

Aron Walsh

List of Publications by Year in descending order

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416
papers

56,015
citations

1461

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226
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483
all docs

483
docs citations

483
times ranked

50435
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | Anharmonic lattice dynamics of superionic lithium nitride. <i>Journal of Materials Chemistry A</i> , 2022, 10, 2295-2304. | 5.2 | 9 |
| 2 | Pushing the boundaries of lithium battery research with atomistic modelling on different scales. <i>Progress in Energy</i> , 2022, 4, 012002. | 4.6 | 12 |
| 3 | From Atoms to Cells: Multiscale Modeling of $\text{LiNi}_x\text{Mn}_y\text{Co}_z\text{O}_2$ Cathodes for Li-Ion Batteries. <i>ACS Energy Letters</i> , 2022, 7, 108-122. | 8.8 | 16 |
| 4 | Breaking the Aristotype: Featurization of Polyhedral Distortions in Perovskite Crystals. <i>Chemistry of Materials</i> , 2022, 34, 562-573. | 3.2 | 8 |
| 5 | Role of ripples in altering the electronic and chemical properties of graphene. <i>Journal of Chemical Physics</i> , 2022, 156, 054708. | 1.2 | 2 |
| 6 | Copper coordination polymers with selective hole conductivity. <i>Journal of Materials Chemistry A</i> , 2022, 10, 9582-9591. | 5.2 | 9 |
| 7 | Lone pair driven anisotropy in antimony chalcogenide semiconductors. <i>Physical Chemistry Chemical Physics</i> , 2022, 24, 7195-7202. | 1.3 | 27 |
| 8 | Cation disorder engineering yields AgBiS_2 nanocrystals with enhanced optical absorption for efficient ultrathin solar cells. <i>Nature Photonics</i> , 2022, 16, 235-241. | 15.6 | 100 |
| 9 | Environmental Stability of Crystals: A Greedy Screening. <i>Chemistry of Materials</i> , 2022, 34, 2545-2552. | 3.2 | 9 |
| 10 | Interfacial Dipole Layer Enables High-Performance Heterojunctions for Photoelectrochemical Water Splitting. <i>ACS Energy Letters</i> , 2022, 7, 1392-1402. | 8.8 | 11 |
| 11 | Mixed-Dimensional Formamidinium Bismuth Iodides Featuring In-Situ Formed Type-II Band Structure for Convolution Neural Networks. <i>Advanced Science</i> , 2022, 9, e2200168. | 5.6 | 8 |
| 12 | Machine learned calibrations to high-throughput molecular excited state calculations. <i>Journal of Chemical Physics</i> , 2022, 156, 134116. | 1.2 | 5 |
| 13 | Perovskite synthesizability using graph neural networks. <i>Npj Computational Materials</i> , 2022, 8, . | 3.5 | 16 |
| 14 | High Power Irradiance Dependence of Charge Species Dynamics in Hybrid Perovskites and Kinetic Evidence for Transient Vibrational Stark Effect in Formamidinium. <i>Nanomaterials</i> , 2022, 12, 1616. | 1.9 | 0 |
| 15 | Electronic defects in metal oxide photocatalysts. <i>Nature Reviews Materials</i> , 2022, 7, 503-521. | 23.3 | 129 |
| 16 | Band gap opening from displacive instabilities in layered covalent-organic frameworks. <i>Journal of Materials Chemistry A</i> , 2022, 10, 13500-13507. | 5.2 | 7 |
| 17 | Insight into the Fergusonite-Scheelite Phase Transition of ABO_4 -Type Oxides by Density Functional Theory: A Case Study of the Subtleties of the Ground State of BiVO_4 . <i>Chemistry of Materials</i> , 2022, 34, 5334-5343. | 3.2 | 6 |
| 18 | Elucidating the origin of chiroptical activity in chiral 2D perovskites through nano-confined growth. <i>Nature Communications</i> , 2022, 13, . | 5.8 | 41 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 19 | Switchable Electric Dipole from Polaron Localization in Dielectric Crystals. <i>Physical Review Letters</i> , 2022, 129, . | 2.9 | 3 |
| 20 | UnlockNN: Uncertainty quantification for neural network models of chemical systems. <i>Journal of Open Source Software</i> , 2022, 7, 3700. | 2.0 | 2 |
| 21 | Modeling Grain Boundaries in Polycrystalline Halide Perovskite Solar Cells. <i>Annual Review of Condensed Matter Physics</i> , 2021, 12, 95-109. | 5.2 | 25 |
| 22 | Multi-phonon proton transfer pathway in a molecular organic ferroelectric crystal. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 2885-2890. | 1.3 | 3 |
| 23 | Insights into the electric double-layer capacitance of two-dimensional electrically conductive metal-organic frameworks. <i>Journal of Materials Chemistry A</i> , 2021, 9, 16006-16015. | 5.2 | 31 |
| 24 | Perovskite-inspired materials for photovoltaics and beyond—from design to devices. <i>Nanotechnology</i> , 2021, 32, 132004. | 1.3 | 106 |
| 25 | Lead-free halide double perovskites: Toward stable and sustainable optoelectronic devices. <i>Materials Today</i> , 2021, 49, 123-144. | 8.3 | 57 |
