Teimuraz Mchedlidze

List of Publications by Year
in descending order

110	875	623734	677142
papers	citations	14 h-index	22 g-index

112	112	112	681
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Residual stress in Si nanocrystals embedded in a SiO2 matrix. Applied Physics Letters, 2006, 89, 053111.	3.3	64
2	Regular Dislocation Networks in Silicon as a Tool for Nanostructure Devices used in Optics, Biology, and Electronics. Small, 2007, 3, 964-973.	10.0	50
3	The Direct Observation of Grownâ€in Laser Scattering Tomography Defects in Czochralski Silicon. Journal of the Electrochemical Society, 1996, 143, L243-L246.	2.9	47
4	Electrical Activity of Defects Induced by Oxygen Precipitation in Czochralski-Grown Silicon Wafers. Japanese Journal of Applied Physics, 1999, 38, 3426-3432.	1.5	25
5	Direct detection of carrier traps in Si solar cells after light-induced degradation. Physica Status Solidi - Rapid Research Letters, 2015, 9, 108-110.	2.4	24
6	Influence of Dislocation Loops on the Near-Infrared Light Emission From Silicon Diodes. IEEE Transactions on Electron Devices, 2007, 54, 1860-1866.	3.0	22
7	Light-induced solid-to-solid phase transformation in Si nanolayers ofSiâ^'SiO2multiple quantum wells. Physical Review B, 2008, 77, .	3.2	21
8	Effect of laser annealing on crystallinity of the Si layers in Si/SiO2 multiple quantum wells. Applied Surface Science, 2007, 254, 1083-1086.	6.1	18
9	Electricâ€Dipole Spin Resonance of Dislocations in Plastically Deformed pâ€Type Silicon. Physica Status Solidi (B): Basic Research, 1990, 158, K49.	1.5	17
10	Subsurface Damage in Single Diamond Tool Machined SI Wafers. Materials Science Forum, 1995, 196-201, 1841-1846.	0.3	17
11	Rapid dislocationâ€related D1â€photoluminescence imaging of multicrystalline Si wafers at room temperature. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 888-892.	1.8	17
12	Capability of photoluminescence for characterization of multi-crystalline silicon. Journal of Applied Physics, 2012, 111, 073504.	2.5	17
13	Properties of an Ironâ€"Vacancy Pair in Silicon. Japanese Journal of Applied Physics, 2002, 41, 7288-7292.	1.5	15
14	High-Resolution Photoinduced Transient Spectroscopy of Electrically Active Iron-Related Defects in Electron Irradiated High-Resistivity Silicon. Japanese Journal of Applied Physics, 2003, 42, 5415-5419.	1.5	15
15	EPR Study of Hydrogen-Related Radiation-Induced Shallow Donors in Silicon. Physica Status Solidi (B): Basic Research, 1998, 210, 545-549.	1.5	14
16	Electron spin resonance signal from a tetra-interstitial defect in silicon. Journal of Physics Condensed Matter, 2003, 15, 3683-3688.	1.8	14
17	Influence of a substrate, structure and annealing procedures on crystalline and optical properties of Si/SiO2 multiple quantum wells. Thin Solid Films, 2008, 516, 6800-6803.	1.8	13
18	Factors affecting the relative sensitivity coefficients in spark and laser plasma source mass spectrometry. International Journal of Mass Spectrometry and Ion Processes, 1985, 63, 1-15.	1.8	12

