Rafael Jaramillo

List of Publications by Year
in descending order

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65 papers	1,934 citations	257450 24 h-index	254184 43 g-index
66 all docs	66 docs citations	66 times ranked	3198 citing authors

#	Article	IF	Citations
1	Low-energy electronic structure of perovskite and Ruddlesden-Popper semiconductors in the Ba-Zr-S system probed by bond-selective polarized x-ray absorption spectroscopy, infrared reflectivity, and Raman scattering. Physical Review B, 2022, 105, .	3.2	5
2	Measuring and Then Eliminating Twin Domains in SnSe Thin Films Using Fast Optical Metrology and Molecular Beam Epitaxy. ACS Nano, 2022, 16, 9472-9478.	14.6	3
3	Defect-Level Switching for Highly Nonlinear and Hysteretic Electronic Devices. Physical Review Applied, 2021, 15, .	3.8	1
4	Unveiling oxidation mechanism of bulk ZrS2. MRS Advances, 2021, 6, 303-306.	0.9	3
5	Making BaZrS₃ Chalcogenide Perovskite Thin Films by Molecular Beam Epitaxy. Advanced Functional Materials, 2021, 31, 2105563.	14.9	34
6	Deep Learning for Rapid Analysis of Spectroscopic Ellipsometry Data. Advanced Photonics Research, 2021, 2, 2100147.	3.6	4
7	High densification of BaZrS3 powder inspired by the cold-sintering process. Journal of Materials Research, 2021, 36, 4404-4412.	2.6	4
8	Photonic Platforms Using Inâ€Plane Optical Anisotropy of Tin (II) Selenide and Black Phosphorus. Advanced Photonics Research, 2021, 2, 2100176.	3.6	4
9	Time-Resolved Photoluminescence Studies of Perovskite Chalcogenides. , 2021, , .		0
10	Formation of large-area MoS2 thin films by oxygen-catalyzed sulfurization of Mo thin films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, .	2.1	9
11	Growth Kinetics and Atomistic Mechanisms of Native Oxidation of ZrS_xSe_{2â€“x} and MoS₂ Crystals. Nano Letters, 2020, 20, 8592-8599.	9.1	16
12	Refractive Uses of Layered and Two-Dimensional Materials for Integrated Photonics. ACS Photonics, 2020, 7, 3270-3285.	6.6	23
13	Phonons and excitons in ZrSe₂â€“ZrS₂ alloys. Journal of Materials Chemistry C, 2020, 8, 5732-5743.	5.5	22
14	Making Largeâ€Area Titanium Disulfide Films at Reduced Temperature by Balancing the Kinetics of Sulfurization and Roughening. Advanced Functional Materials, 2020, 30, 2003617.	14.9	6
15	Discovery of highly polarizable semiconductors BaZrS3 and Ba3Zr2S7. Physical Review Materials, 2020, 4, .	2.4	15
16	Optomechanical control of stacking patterns of h-BN bilayer. Nano Research, 2019, 12, 2634-2639.	10.4	20
17	Near-infrared optical properties and proposed phase-change usefulness of transition metal disulfides. Applied Physics Letters, 2019, 115, .	3.3	19
18	In praise and in search of highly-polarizable semiconductors: Technological promise and discovery strategies. APL Materials, 2019, 7, .	5.1	21

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19	Tuning Electrical, Optical, and Thermal Properties through Cation Disorder in Cu₂ZnSnS₄. Chemistry of Materials, 2019, 31, 8402-8412.	6.7	11
20	Crystal growth and structural analysis of perovskite chalcogenide BaZrS₃ and Ruddlesdenâ€“Popper phase Ba₃Zr₂S₇. Journal of Materials Research, 2019, 34, 3819-3826.	2.6	36
21	Near-infrared photonic phase-change properties of transition metal ditellurides. , 2019, , .		4
22	Near-infrared photonic phase-change properties of transition metal ditellurides. Proceedings of SPIE, 2019, 11085, .	0.8	0
23	Determination of adsorption-controlled growth windows of chalcogenide perovskites. MRS Communications, 2018, 8, 145-151.	1.8	5
24	Opto-Mechanics Driven Fast Martensitic Transition in Two-Dimensional Materials. Nano Letters, 2018, 18, 7794-7800.	9.1	38
25	The effect of an improved density functional on the thermodynamics and adsorption-controlled growth windows of chalcogenide perovskites. MRS Advances, 2018, 3, 3249-3254.	0.9	3
26	Optimal Bandgap in a 2D Ruddlesdenâ€“Popper Perovskite Chalcogenide for Single-Junction Solar Cells. Chemistry of Materials, 2018, 30, 4882-4886.	6.7	49
27	Large and persistent photoconductivity due to hole-hole correlation in CdS. Physical Review Materials, 2018, 2, .	2.4	21
28	Transient terahertz photoconductivity measurements of minority-carrier lifetime in tin sulfide thin films: Advanced metrology for an early stage photovoltaic material. Journal of Applied Physics, 2016, 119, .	2.5	47
29	The impact of sodium contamination in tin sulfide thin-film solar cells. APL Materials, 2016, 4, .	5.1	23
30	Using Atom-Probe Tomography to Understand<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>Zn</mml:mi><mml:mi mathvariant="normal">O</mml:mi><mml:mo>â^¶</mml:mo><mml:mi>Al</mml:mi><mml:mo>/</mml:mo><mml:msub><mml:mrow><mml:mi mathvariant="normal">O</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub><mml:mo>/</mml:mo> Diodes. Physical Review Applied, 2016, 6, .	3.8	7
31	Dopant activation in Sn-doped Ga2O3 investigated by X-ray absorption spectroscopy. Applied Physics Letters, 2015, 107, .	3.3	53
32	Sub-Kelvin magnetic and electrical measurements in a diamond anvil cell with in situ tunability. Review of Scientific Instruments, 2015, 86, 093901.	1.3	7
33	Making Record-efficiency SnS Solar Cells by Thermal Evaporation and Atomic Layer Deposition. Journal of Visualized Experiments, 2015, , e52705.	0.3	19
34	Non-monotonic effect of growth temperature on carrier collection in SnS solar cells. Applied Physics Letters, 2015, 106, .	3.3	18
35	X-Ray Absorption Spectroscopy Study of Structure and Stability of Disordered (Cu<inline-formula> <tex-math>$_{f) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50 112 Td (2}$</tex-math></inline-formula>(ZnS)<inline-formula><tex-math>$_{f 1-x}$</tex-math></inline-formula>(ZnS)<inline-formula><tex-math>$_{f x}$</tex-math></inline-formula> Alloys. IEEE Journal of Photovoltaics, 2015, 5, 372-377.	2.5	15
36	Framework to predict optimal buffer layer pairing for thin film solar cell absorbers: A case study for tin sulfide/zinc oxysulfide. Journal of Applied Physics, 2015, 118, .	2.5	29

