Year in descending order

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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	Recent advances in chalcogenide glasses. Journal of Non-Crystalline Solids, 2004, 345-346, 276-283.	3.1	254
2	Development of Far-Infrared Transmitting Te Based Glasses Suitable for Carbon Dioxide Detection and Space Optics. Advanced Materials, 2007, 19, 3796-3800.	21.0	161
3	Glasses for Seeing Beyond Visible. Chemistry - A European Journal, 2008, 14, 432-442.	3.3	134
4	Correlation between structure and physical properties of chalcogenide glasses in the $As_{1-x}S_x$ system. Physical Review B, 2010, 82, .	3.2	117
5	Forming Glasses from Se and Te. Molecules, 2009, 14, 4337-4350.	3.8	110
6	Advances in chalcogenide fiber evanescent wave biochemical sensing. Analytical Biochemistry, 2006, 351, 1-10.	2.4	90
7	Infrared biosensors using hydrophobic chalcogenide fibers sensitized with live cells. Sensors and Actuators B: Chemical, 2006, 119, 355-362.	7.8	90
8	Tellurium-Based Far-Infrared Transmitting Glasses. Journal of the American Ceramic Society, 2009, 92, 2920-2923.	3.8	76
9	Evaluation of Toxic Agent Effects on Lung Cells by Fiber Evanescent Wave Spectroscopy. Applied Spectroscopy, 2005, 59, 1-9.	2.2	72
10	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
11	Switching between Crystallization from the Glassy and the Undercooled Liquid Phase in Phase Change Material $Ge_2Sb_2Te_5$ . Advanced Materials, 2019, 31, e1900784.	21.0	64
12	Telluride glasses for far infrared photonic applications. Optical Materials Express, 2013, 3, 1049.	3.0	61
13	Phase change alloy viscosities down to $T_g$ using Adam-Gibbs-equation fittings to excess entropy data: A fragile-to-strong transition. Journal of Applied Physics, 2015, 118, .	2.5	60
14	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
15	Fragile-strong behavior in the $As_{1-x}S_x$ glass forming system in relation to structural dimensionality. Physical Review B, 2012, 85, .	3.2	59
16	Physical properties of the $GexSe_{1-x}$ glasses in the $0 \leq x \leq 0.42$ range in correlation with their structure. Journal of Non-Crystalline Solids, 2013, 377, 54-59.	3.1	58
17	Single-mode low-loss optical fibers for long-wave infrared transmission. Optics Letters, 2010, 35, 3360.	3.3	57
18	Relative Contribution of Stoichiometry and Mean Coordination to the Fragility of Ge-As-Se Glass Forming Liquids. Journal of Physical Chemistry B, 2014, 118, 1436-1442.	2.6	57