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19	Electric-dipole spin-resonance study on extended defects in Czochralski-grown silicon developed by thermal treatment. Physical Review B, 1994, 50, 1511-1518.	3.2	12
20	Electrically detected magnetic resonance signal from iron contaminated Czochralski silicon crystal. Journal of Applied Physics, 1998, 83, 4042-4048.	2.5	12
21	Regular Dislocation Networks in Silicon. Part I: Structure. Solid State Phenomena, 2008, 131-133, 571-578.	0.3	12
22	Light induced solid-phase crystallization of Si nanolayers in Si/SiO2 multiple quantum wells. Journal of Applied Physics, 2010, 107, .	2.5	12
23	Characterization of Deep Levels Introduced by RTA and by Subsequent Anneals in n-Type Silicon. ECS Journal of Solid State Science and Technology, 2013, 2, P9-P12.	1.8	12
24	Oxygen Precipitation in CZ Silicon Crystals Contaminated with Iron. Materials Science Forum, 1995, 196-201, 1859-1864.	0.3	11
25	Optically detected magnetic resonance studies of point defects in Ga(Al)NAs. Physical Review B, 2006, 73, .	3.2	11
26	Influence of electric field on spectral positions of dislocation-related luminescence peaks in silicon: Stark effect. Applied Physics Letters, 2007, 91, 201113.	3.3	11
27	Nâ€‰â€‰+â€‰â€‰Pâ€‰ Junction Leakage Current Caused by Oxygen Precipitation Defects and Its Temperature Dependence. Journal of the Electrochemical Society, 1999, 146, 2322-2327.	2.9	10
28	Properties and formation mechanism of tetrainterstitial agglomerates in hydrogen-doped silicon. Physical Review B, 2004, 70, .	3.2	10
29	Determination of the Origin of Dislocation Related Luminescence from Silicon Using Regular Dislocation Networks. Solid State Phenomena, 2009, 156-158, 567-572.	0.3	10
30	Electroluminescence from p-i-n structure fabricated using crystalline silicon on glass technology. Journal of Applied Physics, 2009, 105, 093107.	2.5	10
31	Silicon incorporation in a shallow donor center in hydrogenated Czochralski-grown Si crystals: An EPR study. Physical Review B, 1997, 56, R12695-R12697.	3.2	9
32	ESR Spectra from Platinum-Hydrogen Pair in Silicon. Japanese Journal of Applied Physics, 2002, 41, L609-L611.	1.5	9
33	Electronic States of Oxygen-Free Dislocation Networks Produced by Direct Bonding of Silicon Wafers. Solid State Phenomena, 0, 156-158, 283-288.	0.3	9
34	Characterization of crystalline silicon on glass using photoluminescence. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 1334-1338.	0.8	9
35	Investigation of defect states in heavily dislocated thin silicon films. Journal of Applied Physics, 2012, 111, 053706.	2.5	9
36	Complexes of platinum and hydrogen in silicon observed by optical absorption and electron spin resonance. Physical Review B, 2002, 66, .	3.2	8

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37	Platinumâ€“hydrogen complexes in silicon observed by measurements of optical absorption and electron spin resonance. Applied Physics Letters, 2002, 81, 40-42.	3.3	8
38	An ironâ€“phosphorus pair in silicon. Journal of Physics Condensed Matter, 2004, 16, L79-L84.	1.8	8
39	Band alignment in GaInNPâ•GaAs heterostructures grown by gas-source molecular-beam epitaxy. Applied Physics Letters, 2005, 86, 261904.	3.3	8
40	Involvement of iron-phosphorus complexes in iron gettering for n-type silicon. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, 786-791.	1.8	7
41	Effect of nitrogen ion bombardment on defect formation and luminescence efficiency of GaNP epilayers grown by molecular-beam epitaxy. Applied Physics Letters, 2006, 88, 101904.	3.3	7
42	1.5 μm Emission from a Silicon MOS-LED Based on a Dislocation Network. , 2006, , .		7
43	Regular Dislocation Networks in Si. Part II: Luminescence. Solid State Phenomena, 2007, 131-133, 503-510.	0.3	7
44	Signatures of distinct structures related to rod-like defects in silicon detected by various measurement methods. Physica Status Solidi (A) Applications and Materials Science, 2007, 204, 2229-2237.	1.8	7
45	Correlation of electrical and luminescence properties of a dislocation network with its microscopic structure. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 1817-1822.	0.8	7
46	Structures responsible for radiative and non-radiative recombination activity of dislocations in silicon. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 991-995.	0.8	7
47	Novel imaging techniques for dislocation-related D1-photo-luminescence of multicrystalline Si wafers - two different approaches. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 1297-1301.	0.8	7
48	Local detection of deep carrier traps in the pn-junction of silicon solar cells. Applied Physics Letters, 2013, 103, 013901.	3.3	7
49	Photoconductive detection of hydrogen in ZnO and rutile TiO2. Journal of Applied Physics, 2016, 120, 055703.	2.5	7
50	Location and Properties of Carrier Traps in mcâ€Si Solar Cells Subjected to Degradation at Elevated Temperatures. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1900142.	1.8	7
51	Influence of Hydrogen on the Formation of Interstitial Agglomerates in Silicon. Solid State Phenomena, 2004, 95-96, 129-134.	0.3	6
52	Magnetic resonance signatures of grown-in defects in GaInNP alloys grown on a GaAs substrate. Applied Physics Letters, 2005, 86, 222110.	3.3	6
53	Structural and optical properties of Si/SiO2 multi-quantum wells. Physica E: Low-Dimensional Systems and Nanostructures, 2007, 38, 152-155.	2.7	6
54	Structural characterization of crystallized Si thin film material by HRTEM and Raman spectroscopy. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 588-591.	1.8	6

