Sergiu Levcenco

List of Publications by Year
in descending order

82 papers	3,152 citations	172386 29 h-index	155592 55 g-index
83 all docs	83 docs citations	83 times ranked	3693 citing authors

#	Article	IF	Citations
1	Conformal monolayer contacts with lossless interfaces for perovskite single junction and monolithic tandem solar cells. Energy and Environmental Science, 2019, 12, 3356-3369.	15.6	519
2	Open-Circuit Voltages Exceeding 1.26 V in Planar Methylammonium Lead Iodide Perovskite Solar Cells. ACS Energy Letters, 2019, 4, 110-117.	8.8	296
3	Improved performance of Geâ€alloyed CZTGeSSe thinâ€film solar cells through control of elemental losses. Progress in Photovoltaics: Research and Applications, 2015, 23, 376-384.	4.4	186
4	Fineâ€Tuning the Sn Content in CZTSSe Thin Films to Achieve 10.8% Solar Cell Efficiency from Sprayâ€Deposited Waterâ€"Ethanolâ€Based Colloidal Inks. Advanced Energy Materials, 2015, 5, 1501404.	10.2	120
5	Synergistic Effects of Double Cation Substitution in Solutionâ€Processed CZTS Solar Cells with over 10% Efficiency. Advanced Energy Materials, 2018, 8, 1802540.	10.2	113
6	Identifying the Real Minority Carrier Lifetime in Nonideal Semiconductors: A Case Study of Kesterite Materials. Advanced Energy Materials, 2017, 7, 1700167.	10.2	106
7	Structural and optical properties of Cu2ZnSnS4 thin film absorbers from ZnS and Cu3SnS4 nanoparticle precursors. Thin Solid Films, 2013, 535, 10-13.	0.8	98
8	Compositionally Tunable Photoluminescence Emission in Cu₂ZnSn(S_{1â^'<i>x</i>}Se_{<i>x</i>})₄ Nanocrystals. Angewandte Chemie - International Edition, 2013, 52, 9120-9124.	7.2	98
9	Phase-transition-driven growth of compound semiconductor crystals from ordered metastable nanorods. Nature Communications, 2014, 5, 3133.	5.8	98
10	Free-to-bound recombination in near stoichiometric Cu<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>ZnSnS<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>4</mml:mn></mml:msub></mml:math>single crystals. Physical Review B, 2012, 86, .	1.1	97
11	Light-Induced Increase of Electron Diffusion Length in a pâ€"n Junction Type CH₃NH₃PbBr₃ Perovskite Solar Cell. Journal of Physical Chemistry Letters, 2015, 6, 2469-2476.	2.1	91
12	Polarized Raman scattering study of kesterite type Cu2ZnSnS4 single crystals. Scientific Reports, 2016, 6, 19414.	1.6	88
13	Polarized Raman scattering analysis of Cu2ZnSnSe4 and Cu2ZnGeSe4 single crystals. Journal of Applied Physics, 2013, 114, 193514.	1.1	70
14	Deep Defects in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>Cu</mml:mi></mml:mrow><mml:mn>2</mml:mn></mml:msub><mn stretchy="false">(</mml:mo><mml:mi) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 222 Td (mathvariant="normal">S</mml:mi><mml:mo>,</m Cells with Varying Se Content. Physical Review Applied, 2016, 5, .	1.5	67
15	Suppressed Deep Traps and Bandgap Fluctuations in Cu₂CdSnS₄ Solar Cells with â‰ˆ8% Efficiency. Advanced Energy Materials, 2019, 9, 1902509.	10.2	65
16	Optical constants of Cu2ZnGeS4 bulk crystals. Journal of Applied Physics, 2010, 108, .	1.1	60
17	Chemistry and Dynamics of Ge in Kesterite: Toward Band-Gap-Graded Absorbers. Chemistry of Materials, 2017, 29, 9399-9406.	3.2	59
18	Timeâ€resolved investigation of Cu(In,Ga)Se₂ growth and Ga gradient formation during fast selenisation of metallic precursors. Progress in Photovoltaics: Research and Applications, 2015, 23, 1131-1143.	4.4	49

