

Maarja Grossberg

List of Publications by Year in descending order

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103
papers

2,468
citations

236925

25
h-index

223800

46
g-index

105
all docs

105
docs citations

105
times ranked

2191
citing authors

#	ARTICLE	IF	CITATIONS
1	$\text{Cu}_{2-x}\text{Zn}_x\text{Cd}_x\text{Sn}_4$ solid solutions as absorber materials for solar cells. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2008, 205, 167-170.	1.8	340
2	Photoluminescence and Raman study of $\text{Cu}_2\text{ZnSn}(\text{SexS}_{1-x})_4$ monograins for photovoltaic applications. <i>Thin Solid Films</i> , 2011, 519, 7403-7406.	1.8	262
3	Radiative recombination in $\text{Cu}_2\text{ZnSnSe}_4$ monograins studied by photoluminescence spectroscopy. <i>Thin Solid Films</i> , 2009, 517, 2489-2492.	1.8	158
4	The role of structural properties on deep defect states in $\text{Cu}_2\text{ZnSnS}_4$ studied by photoluminescence spectroscopy. <i>Applied Physics Letters</i> , 2012, 101, .	3.3	128
5	Optical properties of high quality $\text{Cu}_2\text{ZnSnSe}_4$ thin films. <i>Applied Physics Letters</i> , 2011, 99, .	3.3	89
6	$\text{Cu}_2\text{ZnSnSe}_4$ films by selenization of SnZnCu sequential films. <i>Journal of Physics and Chemistry of Solids</i> , 2009, 70, 567-570.	4.0	60
7	Photoluminescence study of defect clusters in $\text{Cu}_2\text{ZnSnS}_4$ polycrystals. <i>Current Applied Physics</i> , 2014, 14, 447-450.	2.4	60
8	SEM analysis and selenization of CuIn alloy films produced by co-sputtering of metals. <i>Solar Energy Materials and Solar Cells</i> , 2009, 93, 11-14.	6.2	53
9	Temperature-dependent photoreflectance of SnS crystals. <i>Journal of Physics and Chemistry of Solids</i> , 2013, 74, 1683-1685.	4.0	51
10	Compositionally tunable structure and optical properties of $\text{Cu}_{1.85}(\text{Cd}_x\text{Zn}_{1-x})_{1.1}\text{SnS}_{4.1}$ monograin powders. <i>Thin Solid Films</i> , 2015, 582, 180-183.	1.8	50
11	A novel deposition method to grow ZnO nanorods: Spray pyrolysis. <i>Superlattices and Microstructures</i> , 2007, 42, 444-450.	3.1	48
12	CuS-based thin films for architectural glazing applications produced by co-evaporation: Morphology, optical and electrical properties. <i>Surface and Coatings Technology</i> , 2009, 204, 593-600.	4.8	47
13	Deep defects in $\text{Cu}_2\text{ZnSnS}_4$ monograin solar cells. <i>Energy Procedia</i> , 2011, 10, 261-265.	1.8	44
14	The electrical and optical properties of kesterites. <i>JPhys Energy</i> , 2019, 1, 044002.	5.3	43
15	Defect studies in $\text{Cu}_2\text{ZnSnSe}_4$ and $\text{Cu}_2\text{ZnSn}(\text{Se}_{0.75}\text{S}_{0.25})_4$ by admittance and photoluminescence spectroscopy. <i>Materials Science in Semiconductor Processing</i> , 2013, 16, 992-996.	4.0	42
16	Synthesis of $\text{Cu}_2\text{ZnSnS}_4$ monograin powders with different compositions. <i>Energy Procedia</i> , 2011, 10, 203-207.	1.8	40
17	Photoluminescence study of disordering in the cation sublattice of $\text{Cu}_2\text{ZnSnS}_4$. <i>Current Applied Physics</i> , 2014, 14, 1424-1427.	2.4	40
18	Photoluminescence studies of heavily doped CuInTe_2 crystals. <i>Physica B: Condensed Matter</i> , 2003, 337, 369-374.	2.7	38