| 26 | Passivation Properties and Formation Mechanism of Amorphous Halide Perovskite Thin Films. <i>Advanced Functional Materials</i> , 2021, 31, 2010330. | 7.8 | 17 |
| 27 | Solvent engineered synthesis of layered SnO for high-performance anodes. <i>Npj 2D Materials and Applications</i> , 2021, 5, . | 3.9 | 11 |
| 28 | Bismuth Doping Alters Structural Phase Transitions in Methylammonium Lead Tribromide Single Crystals. <i>Journal of Physical Chemistry Letters</i> , 2021, 12, 2749-2755. | 2.1 | 14 |
| 29 | Rapid Recombination by Cadmium Vacancies in CdTe. <i>ACS Energy Letters</i> , 2021, 6, 1392-1398. | 8.8 | 39 |
| 30 | Prediction of high thermoelectric performance in the low-dimensional metal halide Cs ₃ Cu ₂ I ₅ . <i>Npj Computational Materials</i> , 2021, 7, . | 3.5 | 26 |
| 31 | Emerging inorganic solar cell efficiency tables (version 2). <i>JPhys Energy</i> , 2021, 3, 032003. | 2.3 | 40 |
| 32 | BiSbWO ₆ : Properties of a mixed 5s/6s lone-pair-electron system. <i>Chemical Physics</i> , 2021, 544, 111117. | 0.9 | 4 |
| 33 | Correcting the corrections for charged defects in crystals. <i>Npj Computational Materials</i> , 2021, 7, . | 3.5 | 17 |
| 34 | Best practices in machine learning for chemistry. <i>Nature Chemistry</i> , 2021, 13, 505-508. | 6.6 | 240 |
| 35 | <i>Ab initio</i> calculation of the detailed balance limit to the photovoltaic efficiency of single p-n junction kesterite solar cells. <i>Applied Physics Letters</i> , 2021, 118, . | 1.5 | 7 |
| 36 | Giant Huang-Rhys Factor for Electron Capture by the Iodine Interstitial in Perovskite Solar Cells. <i>Journal of the American Chemical Society</i> , 2021, 143, 9123-9128. | 6.6 | 37 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 37 | Assessment of interstitial potentials for rapid prediction of absolute band energies in crystals. <i>Journal of Chemical Physics</i> , 2021, 155, 024113. | 1.2 | 1 |
| 38 | Phase Diagram and Cation Dynamics of Mixed MA _x FA _x PbBr ₃ Hybrid Perovskites. <i>Chemistry of Materials</i> , 2021, 33, 5926-5934. | 3.2 | 16 |
| 39 | Low Barrier for Exciton Self-Trapping Enables High Photoluminescence Quantum Yield in Cs ₃ Cu ₂ I ₅ . <i>Journal of Physical Chemistry Letters</i> , 2021, 12, 8447-8452. | 2.1 | 16 |
| 40 | Hidden spontaneous polarisation in the chalcogenide photovoltaic absorber Sn ₂ Sb ₂ I ₃ . <i>Materials Horizons</i> , 2021, 8, 2709-2716. | 6.4 | 24 |
| 41 | Evolutionary exploration of polytypism in lead halide perovskites. <i>Chemical Science</i> , 2021, 12, 12165-12173. | 3.7 | 11 |
| 42 | Colloidal nano-MOFs nucleate and stabilize ultra-small quantum dots of lead bromide perovskites. <i>Chemical Science</i> , 2021, 12, 6129-6135. | 3.7 | 14 |
| 43 | Asymmetric carrier transport in flexible interface-type memristor enables artificial synapses with sub-femtojoule energy consumption. <i>Nanoscale Horizons</i> , 2021, 6, 987-997. | 4.1 | 16 |
| 44 | Enhanced visible light absorption in layered Cs ₃ Bi ₂ Br ₉ through mixed-valence Sn(II)/Sn(IV) doping. <i>Chemical Science</i> , 2021, 12, 14686-14699. | 3.7 | 21 |
| 45 | Self-trapping in bismuth-based semiconductors: Opportunities and challenges from optoelectronic devices to quantum technologies. <i>Applied Physics Letters</i> , 2021, 119, . | 1.5 | 18 |
| 46 | Atomistic models of metal halide perovskites. <i>Matter</i> , 2021, 4, 3867-3873. | 5.0 | 6 |
| 47 | Stabilized tilted-octahedra halide perovskites inhibit local formation of performance-limiting phases. <i>Science</i> , 2021, 374, 1598-1605. | 6.0 | 115 |
| 48 | Assessment of dynamic structural instabilities across 24 cubic inorganic halide perovskites. <i>Journal of Chemical Physics</i> , 2020, 152, 024703. | 1.2 | 67 |
| 49 | Descriptors for Electron and Hole Charge Carriers in Metal Oxides. <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 438-444. | 2.1 | 22 |
| 50 | Bandgap lowering in mixed alloys of Cs ₂ Ag(Sb _x Bi _{1-x})Br ₆ double perovskite thin films. <i>Journal of Materials Chemistry A</i> , 2020, 8, 21780-21788. | 5.2 | 66 |
| 51 | Energy Spotlight. <i>ACS Energy Letters</i> , 2020, 5, 3265-3267. | 8.8 | 0 |
| 52 | Suppression of phase transitions and glass phase signatures in mixed cation halide perovskites. <i>Nature Communications</i> , 2020, 11, 5103. | 5.8 | 46 |
| 53 | Manganese Porphyrin Interface Engineering in Perovskite Solar Cells. <i>ACS Applied Energy Materials</i> , 2020, 3, 7353-7363. | 2.5 | 17 |
| 54 | Modeling the dielectric constants of crystals using machine learning. <i>Journal of Chemical Physics</i> , 2020, 153, 024503. | 1.2 | 29 |