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55	Monitoring of Si-solar cell degradation with electroluminescence. Solar Energy Materials and Solar Cells, 2016, 155, 38-42.	6.2	6
56	ESR signature of tetra-interstitial defect in silicon. Materials Science in Semiconductor Processing, 2003, 6, 263-266.	4.0	5
57	Regular Dislocation Networks in Silicon as a Tool for Novel Device Application. ECS Transactions, 2006, 3, 429-450.	0.5	5
58	Silicon nanostructures for IR light emitters. Materials Science and Engineering C, 2007, 27, 1252-1259.	7.3	5
59	Laser annealing of the Si layers in Si/SiO2 multiple quantum wells. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2009, 159-160, 57-60.	3.5	5
60	Silicon based IR light emitters. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 707-715.	0.8	5
61	Scanning probe studies of amorphous silicon subjected to laser annealing. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 1351-1355.	0.8	5
62	Iron-related carrier traps near the n⁺p-junctions of crystalline silicon solar cells: impacts of feedstock and of the fabrication processes. Physica Status Solidi (B): Basic Research, 2014, 251, 1608-1613.	1.5	5
63	Electrical Transport in Si_xGe_{1-x} Bulk Alloys. Materials Science Forum, 1995, 196-201, 353-358.	0.3	4
64	Hall Effect in AnisotropicSixGe1-xPolycrystals. Japanese Journal of Applied Physics, 1996, 35, 652-655.	1.5	4
65	Properties of Platinum-Hydrogen Complexes in Silicon: an ESR Study. Japanese Journal of Applied Physics, 2002, 41, L967-L969.	1.5	4
66	Electric-dipole spin-resonance signals related to extended interstitial agglomerates in silicon. Journal of Applied Physics, 2005, 98, 043507.	2.5	4
67	Dislocations in Silicon as a Tool to Be Used in Optics, Electronics and Biology. Solid State Phenomena, 2007, 131-133, 289-292.	0.3	4
68	Engineering of Dislocation-Loops for Light Emission from Silicon Diodes. Solid State Phenomena, 2008, 131-133, 303-308.	0.3	4
69	Characterization of Thin Film Photovoltaic Material Using Photoluminescence and Raman Spectroscopy. Solid State Phenomena, 2009, 156-158, 419-424.	0.3	4
70	Impact of a p-type Solar Cell Process on the Electrical Quality of Czochralski Silicon. Energy Procedia, 2013, 38, 589-596.	1.8	4
71	Radial distribution of iron in silicon crystals grown by Czochralski method from contaminated feedstock. Physica Status Solidi - Rapid Research Letters, 2014, 8, 228-230.	2.4	4
72	Many optical absorption peaks observed in electron-irradiatedn-type Si. Journal of Applied Physics, 2002, 92, 6561-6566.	2.5	3

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73	Author's comment on â€œNew electron spin resonance spectra from ironâ€“vacancy pair in silicon: I. Defect with two values for the spin. II. Hyperfine interactions and isotopic effectâ€• Physica B: Condensed Matter, 2002, 324, 188-190.	2.7	3
74	EBIC/PL investigations of dislocation network produced by silicon wafer direct bonding. Superlattices and Microstructures, 2009, 45, 314-320.	3.1	3
75	Silicon based light emitter utilizing tunnel injection of excess carriers via MIS structure. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 1302-1306.	0.8	3
76	Evolution of iron-containing defects during processing of Si solar cells. Journal of Applied Physics, 2014, 116, .	2.5	3
77	On the capability of deep level transient spectroscopy for characterizing multi-crystalline silicon. Journal of Applied Physics, 2014, 115, .	2.5	3
78	Photoconductivity as a method to probe defects in ultra thin Si films. Applied Physics Letters, 2017, 110, 132102.	3.3	3
79	Dependence of electrically detected magnetic resonance signal shape from iron-contaminated silicon wafers on the thermal treatment of the samples. Physica B: Condensed Matter, 1999, 273-274, 404-407.	2.7	2
80	New electron spin resonance spectra from ironâ€“vacancy pair in silicon: II. Hyperfine interactions and isotopic effect. Physica B: Condensed Matter, 2001, 308-310, 400-403.	2.7	2
81	New electron spin resonance spectra from iron-vacancy pair in silicon: I. Defect with two values for the spin. Physica B: Condensed Matter, 2001, 308-310, 421-423.	2.7	2
82	Features of isotopic shift in the fine structure term of ESR spectra from ironâ€“vacancy pair in silicon. Physica B: Condensed Matter, 2003, 340-342, 556-560.	2.7	2
83	Properties of tetra-interstitial agglomerate in silicon: an ESR study. Physica B: Condensed Matter, 2003, 340-342, 682-686.	2.7	2
84	Rod-like defects in CZ-Si investigated by spin resonance and photoluminescence spectroscopies. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 1807-1811.	0.8	2
85	Dislocation-Induced Light Emission. ECS Transactions, 2006, 3, 311-319.	0.5	2
86	Characterization of Deep Levels Introduced by RTA and by Subsequent Anneals in n-Type Silicon. ECS Transactions, 2013, 50, 269-277.	0.5	2
87	Light induced crystallization of an amorphous silicon film embedded between silicon oxide layers. Physica Status Solidi (B): Basic Research, 2014, 251, 439-445.	1.5	2
88	Deep carrier traps in as grown isotopically pure 28 Si FZ crystal. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1700238.	1.8	2
89	Characterization of Ultrathin Fully Depleted Siliconâ€onâ€Insulator Devices Using Subthreshold Slope Method. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 2000625.	1.8	2
90	Magnetic resonance studies of shallow donor centers in hydrogenated Czâ€“Si crystals. Physica B: Condensed Matter, 2001, 302-303, 212-219.	2.7	1

