

Osamu Matsuda

List of Publications by Year in descending order

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143
papers

2,995
citations

201575

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h-index

197736

49
g-index

147
all docs

147
docs citations

147
times ranked

2201
citing authors

#	ARTICLE	IF	CITATIONS
1	Fundamentals of picosecond laser ultrasonics. Ultrasonics, 2015, 56, 3-20.	2.1	184
2	Coherent Shear Phonon Generation and Detection with Ultrashort Optical Pulses. Physical Review Letters, 2004, 93, 095501.	2.9	140
3	Picosecond acoustic phonon pulse generation in nickel and chromium. Physical Review B, 2003, 67, .	1.1	136
4	Ultrafast carrier diffusion in gallium arsenide probed with picosecond acoustic pulses. Physical Review B, 2001, 64, .	1.1	126
5	Scanning ultrafast Sagnac interferometry for imaging two-dimensional surface wave propagation. Review of Scientific Instruments, 2006, 77, 043713.	0.6	126
6	Watching Ripples on Crystals. Physical Review Letters, 2002, 88, 185504.	2.9	118
7	Reflection and transmission of light in multilayers perturbed by picosecond strain pulse propagation. Journal of the Optical Society of America B: Optical Physics, 2002, 19, 3028.	0.9	91
8	Imaging Ripples on Phononic Crystals Reveals Acoustic Band Structure and Bloch Harmonics. Physical Review Letters, 2006, 97, 055502.	2.9	77
9	Ultrafast Vibrations of Gold Nanorings. Nano Letters, 2011, 11, 3893-3898.	4.5	67
10	Acoustic phonon generation and detection in GaAs/Al _{0.3} Ga _{0.7} As quantum wells with picosecond laser pulses. Physical Review B, 2005, 71, .	1.1	66
11	Complex band structures of two dimensional phononic crystals: Analysis by the finite element method. Journal of Applied Physics, 2013, 114, .	1.1	65
12	Coherent shear phonon generation and detection with picosecond laser acoustics. Physical Review B, 2008, 77, .	1.1	60
13	Laser picosecond acoustics in isotropic and anisotropic materials. Ultrasonics, 2000, 38, 470-474.	2.1	58
14	Three-dimensional imaging of biological cells with picosecond ultrasonics. Applied Physics Letters, 2015, 106, .	1.5	58
15	Broadband evolution of phononic-crystal-waveguide eigenstates in real- and k-spaces. Scientific Reports, 2013, 3, 3351.	1.6	57
16	Dynamic visualization of surface acoustic waves on a two-dimensional phononic crystal. Physical Review B, 2009, 80, .	1.1	56
17	Raman spectra of tetrahedral vibrations in crystalline germanium dichalcogenides, GeS ₂ and GeSe ₂ , in high and low temperature forms. Solid State Communications, 1991, 79, 905-910.	0.9	48
18	A Raman scattering investigation of the structure of glassy and liquid Ge _x Se _{1-x} . Journal of Non-Crystalline Solids, 1998, 232-234, 702-707.	1.5	43