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| 55 | Thermodynamic Stabilization of Mixed-Halide Perovskites against Phase Segregation. Cell Reports Physical Science, 2020, 1, 100120. | 2.8 | 56 |
| 56 | Probing the ionic defect landscape in halide perovskite solar cells. Nature Communications, 2020, 11, 6098. | 5.8 | 75 |
| 57 | Sustainable lead management in halide perovskite solar cells. Nature Sustainability, 2020, 3, 1044-1051. | 11.5 | 87 |
| 58 | Chemical Trends in the Lattice Thermal Conductivity of Li(Ni, Mn, Co)O ₂ (NMC) Battery Cathodes. Chemistry of Materials, 2020, 32, 7542-7550. | 3.2 | 28 |
| 59 | Anisotropic Electron Transport Limits Performance of Bi ₂ WO ₆ Photoanodes. Journal of Physical Chemistry C, 2020, 124, 18859-18867. | 1.5 | 9 |
| 60 | Lattice Compression Increases the Activation Barrier for Phase Segregation in Mixed-Halide Perovskites. ACS Energy Letters, 2020, 5, 3152-3158. | 8.8 | 90 |
| 61 | A density functional theory study on the interface stability between CsPbBr ₃ and CuI. AIP Advances, 2020, 10, . | 0.6 | 4 |
| 62 | The Holey Grail of Transparent Electronics. Matter, 2020, 3, 604-606. | 5.0 | 2 |
| 63 | Assessing the defect tolerance of kesterite-inspired solar absorbers. Energy and Environmental Science, 2020, 13, 3489-3503. | 15.6 | 28 |
| 64 | Crystal structure and metallization mechanism of the ĩ€-radical metal TED. Chemical Science, 2020, 11, 11699-11704. | 3.7 | 15 |
| 65 | Hexagonal Stacking Faults Act as Hole-Blocking Layers in Lead Halide Perovskites. ACS Energy Letters, 2020, 5, 2231-2233. | 8.8 | 12 |
| 66 | Ligand engineering in Cu(<i>ii</i>) paddle wheel metal-organic frameworks for enhanced semiconductor. Journal of Materials Chemistry A, 2020, 8, 13160-13165. | 5.2 | 10 |
| 67 | Upper limit to the photovoltaic efficiency of imperfect crystals from first principles. Energy and Environmental Science, 2020, 13, 1481-1491. | 15.6 | 107 |
| 68 | Quick-start guide for first-principles modelling of point defects in crystalline materials. JPhys Energy, 2020, 2, 036001. | 2.3 | 22 |
| 69 | Polymorph exploration of bismuth stannate using first-principles phonon mode mapping. Chemical Science, 2020, 11, 7904-7909. | 3.7 | 11 |
| 70 | Consensus statement for stability assessment and reporting for perovskite photovoltaics based on ISOS procedures. Nature Energy, 2020, 5, 35-49. | 19.8 | 797 |
| 71 | Performance-limiting nanoscale trap clusters at grain junctions in halide perovskites. Nature, 2020, 580, 360-366. | 13.7 | 255 |
| 72 | Low-cost descriptors of electrostatic and electronic contributions to anion redox activity in batteries. IOP SciNotes, 2020, 1, 024805. | 0.4 | 5 |