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91	Modeling the subsurface region of Cz-Si wafers with properly fabricated bulk FZ-Si samples. Physica B: Condensed Matter, 2001, 308-310, 474-476.	2.7	1
92	Incorporation of oxygen or di-hydrogen in silicon monovacancy: spin-resonance study of defect excited state. Physica B: Condensed Matter, 2001, 308-310, 321-324.	2.7	1
93	Formation and Properties of Iron-Phosphorus and Iron-Phosphorus-Hydrogen Complexes in Silicon. Solid State Phenomena, 2005, 108-109, 379-384.	0.3	1
94	Stark effect at dislocations in silicon for modulation of a 1.5 Î¼m light emitter. Proceedings of SPIE, 2008, , .	0.8	1
95	Silicon based light emitters utilizing radiation from dislocations; electric field induced shift of the dislocation-related luminescence. Physica E: Low-Dimensional Systems and Nanostructures, 2009, 41, 907-911.	2.7	1
96	Electrical characterization of silicon wafer bonding interfaces by means of voltage dependent light beam and electron beam induced current and capacitance of Schottky diodes. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 1371-1376.	0.8	1
97	Capacitance Transient Spectroscopy Measurements on High-k Metal Gate Field Effect Transistors Fabricated Using 28nm Technology Node. Solid State Phenomena, 0, 242, 459-465.	0.3	1
98	In Situ Observation of the Degradation in Multiâ€€crystalline Si Solar Cells by Electroluminescence. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1800918.	1.8	1
99	Gate-Oxide Integrity Evaluation Using Non-Ideal Metal-Oxide-Silicon Capacitor Structures. Solid State Phenomena, 2001, 82-84, 735-740.	0.3	0
100	Correlation between ESR and infrared absorption signals from platinumâ€“hydrogen complexes in silicon. Physica B: Condensed Matter, 2003, 340-342, 650-653.	2.7	0
101	Signatures of grown-in defects in GaInNP alloys grown on a GaAs substrate from magnetic resonance studies. Physica B: Condensed Matter, 2006, 376-377, 571-574.	2.7	0
102	Optimization of the Luminescence Properties of Silicon Diodes Produced by Implantation and Annealing. Solid State Phenomena, 0, 156-158, 579-584.	0.3	0
103	Properties of Interfacial Dislocations in Hydrophobic Bonded Si-Wafers. ECS Transactions, 2010, 33, 441-449.	0.5	0
104	Anomalous temperature behaviour of band to band electroluminescence in silicon solar cells. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 911-914.	0.8	0
105	Characterization of Traps in Crystalline Silicon on Glass Film Using Deep-Level Transient Spectroscopy. Solid State Phenomena, 0, 178-179, 100-105.	0.3	0
106	Fast Light-Induced Solid Phase Crystallization of Nanometer Thick Silicon Layers on Quartz. Solid State Phenomena, 2011, 178-179, 110-115.	0.3	0
107	Interface traps in 28â€‰nm node field effect transistors detected by capacitance transient spectroscopy. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1700182.	1.8	0
108	Identification Of Point Defects In Ga(Al)NAs Alloys. AIP Conference Proceedings, 2007, , .	0.4	0

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109	Photoluminescence and EBIC for Process Control and Failure Analysis in Si-Based Photovoltaics. , 2010, , .		0
110	Characterization of ultrathin FDSOI stacks using low field mobility. Physica Status Solidi (A) Applications and Materials Science, 0, , .	1.8	0