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19	Light-Induced Matrix Softening of Ge-As-Se Network Glasses. <i>Physical Review Letters</i> , 2008, 101, 177402.	7.8	53
20	Chalcogenide optical fibers for mid-infrared sensing. <i>Optical Engineering</i> , 2014, 53, 027101.	1.0	53
21	Photoinduced structural relaxation in chalcogenide glasses. <i>Journal of Non-Crystalline Solids</i> , 2003, 332, 35-42.	3.1	52
22	Te-based chalcogenide glasses for far-infrared optical fiber. <i>Optical Materials Express</i> , 2012, 2, 1470.	3.0	52
23	Chalcogenide glass fibers: Optical window tailoring and suitability for bio-chemical sensing. <i>Optical Materials</i> , 2015, 47, 530-536.	3.6	48
24	Structural evolution on medium-range-order during the fragile-strong transition in Ge <sub>15</sub> Te <sub>85</sub> . <i>Acta Materialia</i> , 2017, 129, 259-267.	7.9	47
25	Breakdown of the Stokes-Einstein relation above the melting temperature in a liquid phase-change material. <i>Science Advances</i> , 2018, 4, eaat8632.	10.3	43
26	Competitive photostructural effects in Ge <sup>~</sup> Se glass. <i>Physical Review B</i> , 2005, 71, .	3.2	40
27	Raman temperature measurement during photostructural changes in Ge <sub>x</sub> Se <sub>1-<sup>x</sup></sub> glass. <i>Journal of Non-Crystalline Solids</i> , 2005, 351, 1653-1657.	3.1	39
28	Composition dependences of refractive index and thermo-optic coefficient in Ge-As-Se chalcogenide glasses. <i>Journal of Non-Crystalline Solids</i> , 2017, 459, 88-93.	3.1	37
29	Class Transitions, Semiconductor-Metal Transitions, and Fragilities in $\langle \text{mml:mrow} \langle \text{mml:mi} \text{Ge} \langle \text{mml:mtext} \hat{\sim} \langle \text{mml:mtext} \rangle \langle \text{mml:mi} \rangle \text{V} \langle \text{mml:mtext} \hat{\sim} \langle \text{mml:mtext} \rangle \langle \text{mml:math} \text{Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50 332 Td} \langle \text{mml:math} \rangle \rangle \rangle \rangle \rangle$		
30	Infrared Glass?Ceramics With Fine Porous Surfaces for Optical Sensor Applications. <i>Journal of the American Ceramic Society</i> , 2007, 90, 2073-2077.	3.8	35
31	Thermoelectric bulk glasses based on the Cu-As-Te-Se system. <i>Journal of Materials Chemistry A</i> , 2013, 1, 8917.	10.3	35
32	Relaxation of enthalpy fluctuations during sub-T <sub>g</sub> annealing of glassy selenium. <i>Journal of Chemical Physics</i> , 2013, 138, 244504.	3.0	33
33	Energy landscape and photoinduced structural changes in chalcogenide glasses. <i>Journal of Physics Condensed Matter</i> , 2006, 18, 5629-5638.	1.8	32
34	Lung cell fiber evanescent wave spectroscopic biosensing of inhalation health hazards. <i>Biotechnology and Bioengineering</i> , 2006, 95, 599-612.	3.3	32
35	Photostructural relaxation in As- <sup>Se</sup> -S glasses: Effect of network fragility. <i>Journal of Non-Crystalline Solids</i> , 2006, 352, 2067-2072.	3.1	31
36	Reversible giant photocontraction in chalcogenide glass. <i>Optics Express</i> , 2009, 17, 18581.	3.4	29

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37	High-Conductivity Tellurium-Based Infrared Transmitting Glasses and their Suitability for Bio-Optical Detection. <i>Journal of the American Ceramic Society</i> , 2010, 93, 1941-1944.	3.8	29
38	Structure of $ZnCl_2$ Melt. Part II: Fragile-to-Strong Transition in a Tetrahedral Liquid. <i>Journal of Physical Chemistry B</i> , 2017, 121, 11210-11218.	2.6	29
39	Opto-electrophoretic detection of bio-molecules using conducting chalcogenide glass sensors. <i>Optics Express</i> , 2010, 18, 26754.	3.4	28
40	Interplay between structure and transport properties of molten salt mixtures of $ZnCl_2$ - $NaCl$ - $KCl$ : A molecular dynamics study. <i>Journal of Chemical Physics</i> , 2016, 144, 094501.	3.0	28
41	Phase-change materials: The view from the liquid phase and the metallicity parameter. <i>MRS Bulletin</i> , 2019, 44, 691-698.	3.5	28
42	Chemical stability of chalcogenide infrared glass fibers. <i>Corrosion Science</i> , 2008, 50, 2047-2052.	6.6	27
43	Photoinduced fluidity in chalcogenide glasses at low and high intensities: A model accounting for photon efficiency. <i>Physical Review B</i> , 2010, 82, .	3.2	27
44	Photodarkening in $Ge_3Se_{17}$ glass. <i>Journal of Non-Crystalline Solids</i> , 2000, 274, 23-29.	3.1	26
45	Composition dependence and reversibility of photoinduced refractive index changes in chalcogenide glass. <i>Journal Physics D: Applied Physics</i> , 2010, 43, 445401.	2.8	23
46	Biocompatibility of $Te-As-Se$ glass fibers for cell-based bio-optic infrared sensors. <i>Journal of Materials Research</i> , 2007, 22, 1098-1104.	2.6	22
47	Long-Wave Infrared-Transmitting Optical Fibers. <i>Journal of the American Ceramic Society</i> , 2011, 94, 1761-1765.	3.8	21
48	Structural Origin of Fragility in $Ge-As-S$ Glasses Investigated by Calorimetry and Raman Spectroscopy. <i>Journal of Physical Chemistry B</i> , 2015, 119, 5096-5101.	2.6	21
49	Origin of photo-induced transmitting oscillations in chalcogenide glasses. <i>Optics Express</i> , 2009, 17, 18165.	3.4	20
50	Optical microfabrication of tapers in low-loss chalcogenide fibers. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2010, 27, 966.	2.1	20
51	Structure of $ZnCl_2$ Melt. Part I: Raman Spectroscopy Analysis Driven by Ab Initio Methods. <i>Journal of Physical Chemistry B</i> , 2016, 120, 4174-4181.	2.6	20
52	Correlation Between Thermal and Mechanical Relaxation in Chalcogenide Glass Fibers. <i>Journal of the American Ceramic Society</i> , 2009, 92, 1986-1992.	3.8	19
53	Short-Range Order in $Ge-As-Te$ Glasses. <i>Journal of the American Ceramic Society</i> , 2014, 97, 1625-1632.	3.8	19
54	Violation of the Stokes-Einstein relation in $Ge_2Sb_2Te_5$ , $GeTe$ , $Ag_4In_3Sb_6Te_{26}$ , and $Ge_{15}Sb_{85}$ , and its connection to fast crystallization. <i>Acta Materialia</i> , 2020, 195, 491-500.	7.9	19

