Silvia Caponi

List of Publications by Year
in descending order

84 papers	1,693 citations	279798 23 h-index	315739 38 g-index
84 all docs	84 docs citations	84 times ranked	1393 citing authors

#	Article	IF	Citations
1	Evidence for a Crossover in the Frequency Dependence of the Acoustic Attenuation in Vitreous Silica. Physical Review Letters, 2006, 97, 035501.	7.8	100
2	Non-contact mechanical and chemical analysis of single living cells by microspectroscopic techniques. Light: Science and Applications, 2018, 7, 17139-17139.	16.6	91
3	Viscoelasticity of amyloid plaques in transgenic mouse brain studied by Brillouin microspectroscopy and correlative Raman analysis. Journal of Innovative Optical Health Sciences, 2017, 10, 1742001.	1.0	74
4	Biomechanics of fibrous proteins of the extracellular matrix studied by Brillouin scattering. Journal of the Royal Society Interface, 2014, 11, 20140739.	3.4	72
5	Evidence of anomalous dispersion of the generalized sound velocity in glasses. Physical Review B, 2004, 69, .	3.2	71
6	Raman-Scattering Measurements of the Vibrational Density of States of a Reactive Mixture During Polymerization: Effect on the Boson Peak. Physical Review Letters, 2009, 102, 027402.	7.8	64
7	Viscoelastic properties of biopolymer hydrogels determined by Brillouin spectroscopy: A probe of tissue micromechanics. Science Advances, 2020, 6, .	10.3	61
8	Networking Properties of Cyclodextrin-Based Cross-Linked Polymers Probed by Inelastic Light-Scattering Experiments. Journal of Physical Chemistry B, 2012, 116, 5323-5327.	2.6	58
9	The low energy excess of vibrational states in v-SiO2: the role of transverse dynamics. Journal of Physics Condensed Matter, 2004, 16, 8519-8530.	1.8	52
10	Extracellular vesicles released by fibroblasts undergoing H-Ras induced senescence show changes in lipid profile. PLoS ONE, 2017, 12, e0188840.	2.5	52
11	Sound attenuation in a unexplored frequency region: Brillouin ultraviolet light scattering measurements invâ^'SiO2. Physical Review B, 2005, 71, .	3.2	50
12	Effect of temperature on the vibrational density of states in vitreous<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi>SiO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>: A Raman study. Physical Review B, 2007, 76, .	3.2	50
13	Elastic properties of permanently densified silica: A Raman, Brillouin light, and x-ray scattering study. Physical Review B, 2010, 81, .	3.2	49
14	Morpho-mechanics of human collagen superstructures revealed by all-optical correlative micro-spectroscopies. Communications Biology, 2019, 2, 117.	4.4	49
15	High-Performance Versatile Setup for Simultaneous Brillouin-Raman Microspectroscopy. Physical Review X, 2017, 7, .	8.9	44
16	Infrared versus light scattering techniques to monitor the gel to liquid crystal phase transition in lipid membranes. Journal of Raman Spectroscopy, 2015, 46, 644-651.	2.5	40
17	On the actual spatial resolution of Brillouin Imaging. Optics Letters, 2020, 45, 1063.	3.3	35
18	Bio-mechanical characterization of a CAD/CAM PMMA resin for digital removable prostheses. Dental Materials, 2021, 37, e118-e130.	3.5	31