#	ARTICLE	IF	CITATIONS
19	Imaging gigahertz zero-group-velocity Lamb waves. Nature Communications, 2019, 10, 2228.	5.8	43
20	Formation and photoluminescence of quantum wire structures on vicinal (110) GaAs substrates by MBE. Journal of Crystal Growth, 1993, 127, 1041-1044.	0.7	42
21	Tomographic reconstruction of picosecond acoustic strain propagation. Applied Physics Letters, 2007, 90, 041114.	1.5	38
22	Real-time imaging of acoustic waves on a bulk acoustic resonator. Applied Physics Letters, 2008, 93, 261101.	1.5	34
23	In situ monitoring of the growth of ice films by laser picosecond acoustics. Journal of Applied Physics, 2006, 100, 073506.	1.1	32
24	Real-time imaging of acoustic rectification. Applied Physics Letters, 2011, 99, .	1.5	31
25	Optical excitation and detection of picosecond acoustic pulses in liquid mercury. Physical Review B, 2008, 78, .	1.1	30
26	Focusing and subwavelength imaging of surface acoustic waves in a solid-air phononic crystal. Journal of Applied Physics, 2012, 112, .	1.1	30
27	Wideband fluorescence-based thermometry by neural network recognition: Photothermal application with 10 ⁻⁶ s time resolution. Journal of Applied Physics, 2015, 118, .	1.1	30
28	Imaging gigahertz surface acoustic waves through the photoelastic effect. Journal of the Optical Society of America B: Optical Physics, 2010, 27, 2632.	0.9	29
29	Resonant Raman study on crystalline GeSe ₂ in relation to amorphous states. Solid State Communications, 1990, 75, 303-308.	0.9	28
30	Photothermal probing of inhomogeneously modulated transparent thin films. Journal of Applied Physics, 2002, 91, 5002-5009.	1.1	27
31	Time-resolved surface acoustic wave propagation across a single grain boundary. Physical Review B, 2006, 73, .	1.1	25
32	Coherent control of gigahertz surface acoustic and bulk phonons using ultrafast optical pulses. Applied Physics Letters, 2008, 93, 113101.	1.5	25
33	Bulk and surface acoustic wave phenomena in crystals: Observation and interpretation. Wave Motion, 2013, 50, 1197-1217.	1.0	25
34	Time-domain imaging of gigahertz surface waves on an acoustic metamaterial. New Journal of Physics, 2018, 20, 013026.	1.2	25
35	Electron dynamics in chromium probed with 20-fs optical pulses. Physical Review B, 2003, 68, .	1.1	24
36	Optical tracking of picosecond coherent phonon pulse focusing inside a sub-micron object. Light: Science and Applications, 2016, 5, e16082-e16082.	7.7	24

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37	Spectral and Spatial Behavior of Raman Scattering and Photoluminescence from Porous Silicon. Japanese Journal of Applied Physics, 1992, 31, L997-L1000.	0.8	23
38	Time resolved imaging of carrier and thermal transport in silicon. Journal of Applied Physics, 2010, 107, .	1.1	23
39	Mapping the band structure of a surface phononic crystal. New Journal of Physics, 2011, 13, 013037.	1.2	23
40	Gigahertz Optomechanical Modulation by Split-Ring-Resonator Nanophotonic Meta-Atom Arrays. Nano Letters, 2017, 17, 6684-6689.	4.5	23
41	Inverse-photoemission study of the conduction bands in amorphous GeSe ₂ . Physical Review B, 1993, 47, 15509-15514.	1.1	22
42	Vibrational modes of GaAs hexagonal nanopillar arrays studied with ultrashort optical pulses. Applied Physics Letters, 2012, 100, .	1.5	22
43	Relation of structural and elastic crossover length investigated by low-frequency Raman scattering in Ge _x Se _{1-x} glasses. Physical Review B, 1998, 57, 10228-10231.	1.1	21
44	Raman-spectroscopy studies on rigidity percolation and fragility in Ge ⁺ (S,Se) glasses. Journal of Non-Crystalline Solids, 2000, 266-269, 872-875.	1.5	21
45	Laser picosecond acoustics with oblique probe light incidence. Review of Scientific Instruments, 2003, 74, 895-897.	0.6	21
46	Spatiotemporal mapping of surface acoustic waves in isotropic and anisotropic materials. Ultrasonics, 2002, 40, 55-59.	2.1	19
47	Direct access to the dispersion relations of multiple anisotropic surface acoustic modes by Fourier image analysis. Applied Physics Letters, 2003, 83, 1340-1342.	1.5	19
48	Ultrafast ellipsometric interferometry for direct detection of coherent phonon strain pulse profiles. Journal of the Optical Society of America B: Optical Physics, 2013, 30, 1911.	0.9	19
49	Laser spot size dependence of photo-induced crystallization process in amorphous GeSe ₂ film. Journal of Non-Crystalline Solids, 1996, 198-200, 740-743.	1.5	18
50	Photoluminescence study of glassy Ge(S _x Se _{1-x}) ₂ . Journal of Non-Crystalline Solids, 1996, 198-200, 732-735.	1.5	18
51	Raman and photoluminescence investigations of ZnSe-ZnS strained-layer superlattices. Solid State Communications, 1988, 67, 779-782.	0.9	17
52	Hysteresis of the cantilever shift in ultrasonic force microscopy. Applied Physics Letters, 2002, 80, 2386-2388.	1.5	17
53	Real Time Imaging of Surface Acoustic Waves on Crystals and Microstructures. Japanese Journal of Applied Physics, 2005, 44, 4292-4296.	0.8	17
54	Temperature dependence of Raman spectra in amorphous, crystalline and liquid GeSe ₂ . Journal of Non-Crystalline Solids, 1996, 198-200, 753-757.	1.5	16