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| 73 | Sn 5s ² lone pairs and the electronic structure of tin sulphides: A photoreflectance, high-energy photoemission, and theoretical investigation. <i>Physical Review Materials</i> , 2020, 4, . | 0.9 | 11 |
| 74 | CarrierCapture.jl: Anharmonic Carrier Capture. <i>Journal of Open Source Software</i> , 2020, 5, 2102. | 2.0 | 14 |
| 75 | The 2019 materials by design roadmap. <i>Journal Physics D: Applied Physics</i> , 2019, 52, 013001. | 1.3 | 236 |
| 76 | Role of Electron-Phonon Coupling in the Thermal Evolution of Bulk Rashba-Like Spin-Split Lead Halide Perovskites Exhibiting Dual-Band Photoluminescence. <i>ACS Energy Letters</i> , 2019, 4, 2205-2212. | 8.8 | 58 |
| 77 | Intrinsic doping limit and defect-assisted luminescence in Cs ₄ PbBr ₆ . <i>Journal of Materials Chemistry A</i> , 2019, 7, 20254-20261. | 5.2 | 48 |
| 78 | Anharmonic lattice relaxation during nonradiative carrier capture. <i>Physical Review B</i> , 2019, 100, . | 1.1 | 34 |
| 79 | Status of materials and device modelling for kesterite solar cells. <i>JPhys Energy</i> , 2019, 1, 042004. | 2.3 | 24 |
| 80 | Heterostructure Engineering of a Reverse Water Gas Shift Photocatalyst. <i>Advanced Science</i> , 2019, 6, 1902170. | 5.6 | 20 |
| 81 | Crystal Engineering of Bi ₂ WO ₆ to Polar Aurivillius-Phase Oxyhalides. <i>Journal of Physical Chemistry C</i> , 2019, 123, 29155-29161. | 1.5 | 12 |
| 82 | Data-Driven Discovery of Photoactive Quaternary Oxides Using First-Principles Machine Learning. <i>Chemistry of Materials</i> , 2019, 31, 7221-7230. | 3.2 | 45 |
| 83 | Highly Anisotropic Thermal Transport in LiCoO ₂ . <i>Journal of Physical Chemistry Letters</i> , 2019, 10, 5552-5556. | 2.1 | 17 |
| 84 | In situ observation of picosecond polaron self-localisation in δ -Fe ₂ O ₃ photoelectrochemical cells. <i>Nature Communications</i> , 2019, 10, 3962. | 5.8 | 93 |
| 85 | Charge-transfer interactions between fullerenes and a mesoporous tetrathiafulvalene-based metal-organic framework. <i>Beilstein Journal of Nanotechnology</i> , 2019, 10, 1883-1893. | 1.5 | 24 |
| 86 | Room Temperature Metallic Conductivity in a Metal-Organic Framework Induced by Oxidation. <i>Journal of the American Chemical Society</i> , 2019, 141, 16323-16330. | 6.6 | 93 |
| 87 | Atomistic insights into the order-disorder transition in Cu ₂ ZnSnS ₄ solar cells from Monte Carlo simulations. <i>Journal of Materials Chemistry A</i> , 2019, 7, 312-321. | 5.2 | 23 |
| 88 | Lattice strain causes non-radiative losses in halide perovskites. <i>Energy and Environmental Science</i> , 2019, 12, 596-606. | 15.6 | 343 |
| 89 | Lone-pair effect on carrier capture in Cu ₂ ZnSnS ₄ solar cells. <i>Journal of Materials Chemistry A</i> , 2019, 7, 2686-2693. | 5.2 | 55 |
| 90 | Dielectric and ferroic properties of metal halide perovskites. <i>APL Materials</i> , 2019, 7, . | 2.2 | 173 |