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19	Spectroscopic ellipsometry study of Cu2ZnGeSe4 and Cu2ZnSiSe4 poly-crystals. Materials Chemistry and Physics, 2013, 141, 58-62.	2.0	43
20	The electrical and optical properties of kesterites. JPhys Energy, 2019, 1, 044002.	2.3	43
21	Temperature dependency of Cu/Zn ordering in CZTSe kesterites determined by anomalous diffraction. Physica Status Solidi (B): Basic Research, 2016, 253, 1890-1897.	0.7	39
22	Features of the acceptor band and properties of localized carriers from studies of the variable-range hopping conduction in single crystals of p-Cu2ZnSnS4. Solar Energy Materials and Solar Cells, 2013, 112, 127-133.	3.0	36
23	Optical phonons in the kesterite Cu₂ZnGeS₄semiconductor: polarized Raman spectroscopy and first-principle calculations. RSC Advances, 2016, 6, 13278-13285.	1.7	35
24	Time resolved photoluminescence on Cu(In, Ga)Se2 absorbers: Distinguishing degradation and trap states. Applied Physics Letters, 2017, 110, .	1.5	32
25	Sn Substitution by Ge: Strategies to Overcome the Open-Circuit Voltage Deficit of Kesterite Solar Cells. ACS Applied Energy Materials, 2020, 3, 5830-5839.	2.5	32
26	Synthesis and Characterization of V-Doped Î²-In₂S₃ Thin Films on FTO Substrates. Journal of Physical Chemistry C, 2016, 120, 28753-28761.	1.5	31
27	Orientation-distribution mapping of polycrystalline materials by Raman microspectroscopy. Scientific Reports, 2016, 5, 18410.	1.6	31
28	Defect study of Cu2ZnSn(SxSe1â^’x)4 thin film absorbers using photoluminescence and modulated surface photovoltage spectroscopy. Applied Physics Letters, 2015, 106, .	1.5	30
29	Polarized Raman scattering analysis of Cu₂ZnSiS₄and Cu₂ZnSiSe₄single crystals. Journal of Applied Physics, 2013, 114, 173507.	1.1	29
30	Optical spectra and energy band structure of single crystalline CuGaS₂and CuInS₂. Journal of Physics Condensed Matter, 2007, 19, 456222.	0.7	27
31	Spectroscopic ellipsometry study of Cu2ZnSnSe4 bulk crystals. Applied Physics Letters, 2014, 105, 061909.	1.5	26
32	Optical phonons in the wurtzstanniteCu2ZnGeS4semiconductor: Polarized Raman spectroscopy and first-principle calculations. Physical Review B, 2014, 89, .	1.1	24
33	Earth abundant thin film solar cells from co-evaporated Cu2SnS3 absorber layers. Journal of Alloys and Compounds, 2016, 689, 182-186.	2.8	24
34	Optoelectronic and material properties of solution-processed Earth-abundant Cu2BaSn(S, Se)4 films for solar cell applications. Nano Energy, 2021, 80, 105556.	8.2	23
35	Dielectric functions and fundamental band gaps of Cu2In4Se7, CuGa3Se5and CuGa5Se8crystals. Journal Physics D: Applied Physics, 2007, 40, 740-748.	1.3	21
36	Energy spectrum of near-edge holes and conduction mechanisms in Cu2ZnSiSe4 single crystals. Journal of Alloys and Compounds, 2013, 580, 481-486.	2.8	21