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55	Vibrations of microspheres probed with ultrashort optical pulses. <i>Optics Letters</i> , 2009, 34, 3740.	1.7	16
56	Point source in a phononic grating: stop bands give rise to phonon-focusing caustics. <i>New Journal of Physics</i> , 2012, 14, 123015.	1.2	16
57	A comparison between the Raman modes of the tetrahedral network in amorphous and layered crystalline GeSe ₂ . <i>Journal of Non-Crystalline Solids</i> , 1992, 150, 197-201.	1.5	15
58	Watching surface waves in phononic crystals. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2015, 373, 20140364.	1.6	15
59	Gigahertz Optomechanical Photon-Phonon Transduction between Nanostructure Lines. <i>Nano Letters</i> , 2021, 21, 6261-6267.	4.5	15
60	Reversible mesoscopic structural transformations in vacuum evaporated amorphous Ge ₃₀ Se ₇₀ film studied by Raman scattering. <i>Journal of Non-Crystalline Solids</i> , 1998, 238, 91-97.	1.5	14
61	Real-time imaging of surface acoustic waves in thin films and microstructures on opaque substrates (invited). <i>Review of Scientific Instruments</i> , 2003, 74, 519-522.	0.6	14
62	A Green's function method for surface acoustic waves in functionally graded materials. <i>Journal of the Acoustical Society of America</i> , 2007, 121, 3437.	0.5	14
63	Resonant Raman scattering in crystalline GeSe ₂ . <i>Physical Review B</i> , 2000, 61, 15569-15572.	1.1	12
64	Mapping gigahertz vibrations in a plasmonic-phononic crystal. <i>New Journal of Physics</i> , 2013, 15, 023013.	1.2	12
65	Perfect acoustic bandgap metabeam based on a quadruple-mode resonator array. <i>Applied Physics Letters</i> , 2019, 115, .	1.5	12
66	Structural changes during photo-induced and thermal crystallization processes in evaporated amorphous GeSe ₂ films by Raman scattering. <i>Journal of Non-Crystalline Solids</i> , 1998, 232-234, 554-559.	1.5	11
67	Wavelength selective photoexcitation of picosecond acoustic-phonon pulses in a triple GaAs/Al _{0.3} Ga _{0.7} As quantum well structure. <i>Physica B: Condensed Matter</i> , 2002, 316-317, 205-208.	1.3	11
68	Imaging of transient surface acoustic waves by full-field photorefractive interferometry. <i>Review of Scientific Instruments</i> , 2015, 86, 053107.	0.6	11
69	Time-domain Brillouin scattering assisted by diffraction gratings. <i>Physical Review B</i> , 2018, 97, .	1.1	11
70	Compact acoustic metamaterial based on the 3D Mie resonance of a maze ball with an octahedral structure. <i>Applied Physics Letters</i> , 2022, 120, 161701.	1.5	11
71	A model calculation of the characteristic Raman modes in the tetrahedral network structures of GeSe ₂ . <i>Physica B: Condensed Matter</i> , 1996, 219-220, 520-522.	1.3	10
72	Cantilever Dynamics in Ultrasonic Force Microscopy. <i>Japanese Journal of Applied Physics</i> , 2002, 41, 3545-3546.	0.8	10