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| 91 | Embrace your defects. Nature Energy, 2019, 4, 95-96. | 19.8 | 13 |
| 92 | Redox-active metal-organic frameworks for energy conversion and storage. Journal of Materials Chemistry A, 2019, 7, 16571-16597. | 5.2 | 207 |
| 93 | Emerging inorganic solar cell efficiency tables (Version 1). JPhys Energy, 2019, 1, 032001. | 2.3 | 54 |
| 94 | Effect of oxygen deficiency on the excited state kinetics of WO ₃ and implications for photocatalysis. Chemical Science, 2019, 10, 5667-5677. | 3.7 | 97 |
| 95 | Accumulation of Deep Traps at Grain Boundaries in Halide Perovskites. ACS Energy Letters, 2019, 4, 1321-1327. | 8.8 | 117 |
| 96 | Donor and acceptor characteristics of native point defects in GaN. Journal Physics D: Applied Physics, 2019, 52, 335104. | 1.3 | 49 |
| 97 | Vacancy-Driven Stabilization of the Cubic Perovskite Polymorph of CsPb ₃ . Journal of Physical Chemistry C, 2019, 123, 9735-9744. | 1.5 | 47 |
| 98 | Enhanced Charge Transport in 2D Perovskites via Fluorination of Organic Cation. Journal of the American Chemical Society, 2019, 141, 5972-5979. | 6.6 | 274 |
| 99 | Charting a course for chemistry. Nature Chemistry, 2019, 11, 286-294. | 6.6 | 18 |
| 100 | Low-dimensional formamidinium lead perovskite architectures <i>via</i> controllable solvent intercalation. Journal of Materials Chemistry C, 2019, 7, 3945-3951. | 2.7 | 23 |
| 101 | Quick-start guide for first-principles modelling of semiconductor interfaces. JPhys Energy, 2019, 1, 016001. | 2.3 | 12 |
| 102 | Living in the salt-cocystal continuum: indecisive organic complexes with thermochromic behaviour. CrystEngComm, 2019, 21, 1626-1634. | 1.3 | 28 |
| 103 | Finding a junction partner for candidate solar cell absorbers enargite and bournonite from electronic band and lattice matching. Journal of Applied Physics, 2019, 125, . | 1.1 | 19 |
| 104 | Stability and flexibility of heterometallic formate perovskites with the dimethylammonium cation: pressure-induced phase transitions. Physical Chemistry Chemical Physics, 2019, 21, 4200-4208. | 1.3 | 10 |
| 105 | Impact of nonparabolic electronic band structure on the optical and transport properties of photovoltaic materials. Physical Review B, 2019, 99, . | 1.1 | 60 |
| 106 | CO ₂ Photoreduction: Heterostructure Engineering of a Reverse Water Gas Shift Photocatalyst (Adv. Sci. 22/2019). Advanced Science, 2019, 6, 1970134. | 5.6 | 3 |
| 107 | Identification of Lone-Pair Surface States on Indium Oxide. Journal of Physical Chemistry C, 2019, 123, 1700-1709. | 1.5 | 20 |
| 108 | Accelerated optimization of transparent, amorphous zinc-tin-oxide thin films for optoelectronic applications. APL Materials, 2019, 7, . | 2.2 | 23 |