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19	Temperature dependent photoreflectance study of Cu ₂ SnS ₃ thin films produced by pulsed laser deposition. Applied Physics Letters, 2017, 110, .	3.3	35
20	Study of structural and optoelectronic properties of Cu ₂ Zn(Sn _{1-x} Gex)Se ₄ (x = 0 to 1) alloy compounds. Thin Solid Films, 2015, 582, 176-179.	1.8	34
21	Growth and electrical properties of ZnO nanorod arrays prepared by chemical spray pyrolysis. Physica B: Condensed Matter, 2009, 404, 4422-4425.	2.7	32
22	Microphotoluminescence study of Cu ₂ ZnSnS ₄ polycrystals. Journal of Photonics for Energy, 2013, 3, 030599.	1.3	32
23	The effect of Ag alloying of Cu ₂ (Zn,Cd)SnS ₄ on the monograin powder properties and solar cell performance. Journal of Materials Chemistry A, 2019, 7, 24281-24291.	10.3	31
24	p-n junction improvements of Cu ₂ ZnSnS ₄ /CdS monograin layer solar cells. Applied Surface Science, 2015, 357, 795-798.	6.1	26
25	Origin of photoluminescence from antimony selenide. Journal of Alloys and Compounds, 2020, 817, 152716.	5.5	26
26	Structural and compositional properties of CZTS thin films formed by rapid thermal annealing of electrodeposited layers. Journal of Crystal Growth, 2013, 380, 236-240.	1.5	25
27	Influence of order-disorder in Cu ₂ ZnSnS ₄ powders on the performance of monograin layer solar cells. Thin Solid Films, 2017, 633, 122-126.	1.8	22
28	Photoluminescence properties of polycrystalline AgGaTe ₂ . Solar Energy Materials and Solar Cells, 2006, 90, 1973-1982.	6.2	21
29	Study of Cu ₂ CdGeSe ₄ monograin powders synthesized by molten salt method for photovoltaic applications. Thin Solid Films, 2018, 666, 15-19.	1.8	21
30	Detailed Insight into the CZTS/CdS Interface Modification by Air Annealing in Monograin Layer Solar Cells. ACS Applied Energy Materials, 2021, 4, 12374-12382.	5.1	19
31	Preparation and quality assessment of CuS thin films encapsulated in glass. Thin Solid Films, 2012, 520, 4184-4189.	1.8	18
32	Modification of the optoelectronic properties of Cu ₂ CdSnS ₄ through low-temperature annealing. Journal of Alloys and Compounds, 2017, 723, 820-825.	5.5	18
33	Photoluminescence and Raman spectroscopy of polycrystalline AgInTe ₂ . Thin Solid Films, 2005, 480-481, 246-249.	1.8	17
34	Thermal stability of sputtered Mo/polyimide films and formation of MoSe ₂ and MoS ₂ layers for application in flexible Cu(In,Ga)(Se,S) ₂ based solar cells. Thin Solid Films, 2012, 520, 4163-4168.	1.8	17
35	Temperature dependent current transport properties in Cu ₂ ZnSnS ₄ solar cells. Thin Solid Films, 2015, 582, 162-165.	1.8	15
36	Investigation of potential and compositional fluctuations in CuGa ₃ Se ₅ crystals using photoluminescence spectroscopy. Thin Solid Films, 2007, 515, 6204-6207.	1.8	14