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55	Mechanism of photostructural changes in mixed-chalcogen As <sup>3+</sup> Se glasses investigated by Raman spectroscopy. <i>Journal Physics D: Applied Physics</i> , 2011, 44, 045404.	2.8	18
56	Biologically Inspired Sensing: Infrared Spectroscopic Analysis of Cell Responses to an Inhalation Health Hazard. <i>Biotechnology Progress</i> , 2006, 22, 24-31.	2.6	17
57	Integrated Capture and Spectroscopic Detection of Viruses. <i>Applied and Environmental Microbiology</i> , 2009, 75, 6431-6440.	3.1	17
58	Influence of ageing conditions on the mechanical properties of Te <sup>4+</sup> As <sup>3+</sup> Se fibres. <i>Journal Physics D: Applied Physics</i> , 2009, 42, 095405.	2.8	16
59	The Development of Advanced Optical Fibers for Long-Wave Infrared Transmission. <i>Fibers</i> , 2013, 1, 110-118.	4.0	16
60	The sound of Bell states. <i>Communications Physics</i> , 2019, 2, .	5.3	16
61	Structural and chemical homogeneity of chalcogenide glass prepared by melt-rocking. <i>Journal of Chemical Physics</i> , 2019, 150, 014505.	3.0	16
62	Fragile-to-Strong Transition in Phase-Change Material Ge <sub>3</sub> Sb <sub>6</sub> Te <sub>5</sub> . <i>Advanced Functional Materials</i> , 2022, 32, .	14.9	16
63	Tailoring phonon band structures with broken symmetry by shaping spatiotemporal modulations of stiffness in a one-dimensional elastic waveguide. <i>Physical Review B</i> , 2017, 96, .	3.2	14
64	Fragile-to-strong transitions in glass forming liquids. <i>Journal of Non-Crystalline Solids: X</i> , 2019, 4, 100034.	1.2	14
65	Calorimetric characterization of photoinduced relaxation in GeSe <sub>9</sub> glass. <i>Journal of Applied Physics</i> , 2006, 100, 023502.	2.5	13
66	Sub-Tg viscoelastic behaviour of chalcogenide glasses, anomalous viscous flow and stress relaxation. <i>Journal of the Ceramic Society of Japan</i> , 2008, 116, 890-895.	1.1	13
67	Simultaneous microscopic measurements of photodarkening and photoexpansion in chalcogenide films. <i>Journal Physics D: Applied Physics</i> , 2009, 42, 135412.	2.8	13
68	Enhanced luminescence in Er <sup>3+</sup> -doped chalcogenide glass-ceramics based on selenium. <i>Optical Materials</i> , 2013, 35, 2527-2530.	3.6	13
69	Liquid-liquid phase transitions in glass-forming systems and their implications for memory technology. <i>International Journal of Applied Glass Science</i> , 2020, 11, 236-244.	2.0	13
70	Experimental demonstration of coherent superpositions in an ultrasonic pseudospin. <i>Scientific Reports</i> , 2019, 9, 14156.	3.3	12
71	Control of effective cooling rate upon magnetron sputter deposition of glassy Ge <sub>15</sub> Te <sub>85</sub> . <i>Scripta Materialia</i> , 2020, 178, 223-226.	5.2	12
72	Approaching the Glass Transition Temperature of GeTe by Crystallizing Ge <sub>15</sub> Te <sub>85</sub> . <i>Physica Status Solidi - Rapid Research Letters</i> , 2021, 15, 2000478.	2.4	12