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| 109 | SMACT: Semiconducting Materials by Analogy and Chemical Theory. Journal of Open Source Software, 2019, 4, 1361. | 2.0 | 21 |
| 110 | Materials discovery by chemical analogy: role of oxidation states in structure prediction. Faraday Discussions, 2018, 211, 553-568. | 1.6 | 22 |
| 111 | Intrinsic Instability of the Hybrid Halide Perovskite Semiconductor $\text{CH}_3\text{NH}_3\text{PbI}_3$. Chinese Physics Letters, 2018, 35, 036104. | 1.3 | 154 |
| 112 | Vacancy defect configurations in the metal-organic framework UiO-66: energetics and electronic structure. Journal of Materials Chemistry A, 2018, 6, 8507-8513. | 5.2 | 49 |
| 113 | Critical Role of Water in Defect Aggregation and Chemical Degradation of Perovskite Solar Cells. Journal of Physical Chemistry Letters, 2018, 9, 2196-2201. | 2.1 | 104 |
| 114 | Identification of Killer Defects in Kesterite Thin-Film Solar Cells. ACS Energy Letters, 2018, 3, 496-500. | 8.8 | 130 |
| 115 | Computer-aided design of metal chalcogenide semiconductors: from chemical composition to crystal structure. Chemical Science, 2018, 9, 1022-1030. | 3.7 | 54 |
| 116 | Influence of water intercalation and hydration on chemical decomposition and ion transport in methylammonium lead halide perovskites. Journal of Materials Chemistry A, 2018, 6, 1067-1074. | 5.2 | 94 |
| 117 | Water oxidation catalysed by quantum-sized BiVO_4 . Journal of Materials Chemistry A, 2018, 6, 24965-24970. | 5.2 | 10 |
| 118 | Open-circuit voltage deficit in $\text{Cu}_2\text{ZnSnS}_4$ solar cells by interface bandgap narrowing. Applied Physics Letters, 2018, 113, 212103. | 1.5 | 16 |
| 119 | Acoustic phonon lifetimes limit thermal transport in methylammonium lead iodide. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 11905-11910. | 3.3 | 81 |
| 120 | Oxidation states and ionicity. Nature Materials, 2018, 17, 958-964. | 13.3 | 135 |
| 121 | Hydrogen Bonding versus Entropy: Revealing the Underlying Thermodynamics of the Hybrid Organic-Inorganic Perovskite $[\text{CH}_3\text{NH}_3]\text{PbBr}_3$. Chemistry of Materials, 2018, 30, 8782-8788. | 3.2 | 29 |
| 122 | Stability and electronic properties of planar defects in quaternary I2-II-IV-VI4 semiconductors. Journal of Applied Physics, 2018, 124, 165705. | 1.1 | 5 |
| 123 | Preface for Special Topic: Earth abundant materials in solar cells. APL Materials, 2018, 6, . | 2.2 | 2 |
| 124 | An Unusual Phase Transition Driven by Vibrational Entropy Changes in a Hybrid Organic-Inorganic Perovskite. Angewandte Chemie, 2018, 130, 9070-9074. | 1.6 | 10 |
| 125 | An Unusual Phase Transition Driven by Vibrational Entropy Changes in a Hybrid Organic-Inorganic Perovskite. Angewandte Chemie - International Edition, 2018, 57, 8932-8936. | 7.2 | 46 |
| 126 | Prediction of multiband luminescence due to the gallium vacancy-oxygen defect complex in GaN. Applied Physics Letters, 2018, 112, . | 1.5 | 25 |