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73	Time-resolved gigahertz acoustic wave imaging at arbitrary frequencies. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2015, 62, 584-595.	1.7	10
74	Imaging arbitrary acoustic whispering-gallery modes in the gigahertz range with ultrashort light pulses. Optics Letters, 2015, 40, 2157.	1.7	10
75	Disorder in GeSe ₂ small crystals and medium-range structure in amorphous GeSe ₂ . Journal of Non-Crystalline Solids, 1992, 150, 202-206.	1.5	9
76	Composition Modulation in Quantum Wire Structures on Vicinal (110) GaAs Studied by Photoluminescence. Japanese Journal of Applied Physics, 1995, 34, 1342-1344.	0.8	9
77	Photoemission and inverse-photoemission study of the electronic structure of p- and n-type amorphous Ge _{1-x} Se _{1-x} Bi films. Journal of Non-Crystalline Solids, 1996, 198-200, 688-691.	1.5	9
78	Surface phonon imaging through the photoelastic effect. Physica Status Solidi C: Current Topics in Solid State Physics, 2004, 1, 2991-2994.	0.8	9
79	Laser picosecond acoustics in a two-layer structure with oblique probe light incidence. Ultrasonics, 2004, 42, 653-656.	2.1	9
80	A method for the frequency control in time-resolved two-dimensional gigahertz surface acoustic wave imaging. AIP Advances, 2014, 4, 017124.	0.6	9
81	An inverse-photo-emission study on the photo-dissolution of Ag and Cu metals in amorphous GeSe ₂ . Journal of Physics Condensed Matter, 1994, 6, L207-L214.	0.7	8
82	Photo-induced crystallization in amorphous GeSe ₂ studied by Raman scattering. Journal of Non-Crystalline Solids, 1998, 227-230, 728-731.	1.5	8
83	Real-time imaging and dispersion of surface phonons in isotropic and anisotropic materials. Physica B: Condensed Matter, 2002, 316-317, 29-34.	1.3	8
84	Ultrafast acoustic phonon pulse generation in chromium. Physica B: Condensed Matter, 2002, 316-317, 304-307.	1.3	8
85	Thermoelastic Model for Impulsive Stimulated Scattering Monitoring the Evolution from Capillary to Rayleigh Type Wave Propagation on the Surface of Viscoelastic Materials Throughout the Glass Transition. International Journal of Thermophysics, 2012, 33, 2145-2158.	1.0	8
86	Imaging acoustic waves in microscopic wedges. New Journal of Physics, 2014, 16, 103029.	1.2	8
87	Theory for optical detection of picosecond shear acoustic gratings. Journal of the Optical Society of America B: Optical Physics, 2016, 33, 2634.	0.9	8
88	Optical generation and detection of gigahertz shear acoustic waves in solids assisted by a metallic diffraction grating. Physical Review B, 2020, 101, .	1.1	8
89	Medium-range structure and relaxation in chalcogenide glasses investigated by Raman scattering. , 1993, , 47-58.		8
90	Electronic and thermal processes during the photo-induced crystallization of amorphous GeSe ₂ . Journal of Non-Crystalline Solids, 1995, 192-193, 524-528.	1.5	7