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37	Optical properties of monocrystalline CuIn5Se8. Journal of Applied Physics, 2006, 99, 073513.	1.1	20
38	Dielectric functions and optical constants modeling for CuIn3Se5 and CuIn5Se8. Journal of Applied Physics, 2008, 103, .	1.1	18
39	Preparation and optical characterization of Cu2ZnGeSe4 thin films. Optical Materials, 2015, 40, 76-80.	1.7	17
40	Metal acetate based synthesis of small-sized Cu₂ZnSnS₄ nanocrystals: effect of injection temperature and synthesis time. RSC Advances, 2017, 7, 11752-11760.	1.7	17
41	Modeling the optical constants of Cu2In4Se7 and CuGa3Se5 crystals. Journal of Applied Physics, 2007, 101, 013524.	1.1	15
42	Photoluminescence characterization of Cu₂ZnGeS₄ single crystals. Physica Status Solidi C: Current Topics in Solid State Physics, 2013, 10, 1079-1081.	0.8	14
43	X-ray diffraction investigation on Cu₂ZnSiSe₄ single and polycrystalline crystals. Zeitschrift Fur Kristallographie - Crystalline Materials, 2015, 230, 507-511.	0.4	14
44	Reaction Pathway for Efficient Cu₂ZnSnSe₄ Solar Cells from Alloyed Cuï£¿Sn Precursor via a Cuâ€Rich Selenization Stage. Solar Rrl, 2020, 4, 2000124.	3.1	13
45	Optical properties of CuGa3Se5single crystals. Journal Physics D: Applied Physics, 2006, 39, 1515-1520.	1.3	12
46	Optical constants of Cu(In1âˆ'xGax)5Se8 crystals. Journal of Applied Physics, 2010, 107, 033502.	1.1	12
47	Exciton spectra and energy band structure of Cu2ZnSiSe4. Journal of Alloys and Compounds, 2014, 587, 393-397.	2.8	12
48	Effect of Ag incorporation on structure and optoelectronic properties of (Ag1âˆ'xCux)2ZnSnSe4 solid solutions. Physical Review Materials, 2020, 4, .	0.9	12
49	Optical characterization of CuIn3Se5, CuGa3Se5and CuGa5Se8crystals by spectroscopic ellipsometry. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, 2913-2918.	0.8	11
50	Variable-range hopping conductivity in Cu2ZnGeSe4 single crystals. Solar Energy Materials and Solar Cells, 2014, 127, 87-91.	3.0	11
51	Cu/Zn disorder in stoichiometric Cu2ZnSn(S1-xSex)4 semiconductors: A complementary neutron and anomalous X-ray diffraction study. Journal of Alloys and Compounds, 2020, 846, 156304.	2.8	10
52	Optoelectronic property comparison for isostructural Cu₂BaGeSe₄ and Cu₂BaSnS₄ solar absorbers. Journal of Materials Chemistry A, 2021, 9, 23619-23630.	5.2	10
53	Urbach's tail in the absorption spectra of CuIn5Se8and CuGa3Se5single crystals. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, 2909-2912.	0.8	8
54	Optical constants of CuGa5Se8 crystals. Journal of Applied Physics, 2007, 102, .	1.1	8