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|-----|---|------|-----------|
| 127 | Point defect engineering in thin-film solar cells. <i>Nature Reviews Materials</i> , 2018, 3, 194-210. | 23.3 | 275 |
| 128 | Giant Electron-Phonon Coupling and Deep Conduction Band Resonance in Metal Halide Double Perovskite. <i>ACS Nano</i> , 2018, 12, 8081-8090. | 7.3 | 190 |
| 129 | Breathing-Dependent Redox Activity in a Tetrathiafulvalene-Based Metal-Organic Framework. <i>Journal of the American Chemical Society</i> , 2018, 140, 10562-10569. | 6.6 | 62 |
| 130 | Machine learning for molecular and materials science. <i>Nature</i> , 2018, 559, 547-555. | 13.7 | 2,387 |
| 131 | Taking Control of Ion Transport in Halide Perovskite Solar Cells. <i>ACS Energy Letters</i> , 2018, 3, 1983-1990. | 8.8 | 158 |
| 132 | Role of electron-phonon coupling and thermal expansion on band gaps, carrier mobility, and interfacial offsets in kesterite thin-film solar cells. <i>Applied Physics Letters</i> , 2018, 112, . | 1.5 | 19 |
| 133 | Dynamic symmetry breaking and spin splitting in metal halide perovskites. <i>Physical Review B</i> , 2018, 98, . | 1.1 | 52 |
| 134 | Heterometallic perovskite-type metal-organic framework with an ammonium cation: structure, phonons, and optical response of $[\text{NH}_4]\text{Na}_{0.5}\text{Cr}_x\text{Al}_{0.5-x}(\text{HCOO})_3$ ($x = 0, 0.025$ and 0.5). <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 22284-22295. | 1.3 | 19 |
| 135 | Computational Design of Photovoltaic Materials. , 2018, , 176-197. | | 1 |
| 136 | Opposing effects of stacking faults and antisite domain boundaries on the conduction band edge in kesterite quaternary semiconductors. <i>Physical Review Materials</i> , 2018, 2, . | 0.9 | 15 |
| 137 | Deep vs shallow nature of oxygen vacancies and consequent n -type carrier concentrations in transparent conducting oxides. <i>Physical Review Materials</i> , 2018, 2, . | 0.9 | 73 |
| 138 | Perovskite-Inspired Photovoltaic Materials: Toward Best Practices in Materials Characterization and Calculations. <i>Chemistry of Materials</i> , 2017, 29, 1964-1988. | 3.2 | 116 |
| 139 | Self-Consistent Hybrid Functional Calculations: Implications for Structural, Electronic, and Optical Properties of Oxide Semiconductors. <i>Nanoscale Research Letters</i> , 2017, 12, 19. | 3.1 | 34 |
| 140 | The Steady Rise of Kesterite Solar Cells. <i>ACS Energy Letters</i> , 2017, 2, 776-779. | 8.8 | 189 |
| 141 | The Organic Secondary Building Unit: Strong Intermolecular π - π Interactions Define Topology in MIT-25, a Mesoporous MOF with Proton-Replete Channels. <i>Journal of the American Chemical Society</i> , 2017, 139, 3619-3622. | 6.6 | 72 |
| 142 | Chemical bonding at the metal-organic framework/metal oxide interface: simulated epitaxial growth of MOF-5 on rutile TiO_2 . <i>Journal of Materials Chemistry A</i> , 2017, 5, 6226-6232. | 5.2 | 18 |
| 143 | Chemical and Lattice Stability of the Tin Sulfides. <i>Journal of Physical Chemistry C</i> , 2017, 121, 6446-6454. | 1.5 | 73 |
| 144 | Is iron unique in promoting electrical conductivity in MOFs?. <i>Chemical Science</i> , 2017, 8, 4450-4457. | 3.7 | 176 |

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|-----|--|------|-----------|
| 145 | DFT investigation into the underperformance of sulfide materials in photovoltaic applications. <i>Journal of Materials Chemistry A</i> , 2017, 5, 9132-9140. | 5.2 | 19 |
| 146 | Trimethylsulfonium Lead Triiodide: An Air-Stable Hybrid Halide Perovskite. <i>Inorganic Chemistry</i> , 2017, 56, 6302-6309. | 1.9 | 52 |
| 147 | Electron Counting in Solids: Oxidation States, Partial Charges, and Ionicity. <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 2074-2075. | 2.1 | 65 |
| 148 | Lattice dynamics of the tin sulphides SnS_2 , SnS and Sn_2S_3 : vibrational spectra and thermal transport. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 12452-12465. | 1.3 | 187 |
| 149 | Vacuum-annealing induces sub-surface redox-states in surfactant-structured Fe_2O_3 photoanodes prepared by ink-jet printing. <i>Applied Catalysis B: Environmental</i> , 2017, 211, 289-295. | 10.8 | 14 |
| 150 | Demonstration of the donor characteristics of Si and O defects in GaN using hybrid QM/MM. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2017, 214, 1600445. | 0.8 | 16 |
| 151 | Designing porous electronic thin-film devices: band offsets and heteroepitaxy. <i>Faraday Discussions</i> , 2017, 201, 207-219. | 1.6 | 36 |
| 152 | Heterogeneous catalytic hydrogenation of CO_2 by metal oxides: defect engineering – perfecting imperfection. <i>Chemical Society Reviews</i> , 2017, 46, 4631-4644. | 18.7 | 304 |
| 153 | Perspective: Theory and simulation of hybrid halide perovskites. <i>Journal of Chemical Physics</i> , 2017, 146, 220901. | 1.2 | 111 |
| 154 | Electroactive Nanoporous Metal Oxides and Chalcogenides by Chemical Design. <i>Chemistry of Materials</i> , 2017, 29, 3663-3670. | 3.2 | 8 |
| 155 | Influence of Rb/Cs Cation-Exchange on Inorganic Sn Halide Perovskites: From Chemical Structure to Physical Properties. <i>Chemistry of Materials</i> , 2017, 29, 3181-3188. | 3.2 | 89 |
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