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91	Rigidity percolation and structure of GeSe system. Physica B: Condensed Matter, 1999, 263-264, 313-316.	1.3	7
92	Seeking shear waves in liquids with picosecond ultrasonics. Journal of Physics: Conference Series, 2007, 92, 012026.	0.3	7
93	Acoustic whispering-gallery modes generated and dynamically imaged with ultrashort optical pulses. Physical Review B, 2010, 81, .	1.1	7
94	Interferometric imaging of surface acoustic waves on a glass sphere. Journal of Applied Physics, 2010, 108, 123508.	1.1	7
95	Elucidating gigahertz acoustic modulation of extraordinary optical transmission through a two-dimensional array of nano-holes. Applied Physics Letters, 2017, 110, 091910.	1.5	7
96	Wave-canceling acoustic metarod architected with single material building blocks. Applied Physics Letters, 2020, 116, .	1.5	7
97	Giant extraordinary transmission of acoustic waves through a nanowire. Science Advances, 2020, 6, eaay8507.	4.7	7
98	Direct deposition of silicon and silicon-oxide films using low-energy Si focused ion beams. Nuclear Instruments & Methods in Physics Research B, 1997, 127-128, 893-896.	0.6	6
99	Raman scattering investigation of the structure of amorphous silicon in a-Si/SiO ₂ superlattice films. European Physical Journal Special Topics, 2000, 10, Pr7-259-Pr7-262.	0.2	6
100	Extraordinary transmission of gigahertz surface acoustic waves. Scientific Reports, 2016, 6, 33380.	1.6	6
101	Relaxation process of photo-excited states in GeSe ₂ glass investigated by time-resolved photoluminescence. Journal of Non-Crystalline Solids, 1998, 227-230, 829-832.	1.5	5
102	Temperature Dependence of Photoluminescence in Mn-Doped ZnS Retrieved after the Pressure-Induced Structural Phase Transition. Physica Status Solidi A, 1999, 175, 715-724.	1.7	5
103	Optical generation of surface acoustic waves guided at the linear boundary between two thin films. Journal of Applied Physics, 2010, 107, .	1.1	5
104	Effect of excitation point on surface phonon fields in phononic crystals in real- and k-space. Journal of Applied Physics, 2015, 117, .	1.1	5
105	Active chiral control of GHz acoustic whispering-gallery modes. Applied Physics Letters, 2017, 111, .	1.5	5
106	A study of network dimensionality in chalcogenide glass by low frequency Raman scattering. Physica B: Condensed Matter, 1999, 263-264, 330-332.	1.3	4
107	Effect of thermal annealing on dynamics of photoluminescence in a-GeSe ₂ films. Journal of Non-Crystalline Solids, 2000, 266-269, 904-907.	1.5	4
108	Structural Changes at Glass-Transition in Ge _x Se _{1-x} Studied by Raman Scattering. Progress of Theoretical Physics Supplement, 1997, 126, 191-194.	0.2	4

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109	Acoustic phonon pulse generation and detection in GaAs/Al _{0.3} Ga _{0.7} As quantumwells. Physica Status Solidi C: Current Topics in Solid State Physics, 2004, 1, 2749-2752.	0.8	3
110	Microscale multiple scattering of coherent surface acoustic wave packets probed with gigahertz time-reversal acoustics. Physical Review E, 2006, 74, 026604.	0.8	3
111	Vibrations of microspheres probed with ultrashort optical pulses: erratum. Optics Letters, 2010, 35, 940.	1.7	3
112	Photoluminescence and Raman scattering spectra from porous silicon. Superlattices and Microstructures, 1992, 12, 77-80.	1.4	2
113	Laser picosecond acoustics in multilayer structures. Ultrasonics, 2002, 40, 753-756.	2.1	2
114	Imaging of surface phonons on a sphere. Physica Status Solidi C: Current Topics in Solid State Physics, 2004, 1, 2979-2982.	0.8	2
115	Nanoscale mechanical contacts mapped by ultrashort time-scale electron transport. Scientific Reports, 2015, 4, 4790.	1.6	2
116	Generation and Observation of GHz-THz Acoustic Waves in Thin Films and Microstructures Using Optical Methods. Springer Series in Optical Sciences, 2014, , 129-151.	0.5	2
117	Nanosecond and picosecond time reversal acoustics. Physica Status Solidi C: Current Topics in Solid State Physics, 2004, 1, 2737-2740.	0.8	1
118	Terahertz Ultrasonic Generation and Detection in GaAs/AlGaAs Quantum Wells. Japanese Journal of Applied Physics, 2005, 44, 4477-4479.	0.8	1
119	6E-5 High Frequency Surface Waves Scattered in Microstructured Phononic Crystals. , 2006, , .		1
120	Imaging GHz-THz Acoustic Wave Propagation in Thin Films and Microstructures. Journal of the Vacuum Society of Japan, 2010, 53, 336-343.	0.3	1
121	Coherent phonon detection gated by transient spin-polarized electrons. Physical Review B, 2021, 103, .	1.1	1
122	Relaxation process of band-edge exciton in layered crystalline GeSe ₂ . Journal of Luminescence, 2000, 87-89, 617-619.	1.5	0
123	Temperature dependence of photoluminescence intensity and decay in GeSe ₂ glass. Journal of Non-Crystalline Solids, 2000, 266-269, 908-912.	1.5	0
124	Direct measurement of ultrafast surface displacement in laser picosecond acoustics. European Physical Journal Special Topics, 2005, 125, 361-363.	0.2	0
125	Correlation Between Elastic Constants and Magnetic Anisotropy in Co/Pt Superlattice Thin Films. Materials Research Society Symposia Proceedings, 2005, 875, 1.	0.1	0
126	Picosecond acoustics in semiconductor quantum wells (Invited Paper). , 2005, , .		0