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73	Selenide and telluride glasses for mid-infrared bio-sensing. Proceedings of SPIE, 2014, , .	0.8	11
74	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
75	Experimental demonstration of elastic analogues of nonseparable qutrits. Applied Physics Letters, 2020, 116, .	3.3	11
76	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
77	Glass transition of the phase change material AIST and its impact on crystallization. Materials Science in Semiconductor Processing, 2021, 134, 105990.	4.0	10
78	Structural analysis of Cu-As-Te glasses: Results from Raman and <sup>65</sup> Cu NMR spectroscopy. Journal of Non-Crystalline Solids, 2016, 432, 527-534.	3.1	9
79	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
80	On the structure of Ge-As-Te-Cu glasses. Journal of Non-Crystalline Solids, 2016, 433, 1-5.	3.1	8
81	Geometric phase invariance in spatiotemporal modulated elastic system. Journal of Sound and Vibration, 2019, 459, 114843.	3.9	8
82	Chalcogenide glass sensors for bio-molecule detection. , 2017, , .		7
83	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
84	Fragile-to-strong transitions in glass forming liquids. Journal of Non-Crystalline Solids, 2021, 557, 119367.	3.1	7
85	Thermal and gamma-ray induced relaxation in As-S glasses: modelling and experiment. Journal Physics D: Applied Physics, 2011, 44, 395402.	2.8	6
86	Extended aging of Ge-Se glasses below the glass transition temperature. Journal of Chemical Physics, 2021, 154, 164502.	3.0	6
87	Sub-wavelength imaging of photo-induced refractive index pattern in chalcogenide glass films. Optics Communications, 2009, 282, 4370-4373.	2.1	5
88	Photoinduced aging and viscosity evolution in Se-rich Ge-Se glasses. Journal of Applied Physics, 2013, 114, 074901.	2.5	5
89	Relative Influence of Topology, Dimensionality and Stoichiometry Toward the Properties of Covalent Network Glasses. Frontiers in Materials, 2019, 6, .	2.4	5
90	Optically trapped delayed elasticity in germanium selenide glass fibers. International Journal of Applied Glass Science, 2019, 10, 235-247.	2.0	5

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91	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
92	Separability and Nonseparability of Elastic States in Arrays of One-Dimensional Elastic Waveguides. , 0, , ,		5
93	The glass transition of water, insight from phase change materials. Journal of Non-Crystalline Solids: X, 2022, 14, 100084.	1.2	5
94	Selenide Glass Fibers for Biochemical Infrared Sensing. , 2017, , 285-319.		4
95	Advanced infrared glasses for biochemical sensing. , 2011, , 217-243.		3
96	Navigating the Hilbert space of elastic bell states in driven coupled waveguides. Wave Motion, 2022, , 102966.	2.0	3
97	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
98	Hydrophobic chalcogenide fibers for cell-based bio-optical sensors. , 2005, , .		2
99	Nanoporous surface of infrared transparent chalcogenide glassâ€“ceramics by chemical etching. Materials Research Bulletin, 2012, 47, 4076-4081.	5.2	2
100	Integrated capture and spectroscopic detection of viruses in an aqueous environment. , 2008, , .		2
101	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
102	Broadband pyramid antireflective structure on chalcogenide glasses by the hot embossing method for infrared photonics. Optical Materials Express, 2022, 12, 1638.	3.0	2
103	Origin of photoelastic phenomena in Ge-Se network glasses. Physical Review B, 2021, 104, .	3.2	2
104	Glass-Oxide Nanocomposites as Effective Thermal Insulation Materials. Materials Research Society Symposia Proceedings, 2013, 1558, 1.	0.1	1
105	Development of optical fibers for mid-infrared sensing: state of the art and recent achievements. Proceedings of SPIE, 2015, , .	0.8	1
106	Nonoxide Tellurium-Based Glasses. Springer Series in Materials Science, 2017, , 59-91.	0.6	1
107	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
108	Single-mode Low-loss Optical Fibers for Long-wave Infrared Transmission. , 2011, , .		1

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109	Detection of bio-molecules using conductive chalcogenide glass sensor. , 2011, , .		0
110	Telluride Glasses for Infrared Optical Sensing. , 2012, , .		0
111	Fabrication, characterization and applications of infrared transparent chalcogenide fibers. , 2014, , .		0
112	Thermomechanical characterization of stress localization in glass: An experimental and numerical study. Strain, 2017, 53, e12234.	2.4	0
113	Nanograined GeSe4 as a Thermal Insulation Material. Frontiers in Energy Research, 2018, 6, .	2.3	0
114	Charles Austen Angell, 1933â€“2021. Journal of Non-Crystalline Solids, 2021, 568, 120869.	3.1	0