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19	Raman micro-spectroscopy: A powerful tool for the monitoring of dynamic supramolecular changes in living cells. Biophysical Chemistry, 2013, 182, 58-63.	2.8	27
20	High-contrast Brillouin and Raman micro-spectroscopy for simultaneous mechanical and chemical investigation of microbial biofilms. Biophysical Chemistry, 2017, 229, 123-129.	2.8	27
21	Acoustic attenuation in silica porous systems. Journal of Non-Crystalline Solids, 2003, 322, 29-34.	3.1	25
22	Cauchy relation in relaxing liquids. Journal of Chemical Physics, 2008, 128, 214502.	3.0	25
23	Relevant Length Scales in Brillouin Imaging of Biomaterials: The Interplay between Phonons Propagation and Light Focalization. ACS Photonics, 2020, 7, 2319-2328.	6.6	25
24	The Raman coupling function in disordered solids: a light and neutron scattering study on glasses of different fragility. Journal of Physics Condensed Matter, 2007, 19, 205145.	1.8	23
25	Aggregation processes in micellar solutions: a Raman study. Journal of Raman Spectroscopy, 2012, 43, 1877-1883.	2.5	23
26	Bio-hybrid interfaces to study neuromorphic functionalities: New multidisciplinary evidences of cell viability on poly(anyline) (PANI), a semiconductor polymer with memristive properties. Biophysical Chemistry, 2016, 208, 40-47.	2.8	23
27	Intramolecular origin of the fast relaxations observed in the Brillouin light scattering spectra of molecular glass formers. Physical Review E, 2000, 62, R7595-R7598.	2.1	22
28	Acoustic and thermal properties of silica aerogels and xerogels. Physical Review B, 2004, 70, .	3.2	20
29	Brillouin-Raman mapping of natural fibers with spectral moment analysis. Biomedical Optics Express, 2019, 10, 1469.	2.9	19
30	Debye to non-Debye scaling of the Boson peak dynamics: Critical behavior and local disorder in vitreous germania. Journal of Chemical Physics, 2011, 135, 174506.	3.0	18
31	Hydration and aggregation of lysozyme by extended frequency range depolarized light scattering. Journal of Non-Crystalline Solids, 2015, 407, 472-477.	3.1	18
32	Hydrogen bonding dynamics of cyclodextrinâ€“water solutions by depolarized light scattering. Journal of Raman Spectroscopy, 2011, 42, 1479-1483.	2.5	17
33	Quasi-elastic scattering in vitreous silica: A Raman and neutron scattering study. Journal of Non-Crystalline Solids, 2005, 351, 1928-1931.	3.1	16
34	Ergodicity breaking in strong and network-forming glassy systems. Physical Review B, 2009, 79, .	3.2	16
35	Stress effects on the elastic properties of amorphous polymeric materials. Journal of Chemical Physics, 2014, 141, 214901.	3.0	16
36	Cryopreservation of cells: FT-IR monitoring of lipid membrane at freezeâ€“thaw cycles. Biophysical Chemistry, 2016, 208, 34-39.	2.8	15

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37	Bioinspired Reactive Interfaces Based on Layered Double Hydroxides-Zn Rich Hydroxyapatite with Antibacterial Activity. ACS Biomaterials Science and Engineering, 2021, 7, 1361-1373.	5.2	15
38	X-ray diffraction and Raman scattering measurements on silica xerogels. Journal of Non-Crystalline Solids, 2002, 307-310, 135-141.	3.1	14
39	Stress-Induced Modification of the Boson Peak Scaling Behavior. Journal of Physical Chemistry B, 2013, 117, 14477-14485.	2.6	14
40	Preparation of Extracellular Matrix Protein Fibers for Brillouin Spectroscopy. Journal of Visualized Experiments, 2016, , .	0.3	14
41	Vibrational dynamic of â€˜strongâ€™ glasses: the case of v-SiO2 and v-GeO2. Journal of Non-Crystalline Solids, 2003, 322, 53-57.	3.1	13
42	Mechano-chemistry of human femoral diaphysis revealed by correlative Brillouinâ€“Raman microspectroscopy. Scientific Reports, 2020, 10, 17341.	3.3	13
43	Non-contact elastography methods in mechanobiology: a point of view. European Biophysics Journal, 2022, 51, 99-104.	2.2	13
44	Effect of polymerization on the boson peak, from liquid to glass. Journal of Non-Crystalline Solids, 2011, 357, 530-533.	3.1	12
45	Covalent Immobilization of Proteases on Polylactic Acid for Proteins Hydrolysis and Waste Biomass Protein Content Valorization. Catalysts, 2021, 11, 167.	3.5	11
46	Raman micro-spectroscopy study of living SH-SY5Y cells adhering on different substrates. Biophysical Chemistry, 2016, 208, 48-53.	2.8	10
47	X-ray and neutron scattering studies in vitreous silica: Acoustic nature of vibrational dynamics in the mesoscopic range. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 2002, 82, 223-232.	0.6	9
48	Phonon attenuation in vitreous silica and silica porous systems. Philosophical Magazine, 2004, 84, 1423-1431.	1.6	9
49	Dynamic-to-static crossover in the acoustic attenuation of v-GeO 2. Europhysics Letters, 2007, 78, 36001.	2.0	9
50	A multidisciplinary approach to study the functional properties of neuron-like cell models constituting a living bio-hybrid system: SH-SY5Y cells adhering to PANI substrate. AIP Advances, 2016, 6, .	1.3	9
51	Primary cortical neurons on PMCS TiO 2 films towards bio-hybrid memristive device: A morpho-functional study. Biophysical Chemistry, 2017, 229, 115-122.	2.8	9
52	Disentanglement of Multiple Scattering Contribution in Brillouin Microscopy. ACS Photonics, 2022, 9, 2087-2091.	6.6	9
53	Electro-optic modulator for high resolution Brillouin scattering measurements. Review of Scientific Instruments, 2001, 72, 198-200.	1.3	8
54	Brillouinâ€“Raman microspectroscopy for the morpho-mechanical imaging of human lamellar bone. Journal of the Royal Society Interface, 2022, 19, 20210642.	3.4	8