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37	Coâ€optimization of SnS absorber and Zn(O,S) buffer materials for improved solar cells. Progress in Photovoltaics: Research and Applications, 2015, 23, 901-908.	8.1	132
38	Variations of ionization potential and electron affinity as a function of surface orientation: The case of orthorhombic SnS. Applied Physics Letters, 2014, 104, .	3.3	52
39	Origins of bad-metal conductivity and the insulatorâ€“metal transition in the rare-earth nickelates. Nature Physics, 2014, 10, 304-307.	16.7	143
40	Local charge writing in epitaxial SmNiO₃ thin films. Journal of Materials Chemistry C, 2014, 2, 3805-3811.	5.5	9
41	Impact of H<inf>2</inf>S annealing on SnS device performance. , 2014, , .		3
42	3.88% Efficient Tin Sulfide Solar Cells using Congruent Thermal Evaporation. Advanced Materials, 2014, 26, 7488-7492.	21.0	227
43	High pressure synthesis of SmNiO3 thin films and implications for thermodynamics of the nickelates. Journal of Materials Chemistry C, 2013, 1, 2455.	5.5	44
44	Hall effect measurements on epitaxial SmNiO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>thin films and implications for antiferromagnetism. Physical Review B, 2013, 87, .	3.2	55
45	Four-probe electrical measurements with a liquid pressure medium in a diamond anvil cell. Review of Scientific Instruments, 2012, 83, 103902.	1.3	10
46	Pressure tuning of competing magnetic interactions in intermetallic CeFe<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>. Physical Review B, 2012, 86, .	3.2	13
47	Order parameter fluctuations at a buried quantum critical point. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 7224-7229.	7.1	59
48	Stable metalâ€“insulator transition in epitaxial SmNiO3 thin films. Journal of Solid State Chemistry, 2012, 190, 233-237.	2.9	42
49	Scanning tunneling microscope investigation of local density of states in Al-doped ZnO thin films. Physical Review B, 2011, 83, .	3.2	19
50	Kelvin force microscopy studies of work function of transparent conducting ZnO:Al electrodes synthesized under varying oxygen pressures. Solar Energy Materials and Solar Cells, 2011, 95, 602-605.	6.2	28
51	Electronic Granularity and the Work Function of Transparent Conducting ZnO:Al Thin Films. Advanced Functional Materials, 2011, 21, 4068-4072.	14.9	19
52	Highâ€Currentâ€Density Monolayer CdSe/ZnS Quantum Dot Lightâ€Emitting Devices with Oxide Electrodes. Advanced Materials, 2011, 23, 4521-4525.	21.0	33
53	Narrow band defect luminescence from Al-doped ZnO probed by scanning tunneling cathodoluminescence. Applied Physics Letters, 2011, 99, .	3.3	24
54	Magnetism, structure, and charge correlation at a pressure-induced Mott-Hubbard insulator-metal transition. Physical Review B, 2011, 83, .	3.2	25

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55	Signatures of quantum criticality in pure Cr at high pressure. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 13631-13635.	7.1	51
56	Invited Article: High-pressure techniques for condensed matter physics at low temperature. Review of Scientific Instruments, 2010, 81, 041301.	1.3	43
57	Diffraction line-shapes, Fermi surface nesting, and quantum criticality in antiferromagnetic chromium at high pressure (invited). Journal of Applied Physics, 2010, 107, 09E116.	2.5	4
58	Breakdown of the Bardeenâ€“Cooperâ€“Schrieffer ground state at a quantum phase transition. Nature, 2009, 459, 405-409.	27.8	40
59	Chromium at high pressures: Weak coupling and strong fluctuations in an itinerant antiferromagnet. Physical Review B, 2008, 77, .	3.2	19
60	Pressure-Tuned Spin and Charge Ordering in an Itinerant Antiferromagnet. Physical Review Letters, 2007, 99, 137201.	7.8	27
61	Microscopic and Macroscopic Signatures of Antiferromagnetic Domain Walls. Physical Review Letters, 2007, 98, 117206.	7.8	25
62	Direct measurement of antiferromagnetic domain fluctuations. Nature, 2007, 447, 68-71.	27.8	152
63	Synthesis and Characterization of Conjugated Polymers Containing First Row Transition Metal Complexes. Macromolecules, 2006, 39, 8652-8658.	4.8	15
64	Energy dispersive x-ray diffraction of charge density waves via chemical filtering. Review of Scientific Instruments, 2005, 76, 063913.	1.3	19
65	Time-resolved photoluminescence studies of perovskite chalcogenides. Faraday Discussions, 0, 239, 146-159.	3.2	8