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	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
2	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
3	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
4	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
5	Photoconductivity as a method to probe defects in ultra thin Si films. Applied Physics Letters, 2017, 110, 132102.	3.3	3
6	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
7	Photoconductive detection of hydrogen in ZnO and rutile TiO2. Journal of Applied Physics, 2016, 120, 055703.	2.5	7
8	Monitoring of Si-solar cell degradation with electroluminescence. Solar Energy Materials and Solar Cells, 2016, 155, 38-42.	6.2	6
9	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
10	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
11	Evolution of iron-containing defects during processing of Si solar cells. Journal of Applied Physics, 2014, 116, .	2.5	3
12	On the capability of deep level transient spectroscopy for characterizing multi-crystalline silicon. Journal of Applied Physics, 2014, 115, .	2.5	3
13	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
14	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
15	Local detection of deep carrier traps in the pn-junction of silicon solar cells. Applied Physics Letters, 2013, 103, 013901.	3.3	7
16	Impact of a p-type Solar Cell Process on the Electrical Quality of Czochralski Silicon. Energy Procedia, 2013, 38, 589-596.	1.8	4
17	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
18	Characterization of Deep Levels Introduced by RTA and by Subsequent Anneals in n-Type Silicon. ECS Transactions, 2013, 50, 269-277.	0.5	2

#	Article	IF	Citations
19	Investigation of defect states in heavily dislocated thin silicon films. Journal of Applied Physics, 2012, 111, 053706.	2.5	9
20	Capability of photoluminescence for characterization of multi-crystalline silicon. Journal of Applied Physics, 2012, 111, 073504.	2.5	17
21	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
22	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
23	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
24	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
25	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
26	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
27	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
28	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
29	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
30	Fast Light-Induced Solid Phase Crystallization of Nanometer Thick Silicon Layers on Quartz. Solid State Phenomena, 2011, 178-179, 110-115.	0.3	0
31	Light induced solid-phase crystallization of Si nanolayers in Si/SiO2 multiple quantum wells. Journal of Applied Physics, 2010, 107, .	2.5	12
32	Properties of Interfacial Dislocations in Hydrophobic Bonded Si-Wafers. ECS Transactions, 2010, 33, 441-449.	0.5	0
33	Photoluminescence and EBIC for Process Control and Failure Analysis in Si-Based Photovoltaics. , 2010, , .		0
34	Characterization of Thin Film Photovoltaic Material Using Photoluminescence and Raman Spectroscopy. Solid State Phenomena, 2009, 156-158, 419-424.	0.3	4
35	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
36	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

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37	Silicon based IR light emitters. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 707-715.	0.8	5
38	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
39	EBIC/PL investigations of dislocation network produced by silicon wafer direct bonding. Superlattices and Microstructures, 2009, 45, 314-320.	3.1	3
40	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
41	Electroluminescence from p-i-n structure fabricated using crystalline silicon on glass technology. Journal of Applied Physics, 2009, 105, 093107.	2.5	10
42	Regular Dislocation Networks in Silicon. Part I: Structure. Solid State Phenomena, 2008, 131-133, 571-578.	0.3	12
43	Engineering of Dislocation-Loops for Light Emission from Silicon Diodes. Solid State Phenomena, 2008, 131-133, 303-308.	0.3	4
44	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
45	Stark effect at dislocations in silicon for modulation of a 1.5 Î¼m light emitter. Proceedings of SPIE, 2008, , .	0.8	1
46	Light-induced solid-to-solid phase transformation in Si nanolayers ofSiâ^'SiO2multiple quantum wells. Physical Review B, 2008, 77, .	3.2	21
47	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
48	Regular Dislocation Networks in Si. Part II: Luminescence. Solid State Phenomena, 2007, 131-133, 503-510.	0.3	7
49	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
50	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
51	Silicon nanostructures for IR light emitters. Materials Science and Engineering C, 2007, 27, 1252-1259.	7.3	5
52	Structural and optical properties of Si/SiO2 multi-quantum wells. Physica E: Low-Dimensional Systems and Nanostructures, 2007, 38, 152-155.	2.7	6
53	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
54	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