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37	Impact of Cu ₂ ZnSn(S _x Se _{4-x}) ₄ (x=0.3) compositional ratios on the monograin powder properties and solar cells. Thin Solid Films, 2013, 535, 35-38.	1.8	14
38	Optical spectroscopy studies of Cu ₂ ZnSnSe ₄ thin films. Thin Solid Films, 2015, 582, 154-157.	1.8	14
39	Pulsed laser deposition of chalcogenide sulfides from multi- and single-component targets: the non-stoichiometric material transfer. Applied Physics A: Materials Science and Processing, 2018, 124, 1.	2.3	14
40	Study of (Ag _x Cu _{1-x}) ₂ ZnSn(S,Se) ₄ monograins synthesized by molten salt method for solar cell applications. Solar Energy, 2020, 198, 586-595.	6.1	14
41	Influence of annealing conditions on the structural quality of CuInSe ₂ thin films. Thin Solid Films, 2008, 516, 7105-7109.	1.8	13
42	Research in solar cell technologies at Tallinn University of Technology. Thin Solid Films, 2008, 516, 7125-7134.	1.8	13
43	CZTS Monograin Powders and Thin Films. Advanced Materials Research, 2011, 222, 8-13.	0.3	13
44	Temperature dependent electroreflectance study of Cu ₂ ZnSnSe ₄ solar cells. Materials Science in Semiconductor Processing, 2015, 39, 251-254.	4.0	13
45	Tailoring of Bound Exciton Photoluminescence Emission in WS ₂ Monolayers. Physica Status Solidi - Rapid Research Letters, 2020, 14, 1900355.	2.4	13
46	Cu ₂ ZnSnSe ₄ Monograin Powders for Solar Cell Application. , 2006, , .		12
47	Influence of compositional deviations on the properties of Cu ₂ ZnSnSe ₄ monograin powders. Energy Procedia, 2011, 10, 323-327.	1.8	12
48	Photoluminescence study of deep donor- deep acceptor pairs in Cu ₂ ZnSnS ₄ . Materials Science in Semiconductor Processing, 2018, 80, 52-55.	4.0	12
49	Photoluminescence and Raman spectra of the ordered vacancy compound CuGa ₅ Se ₈ . Physica B: Condensed Matter, 2008, 403, 184-189.	2.7	11
50	Post-growth annealing effect on the performance of Cu ₂ ZnSnSe ₄ monograin layer solar cells. Thin Solid Films, 2013, 535, 18-21.	1.8	11
51	Reaction enthalpies of Cu ₂ ZnSnSe ₄ synthesis in KI. Journal of Thermal Analysis and Calorimetry, 2015, 119, 1555-1564.	3.6	11
52	Synthesis of Cu ₂ ZnSnS ₄ Solar Cell Absorber Material by Sol-gel Method. Energy Procedia, 2016, 102, 102-109.	1.8	11
53	Low temperature time resolved photoluminescence in ordered and disordered Cu ₂ ZnSnS ₄ single crystals. Physica B: Condensed Matter, 2017, 508, 47-50.	2.7	11
54	Effect of germanium incorporation on the properties of kesterite Cu ₂ ZnSn(S,Se) ₄ monograins. Thin Solid Films, 2019, 669, 315-320.	1.8	11