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127	Publisher's Note: Imaging Ripples on Phononic Crystals Reveals Acoustic Band Structure and Bloch Harmonics [Phys. Rev. Lett.97, 055502 (2006)]. Physical Review Letters, 2006, 97, .	2.9	0
128	Real-time simulations and experiments on ultrahigh frequency surface waves in micro-structured phononic crystals. , 2009, , .		0
129	Visualization of negative refraction of surface acoustic waves by numerical simulations and experiments. , 2011, , .		0
130	Complexity of band structures: Finite element calculation of complex band structures for one and two dimensional phononic crystals. , 2013, , .		0
131	Structural Changes at Glass-Transition in $GexSe_{1-x}$ Studied by Raman Scattering. Progress of Theoretical Physics Supplement, 2013, 126, 191-194.	0.2	0
132	Optical Characterization of Phononic Crystals in the Time Domain. , 2016, , 191-213.		0
133	Confinement of acoustic fields in a honeycomb phononic crystal slab. , 2019, , .		0
134	Stiffness transition and connectivity in amorphous chalcogenide semiconductors. Springer Proceedings in Physics, 2001, , 228-229.	0.1	0
135	Reversible photoinduced structural changes in $GeSe_2$ glass at low-temperature. Springer Proceedings in Physics, 2001, , 113-114.	0.1	0
136	Ultrafast imaging of transient displacements using Sagnac interferometry. , 2003, , .		0
137	REAL TIME IMAGING OF SURFACE ACOUSTIC WAVES ON TOPOLOGICAL STRUCTURES. , 2006, , .		0
138	REAL TIME IMAGING TECHNIQUES FOR SURFACE WAVES ON TOPOLOGICAL STRUCTURES. , 2006, , .		0
139	SPATIOTEMPORAL MAPPING OF SYMMETRICAL SURFACE ACOUSTIC FIELDS ON CRYSTALS AND PERIODIC MICROSTRUCTURES. , 2007, , .		0
140	OS02-2-3 Optical tomographic imaging of nanometer ultrasonic pulses propagation. The Abstracts of ATEM International Conference on Advanced Technology in Experimental Mechanics Asian Conference on Experimental Mechanics, 2011, 2011.10, _OS02-2-3.	0.0	0
141	10.1063/1.4994886.1. , 2017, , .		0
142	10.1063/5.0011319.1. , 2020, , .		0
143	Specular Acoustic Vibrational Wave Transmissions with the Presence of Phononic Bandgaps. Journal of the Physical Society of Japan, 2022, 91, .	0.7	0