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55	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
56	Identification Of Point Defects In Ga(Al)NAs Alloys. AIP Conference Proceedings, 2007, , .	0.4	0
57	Residual stress in Si nanocrystals embedded in a SiO2 matrix. Applied Physics Letters, 2006, 89, 053111.	3.3	64
58	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
59	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
60	Dislocation-Induced Light Emission. ECS Transactions, 2006, 3, 311-319.	0.5	2
61	Optically detected magnetic resonance studies of point defects in Ga(Al)NAs. Physical Review B, 2006, 73, .	3.2	11
62	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
63	1.5 μm Emission from a Silicon MOS-LED Based on a Dislocation Network. , 2006, , .		7
64	Regular Dislocation Networks in Silicon as a Tool for Novel Device Application. ECS Transactions, 2006, 3, 429-450.	0.5	5
65	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
66	Formation and Properties of Iron-Phosphorus and Iron-Phosphorus-Hydrogen Complexes in Silicon. Solid State Phenomena, 2005, 108-109, 379-384.	0.3	1
67	Magnetic resonance signatures of grown-in defects in GaInNP alloys grown on a GaAs substrate. Applied Physics Letters, 2005, 86, 222110.	3.3	6
68	Band alignment in GaInNPâˆ•GaAs heterostructures grown by gas-source molecular-beam epitaxy. Applied Physics Letters, 2005, 86, 261904.	3.3	8
69	Electric-dipole spin-resonance signals related to extended interstitial agglomerates in silicon. Journal of Applied Physics, 2005, 98, 043507.	2.5	4
70	Influence of Hydrogen on the Formation of Interstitial Agglomerates in Silicon. Solid State Phenomena, 2004, 95-96, 129-134.	0.3	6
71	An ironâ€“phosphorus pair in silicon. Journal of Physics Condensed Matter, 2004, 16, L79-L84.	1.8	8
72	Properties and formation mechanism of tetrainterstitial agglomerates in hydrogen-doped silicon. Physical Review B, 2004, 70, .	3.2	10

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73	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
74	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
75	Properties of tetra-interstitial agglomerate in silicon: an ESR study. Physica B: Condensed Matter, 2003, 340-342, 682-686.	2.7	2
76	ESR signature of tetra-interstitial defect in silicon. Materials Science in Semiconductor Processing, 2003, 6, 263-266.	4.0	5
77	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
78	Electron spin resonance signal from a tetra-interstitial defect in silicon. Journal of Physics Condensed Matter, 2003, 15, 3683-3688.	1.8	14
79	Complexes of platinum and hydrogen in silicon observed by optical absorption and electron spin resonance. Physical Review B, 2002, 66, .	3.2	8
80	Many optical absorption peaks observed in electron-irradiatedn-type Si. Journal of Applied Physics, 2002, 92, 6561-6566.	2.5	3
81	Properties of an Ironâ€“Vacancy Pair in Silicon. Japanese Journal of Applied Physics, 2002, 41, 7288-7292.	1.5	15
82	Properties of Platinum-Hydrogen Complexes in Silicon: an ESR Study. Japanese Journal of Applied Physics, 2002, 41, L967-L969.	1.5	4
83	ESR Spectra from Platinum-Hydrogen Pair in Silicon. Japanese Journal of Applied Physics, 2002, 41, L609-L611.	1.5	9
84	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
85	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
86	Magnetic resonance studies of shallow donor centers in hydrogenated Czâ€“Si crystals. Physica B: Condensed Matter, 2001, 302-303, 212-219.	2.7	1
87	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
88	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
89	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
90	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

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91	Gate-Oxide Integrity Evaluation Using Non-Ideal Metal-Oxide-Silicon Capacitor Structures. Solid State Phenomena, 2001, 82-84, 735-740.	0.3	0
92	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
93	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
94	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
95	EPR Study of Hydrogen-Related Radiation-Induced Shallow Donors in Silicon. Physica Status Solidi (B): Basic Research, 1998, 210, 545-549.	1.5	14
96	Electrically detected magnetic resonance signal from iron contaminated Czochralski silicon crystal. Journal of Applied Physics, 1998, 83, 4042-4048.	2.5	12
97	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
98	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
99	Hall Effect in AnisotropicSixGe1-xPolycrystals. Japanese Journal of Applied Physics, 1996, 35, 652-655.	1.5	4
100	Subsurface Damage in Single Diamond Tool Machined SI Wafers. Materials Science Forum, 1995, 196-201, 1841-1846.	0.3	17
101	Oxygen Precipitation in CZ Silicon Crystals Contaminated with Iron. Materials Science Forum, 1995, 196-201, 1859-1864.	0.3	11
102	Electrical Transport in Si_xGe_{1-x} Bulk Alloys. Materials Science Forum, 1995, 196-201, 353-358.	0.3	4
103	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
104	Electricâ€Dipole Spin Resonance of Dislocations in Plastically Deformed pâ€Type Silicon. Physica Status Solidi (B): Basic Research, 1990, 158, K49.	1.5	17
105	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
106	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
107	Optimization of the Luminescence Properties of Silicon Diodes Produced by Implantation and Annealing. Solid State Phenomena, 0, 156-158, 579-584.	0.3	0
108	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

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109	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
110	Characterization of ultrathin FDSOI stacks using low field mobility. Physica Status Solidi (A) Applications and Materials Science, 0, , .	1.8	0