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55	The effect of sodium doping to CuInSe ₂ monograin powder properties. Thin Solid Films, 2007, 515, 5887-5890.	1.8	10
56	Isothermal and Two-Temperature Zone Selenization of Mo Layers. Advances in Materials Science and Engineering, 2012, 2012, 1-11.	1.8	10
57	Cu(In,Ga)Se ₂ monograin powders with different Ga content for solar cells. Solar Energy, 2018, 176, 648-655.	6.1	10
58	Growth and Characterization of Cu ₂ Zn _{1-x} FexSnS ₄ Thin Films for Photovoltaic Applications. Materials, 2020, 13, 1471.	2.9	10
59	Routes to develop a [S]/([S]+[Se]) gradient in wide band-gap Cu ₂ ZnGe(S,Se) ₄ thin-film solar cells. Journal of Alloys and Compounds, 2021, 868, 159253.	5.5	10
60	Reduced recombination through CZTS/CdS interface engineering in monograin layer solar cells. JPhys Energy, 2022, 4, 024007.	5.3	10
61	Chemical etching of Cu ₂ ZnSn(S,Se) ₄ monograin powder. , 2010, , .		9
62	A photoluminescence study of CuInSe ₂ single crystals ion implanted with 5 keV hydrogen. Journal Physics D: Applied Physics, 2016, 49, 105108.	2.8	9
63	Compositional dependence of Raman scattering and photoluminescence emission in Cu _{1-x} Ga _x Se films grown by MOCVD. Physica B: Condensed Matter, 2009, 404, 1984-1988.	2.7	8
64	Synthesis and characterization of tetrahedrite Cu ₁₀ Cd ₂ Sb ₄ S ₁₃ monograin material for photovoltaic application. Materials Science in Semiconductor Processing, 2020, 110, 104973.	4.0	8
65	Observation of band gap fluctuations and carrier localization in Cu ₂ CdGeSe ₄ . Journal Physics D: Applied Physics, 2019, 52, 285102.	2.8	7
66	Effect of absorber surface modification on the optoelectronic properties of Cu ₂ CdGeSe ₄ solar cells.. Thin Solid Films, 2020, 697, 137822.	1.8	7
67	Analysis of the edge emission of highly conductive CuGaTe ₂ . Thin Solid Films, 2007, 515, 6192-6195.	1.8	6
68	Optical and structural properties of orthorhombic and tetragonal polymorphs of Cu ₂ CdGeSe ₄ . Thin Solid Films, 2018, 666, 44-47.	1.8	6
69	Observation of photoluminescence edge emission in CuSbSe ₂ absorber material for photovoltaic applications. Applied Physics Letters, 2019, 115, 092101.	3.3	6
70	Study of the optical properties of Sb ₂ (Se _{1-x} S _x) ₃ (x = 0-1) solid solutions. Materials Science in Semiconductor Processing, 2022, 144, 106571.	4.0	6
71	Deep defect related photoluminescence in heavily doped CuGaTe ₂ crystals. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, 949-955.	1.8	5
72	High Temperature Properties of CdTe Crystals, Doped by Sb. IEEE Transactions on Nuclear Science, 2007, 54, 763-768.	2.0	5

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73	Cu ₂ ZnSnSe ₄ formation and reaction enthalpies in molten NaI starting from binary chalcogenides. Journal of Thermal Analysis and Calorimetry, 2014, 118, 1313-1321.	3.6	5
74	Nano-scale sulfurization of the Cu ₂ ZnSnSe ₄ crystal surface for photovoltaic applications. Journal of Materials Chemistry A, 2019, 7, 24884-24890.	10.3	5
75	The effect of S/Se ratio on the properties of Cu ₂ CdGe(S _x Se _{1-x}) ₄ microcrystalline powders for photovoltaic applications. Solar Energy, 2020, 209, 646-652.	6.1	5
76	Characterization of tetrahedrite Cu ₁₀ Cd ₂ Sb ₄ S ₁₃ monograin materials grown in molten CdI ₂ and LiI. Thin Solid Films, 2021, 739, 138980.	1.8	5
77	Deep and edge photoluminescence emission of CuInTe ₂ . Physica Status Solidi (B): Basic Research, 2003, 237, R3-R5.	1.5	4
78	SEM analysis and selenization of Cu-Zn-Sn sequential films produced by evaporation of metals. Optoelectronic and Microelectronic Materials and Devices (COMMAD), Conference on, 2008, , .	0.0	4
79	Spray pyrolysis deposition and characterization of highly c-axis oriented hexagonal ZnS nanorod crystals. Crystal Research and Technology, 2015, 50, 85-92.	1.3	4
80	Study of CZTS Nano-powder Synthesis by Hot Injection Method by Variation of Cu and Zn Concentrations. Energy Procedia, 2016, 102, 136-143.	1.8	4
81	Study of point defects in wide-bandgap Cu ₂ CdGeS ₄ microcrystals by temperature and laser power dependent photoluminescence spectroscopy. Journal Physics D: Applied Physics, 2020, 53, 275102.	2.8	4
82	Identification of Excitons and Biexcitons in Sb ₂ Se ₃ under High Photoluminescence Excitation Density. Advanced Optical Materials, 2021, 9, 2100107.	7.3	4
83	Broad-band photoluminescence of donor-acceptor pairs in tetrahedrite Cu ₁₀ Cd ₂ Sb ₄ S ₁₃ microcrystals. Journal Physics D: Applied Physics, 2021, 54, 105102.	2.8	4
84	Chemical etching of tetrahedrite Cu ₁₀ Cd ₂ Sb ₄ S ₁₃ monograin powder materials for solar cell applications. Materials Science in Semiconductor Processing, 2022, 138, 106291.	4.0	4
85	Properties of Cu-Sb-Se thin films deposited by magnetron co-sputtering for solar cell applications. Thin Solid Films, 2021, 740, 139004.	1.8	4
86	Effect of alkali ions (Na ⁺ , K ⁺ , Cs ⁺) on reaction mechanism of CZTS nano-particles synthesis. Superlattices and Microstructures, 2018, 116, 54-63.	3.1	3
87	Kesterite monograins for solar cells and water splitting applications. Thin Solid Films, 2021, 739, 138981.	1.8	3
88	Pyrite as prospective absorber material for monograin layer solar cell. Thin Solid Films, 2022, 743, 139068.	1.8	3
89	Temperature dependent optical and electrical characterization of SnS/CdS solar cell. Thin Solid Films, 2022, 743, 139069.	1.8	3
90	<title>Device characteristics of CuInSe ₂ -based solar cells</title>. , 2005, , .		2