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55	Scaling of the temperature-dependent resistivity in SrFe2â^'xNixAs2. Physica C: Superconductivity and Its Applications, 2011, 471, 237-241.	0.6	7
56	Scaling properties of YBa2Cu3Oxfilms. Superconductor Science and Technology, 2005, 18, 1437-1440.	1.8	6
57	Scaling of the temperature-dependent resistivity in 122 iron-pnictide superconductors. Superconductor Science and Technology, 2011, 24, 105004.	1.8	6
58	Birefringence of Cu 2 ZnSiSe 4 single crystals. Journal of Alloys and Compounds, 2015, 635, 188-193.	2.8	6
59	Mechanisms of charge transfer and electronic properties of Cu2ZnGeS4 from investigations of the high-field magnetotransport. Scientific Reports, 2017, 7, 10685.	1.6	6
60	Spectroscopic ellipsometry study of Cu2ZnSnS4 bulk poly-crystals. Applied Physics Letters, 2018, 112, 161901.	1.5	6
61	Fundamental absorption edge in CuIn5Se8and CuGa3Se5single crystals. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, 2904-2908.	0.8	5
62	Scaling of the Temperature Dependent Resistivity and Hall Effect in Ba(Fe1â^'x Co x)As2. Journal of Superconductivity and Novel Magnetism, 2011, 24, 2285-2292.	0.8	5
63	Resistivity scaling 1111 iron-pnictide superconductors. Physica C: Superconductivity and Its Applications, 2011, 471, 509-514.	0.6	5
64	Excitonic and band-band transitions of Cu2ZnSiS4 determined from reflectivity spectra. Solid State Communications, 2014, 190, 44-48.	0.9	5
65	Photoluminescence study of solution-deposited Cu2BaSnS4 thin films. APL Materials, 2021, 9, .	2.2	5
66	Characterization of Cu2SnSe3 by spectroscopic ellipsometry. Thin Solid Films, 2013, 535, 384-386.	0.8	4
67	High-field hopping magnetotransport in kesterites. Journal of Magnetism and Magnetic Materials, 2018, 459, 246-251.	1.0	4
68	Analysis of the optical properties of Cu(In1â^'xGax)3Se5 crystals. Journal of Applied Physics, 2008, 104, 093507.	1.1	3
69	Comparative study of tetragonal Cu2In7Se11.5 and trigonal CuIn5Se8 by spectroscopic ellipsometry. Materials Chemistry and Physics, 2011, 125, 77-81.	2.0	3
70	Investigation of near-stoichiometric polycrystalline CuInSe2 thin films by photoreflectance spectroscopy. Journal of Applied Physics, 2020, 127, 125701.	1.1	3
71	Determination of the dielectric function of MnIn2S4 single crystals by spectroscopic ellipsometry. Journal of Physics and Chemistry of Solids, 2012, 73, 720-723.	1.9	2
72	Polarized infrared reflectivity of Cu2CdSnS4 single crystals. Applied Physics Letters, 2020, 117, 182102.	1.5	2

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73	Radiative recombination properties of near-stoichiometric <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>CuInS</mml:mi><mml:msub><mml:mi mathvariant="normal">e</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> thin films. Physical Review Materials, 2020, 4, .	0.9	2
74	Scaling of the Temperature Dependent Resistivity in 11 Iron-Pnictide Superconductors. Journal of Superconductivity and Novel Magnetism, 2012, 25, 1753-1759.	0.8	1
75	Scaling of the Temperature Dependent Resistivity in 111 Iron-Pnictide Superconductors. Journal of Superconductivity and Novel Magnetism, 2013, 26, 2727-2734.	0.8	1
76	Defects in Cu<inf>2</inf>ZnSn(S,Se)<inf>4</inf> solar cells studied by photoluminescence, admittance and IVT. , 2014, , .		1
77	Radiative recombination from localized states in CZT(S, Se) investigated by combined PL and TRPL at low temperatures. , 2016, , .		1
78	Radiative emission from Cu2ZnSnS4/ZnSn core/shell nanocrystals. Journal of Materials Chemistry C, 2019, 7, 6129-6133.	2.7	1
79	Microscopic insight into the impact of the KF postâ€deposition treatment on optoelectronic properties of (Ag,Cu)(In,Ga)Se 2 solar cells. Progress in Photovoltaics: Research and Applications, 0, , .	4.4	1
80	Optical constants of Cu(In0.7Ga0.3)5Se8 and Cu(In0.4Ga0.6)5Se8 crystals. Journal of Physics and Chemistry of Solids, 2010, 71, 1443-1446.	1.9	0
81	Investigations of the main loss mechanisms in Cu2ZnSn(S,Se)4 solar cells spray-coated from water-ethanol based ink: Reducing the density of defects to reach efficiencies close to 10%. , 2015, , .		0
82	Electroreflectance of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Cu</mml:mi><mml:mn>2</mml:mn></mml: mathvariant="normal">S</mml:mi><mml:mn>4</mml:mn></mml:msu. Physical Review Materials, 2021, 5, .	0.9	0