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55	Correlative Brillouin and Raman spectroscopy data acquired on single cells. Data in Brief, 2020, 29, 105223.	1.0	7
56	Fast MoS$$_2$$ thickness identification by transmission imaging. Applied Nanoscience (Switzerland), 2021, 11, 605-610.	3.1	7
57	Diagnostic techniques for photonic materials based on Raman and Brillouin spectroscopies. Optoelectronics Letters, 2007, 3, 188-191.	0.8	6
58	High charge density silica micro-electrets fabricated by electron beam. Smart Materials and Structures, 2018, 27, 075052.	3.5	6
59	Vibrational Properties of Cyclodextrinâ€“Water Solutions Investigated by Low-Frequency Raman Scattering: Temperature and Concentration Effects. Food Biophysics, 2011, 6, 227-232.	3.0	5
60	Meso-Raman approach for rapid yeast cells identification. Biophysical Chemistry, 2019, 254, 106249.	2.8	5
61	Brillouin scattering in planar waveguides. II. Experiments. Journal of Applied Physics, 2003, 94, 4882.	2.5	4
62	Influence of thermal treatment in high and low frequency dynamics of silica porous systems. Journal of Non-Crystalline Solids, 2004, 345-346, 61-65.	3.1	4
63	The influence of the fictive temperature and the OH content on the dynamical properties of vitreous silica: comparison of Raman, Brillouin, and neutron scattering spectra. Journal of Physics Condensed Matter, 2007, 19, 205149.	1.8	4
64	The vibrational dynamics of GeO2at the glass transition: a Raman and Brillouin scattering study. Philosophical Magazine, 2011, 91, 1910-1916.	1.6	4
65	Predicting the Refractive Index of Tissue Models Using Light Scattering Spectroscopy. Applied Spectroscopy, 2021, 75, 574-580.	2.2	4
66	Brillouin ultraviolet light scattering on vitreous silica. Journal of Non-Crystalline Solids, 2005, 351, 1919-1923.	3.1	3
67	Neutron scattering studies of vitreous germania. Journal of Non-Crystalline Solids, 2003, 322, 7-10.	3.1	2
68	Microâ€Raman detection of the differentiation state of <scp>SHâ€SY5Y</scp> cells grown on silicon and aluminium substrates. Journal of Raman Spectroscopy, 2018, 49, 1031-1040.	2.5	2
69	Transition across a sharp interface: Data from Raman and Brillouin imaging spectroscopy. Data in Brief, 2020, 33, 106368.	1.0	2
70	Characterization Tools for Mechanical Probing of Biomimetic Materials. , 2019, , 69-111.		2
71	Nanoengineering for Mechanobiology â€œN4M-20â€• European Biophysics Journal, 2022, 51, 97-98.	2.2	2
72	The Debyeâ€“Waller factor approaching the glass-transition temperature in phosphate glasses. Journal of Non-Crystalline Solids, 2006, 352, 4577-4582.	3.1	1

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73	Low-temperature phonon damping in vitreous silica explored by UV Brillouin spectroscopy. Philosophical Magazine, 2007, 87, 603-612.	1.6	1
74	A link between quasielastic scattering and sound attenuation in silver phosphate glasses. Philosophical Magazine, 2008, 88, 4079-4084.	1.6	1
75	Vibrational Properties Of A Reactive Mixture Investigated During A Chemical Vitrification Process. AIP Conference Proceedings, 2010, , .	0.4	1
76	Influence of temperature on quasi-elastic scattering in GeO2glass. Philosophical Magazine, 2011, 91, 1887-1893.	1.6	1
77	Different routes to the glass transition: A comparison between chemical and physical vitrification. , 2012, , .		1
78	Cluster Phases of Decorated Micellar Solutions with Macrocyclic Ligands. Journal of Physical Chemistry B, 2013, 117, 3613-3623.	2.6	1
79	Effect of elastic properties modification on the vibrational density of states: A joint Brillouin and Raman scattering study. Journal of Applied Polymer Science, 2011, 122, 3672-3676.	2.6	0
80	The Action of Ligands in the Aggregation Process of Soft Colloidal Solution Monitored by Raman Spectroscopy. Food Biophysics, 2013, 8, 203-208.	3.0	0
81	All-optical correlative micro-spectroscopies in the investigation of stromal collagen morpho-mechanics. , 2020, , .		0
82	Label-free investigation of human collagen morpho-mechanics by correlative SHG, Brillouin and Raman microscopy. , 2020, , .		0
83	Corneal collagen morpho-mechanics characterized by correlative optical microscopies. , 2020, , .		0
84	Multimodal imaging for mechanical and chemical mapping at the microscale: applications on single cells and tissues. , 2021, , .		0