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91	The influence of doping with donor type impurities on the properties of CuInSe ₂ . Physica Status Solidi C: Current Topics in Solid State Physics, 2008, 5, 609-611.	0.8	2
92	The effect of elevated temperatures on excitonic emission and degradation processes of WS ₂ monolayers. Physical Chemistry Chemical Physics, 2020, 22, 22609-22616.	2.8	2
93	Growth of CuInSe ₂ monograin powders with different compositions. Materials Research Society Symposia Proceedings, 2005, 865, 14281.	0.1	1
94	CdTe Films on Mo/Glass Substrates: Preparation and Properties. Materials Research Society Symposia Proceedings, 2008, 1123, 20.	0.1	1
95	Growth of Cu-Rich/Poor CuInS ₂ thin films by the sequential modulated flux deposition technique. Materials Research Society Symposia Proceedings, 2009, 1165, 1.	0.1	1
96	Detailed photoluminescence study of Cu ₂ Ge(SSe) ₃ microcrystals. AIP Advances, 2021, 11, 085105.	1.3	1
97	<title>Tailoring the composition and properties of CuInSe<math>\langle inf \langle roman \rangle 2 \langle /roman \rangle \langle /inf \rangle \langle /math \rangle</title> materials for solar cell application</title>. , 2005, 5946, 224.		0
98	High Temperature Properties of CdTe Crystals, doped by Sb. , 2006, , .		0
99	Selenization of CO-sputtered Cu-In alloy films. Conference Record of the IEEE Photovoltaic Specialists Conference, 2008, , .	0.0	0
100	Preparation and Properties of CdTe Films on Mo/Glass Substrates. Materials Research Society Symposia Proceedings, 2009, 1165, 1.	0.1	0
101	ZnCdSeTe Semiconductor Compounds: Preparation and Properties. Materials Research Society Symposia Proceedings, 2011, 1341, 1.	0.1	0
102	Study of the structure and optoelectronic properties of Cu ₂ Ge(SexS _{1-x}) ₃ microcrystalline powders. Thin Solid Films, 2022, 742, 139053.	1.8	0
103	Photoelectrochemical properties and band positions of Cd-substituted tetrahedrite Cu ₁₀ Cd ₂ Sb ₄ S ₁₃ monograin materials grown in molten CdI ₂ and Lil. Thin Solid Films, 2022, 741, 139030.	1.8	0