

James Neilson

List of Publications by Year in descending order

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papers

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136950

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times ranked

4999
citing authors

#	ARTICLE	IF	CITATIONS
1	Defect Tolerance to Intolerance in the Vacancy-Ordered Double Perovskite Semiconductors Cs ₂ Sn ₆ and Cs ₂ Tel ₆ . Journal of the American Chemical Society, 2016, 138, 8453-8464.	13.7	415
2	New Kagome prototype materials: discovery of KV_3 , and CsV_3 . Physical Review Materials, 2019, 3, .	2.4	398
3	Synthetic control over orientational degeneracy of spacer cations enhances solar cell efficiency in two-dimensional perovskites. Nature Communications, 2019, 10, 1276.	12.8	222
4	Perspectives and Design Principles of Vacancy-Ordered Double Perovskite Halide Semiconductors. Chemistry of Materials, 2019, 31, 1184-1195.	6.7	158
5	Iron displacements and magnetoelastic coupling in the antiferromagnetic spin-ladder compound BaFe ₂ Se ₃ . Physical Review B, 2011, 84, .	3.2	118
6	Possible valence-bond condensation in the frustrated cluster magnet LiZn ₂ Mo ₃ O ₈ . Nature Materials, 2012, 11, 493-496.	27.5	116
7	Tolerance Factor and Cooperative Tilting Effects in Vacancy-Ordered Double Perovskite Halides. Chemistry of Materials, 2018, 30, 3909-3919.	6.7	105
8	Anharmonicity and Octahedral Tilting in Hybrid Vacancy-Ordered Double Perovskites. Chemistry of Materials, 2018, 30, 472-483.	6.7	104
9	Universal Features of Terahertz Absorption in Disordered Materials. Physical Review Letters, 2006, 97, 055504.	7.8	94
10	Orbital-selective magnetism in the spin-ladder iron selenides BaK ₂ Fe ₂ Se ₄ . Physical Review B, 2011, 84, .	3.2	91
11	Hybrid Inorganic-Organic Materials with an Optoelectronically Active Aromatic Cation: (C ₇ H ₇) ₂ Sn ₆ and (C ₇ H ₇) ₃ Pb ₃ . Inorganic Chemistry, 2015, 54, 370-378.	4.0	86
12	Stacking Variants and Superconductivity in the Bi ₂ S System. Journal of the American Chemical Society, 2013, 135, 5372-5374.	13.7	80
13	Toward Reaction-by-Design: Achieving Kinetic Control of Solid State Chemistry with Metathesis. Chemistry of Materials, 2017, 29, 479-489.	6.7	78
14	Mixed-valence-driven heavy-fermion behavior and superconductivity in KNi ₂ Se ₂ . Physical Review B, 2012, 86, .	3.2	71
15	Aryl-Perfluoroaryl Interaction in Two-Dimensional Organic-Inorganic Hybrid Perovskites Boosts Stability and Photovoltaic Efficiency. , 2019, 1, 171-176.		63
16	Kinetic Control of Intralayer Cobalt Coordination in Layered Hydroxides: Co _{1/2} Co _{1/2} (OH) ₂ (Cl) _{1/2} (H ₂ O) _{1/2} . Inorganic Chemistry, 2009, 48, 11017-11023.	13.7	58
17	Block Magnetic Excitations in the Orbitaly Selective Mott Insulator BaFe ₂ Se ₃ . Physical Review Letters, 2015, 115, 047401.	7.8	56
18	Slow magnetic relaxation in octahedral low-spin Ni(III) complexes. Chemical Science, 2018, 9, 6564-6571.	7.4	53

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19	Bonding, Ion Mobility, and Rate-Limiting Steps in Deintercalation Reactions with ThCr_2Si_2 -type KNi_2Se_2 . <i>Journal of the American Chemical Society</i> , 2012, 134, 7750-7757.	13.7	51
20	Evolutionary selection of enzymatically synthesized semiconductors from biomimetic mineralization vesicles. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, E1705-14.	7.1	43
21	Charge density wave fluctuations, heavy electrons, and superconductivity in KNi_2S_2 . <i>Physical Review B</i> , 2013, 87, .	3.2	42
22	Circumventing Diffusion in Kinetically Controlled Solid-State Metathesis Reactions. <i>Journal of the American Chemical Society</i> , 2016, 138, 11031-11037.	13.7	42
23	Magnetic Structures of LiMBO_3 (M = Mn, Fe, Co) Lithiated Transition Metal Borates. <i>Inorganic Chemistry</i> , 2013, 52, 11966-11974.	4.0	38
24	Polymorph Selectivity of Superconducting CuSe_2 Through Kinetic Control of Solid-State Metathesis. <i>Journal of the American Chemical Society</i> , 2015, 137, 3827-3833.	13.7	38
25	Selective Formation of Yttrium Manganese Oxides through Kinetically Competent Assisted Metathesis Reactions. <i>Journal of the American Chemical Society</i> , 2019, 141, 1191-1195.	13.7	38
26	Cesium Substitution Disrupts Concerted Cation Dynamics in Formamidinium Hybrid Perovskites. <i>Chemistry of Materials</i> , 2020, 32, 6266-6277.	6.7	38
27	General Synthesis Principles for Ruddlesden-Popper Hybrid Perovskite Halides from a Dynamic Equilibrium. <i>Chemistry of Materials</i> , 2018, 30, 8606-8614.	6.7	37
28	Hybrid Charge-Transfer Semiconductors: $(\text{C}_7\text{H}_7\text{Sb})_4$, $(\text{C}_7\text{H}_7\text{Bi})_4$, and Their Halide Congeners. <i>Inorganic Chemistry</i> , 2019, 58, 5818-5826.	4.0	37
29	Correlating Broadband Photoluminescence with Structural Dynamics in Layered Hybrid Halide Perovskites. <i>Journal of the American Chemical Society</i> , 2022, 144, 1313-1322.	13.7	37
30	Orientalional Glass Formation in Substituted Hybrid Perovskites. <i>Chemistry of Materials</i> , 2017, 29, 10168-10177.	6.7	36
31	Dynamical Phase Transitions and Cation Orientation-Dependent Photoconductivity in $\text{CH}_2\text{N}_2\text{PbBr}_3$. , 2019, 1, 260-264.		35
32	Nanostructured p-type cobalt layered double hydroxide/n-type polymer bulk heterojunction yields an inexpensive photovoltaic cell. <i>Thin Solid Films</i> , 2009, 517, 5722-5727.	1.8	34
33	Ternary Nitride Materials: Fundamentals and Emerging Device Applications. <i>Annual Review of Materials Research</i> , 2021, 51, 591-618.	9.3	34
34	Pyrite Formation via Kinetic Intermediates through Low-Temperature Solid-State Metathesis. <i>Journal of the American Chemical Society</i> , 2014, 136, 15654-15659.	13.7	32
35	Cobalt Coordination and Clustering in $\text{Co}(\text{OH})_2$ Revealed by Synchrotron X-ray Total Scattering. <i>Chemistry - A European Journal</i> , 2010, 16, 9998-10006.	3.3	31
36	Fabrication of nano-gratings in arsenic sulphide films. <i>Journal of Non-Crystalline Solids</i> , 2007, 353, 1427-1430.	3.1	30

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37	Structural Characteristics and Eutaxy in the Photo-Deposited Amorphous Iron Oxide Oxygen Evolution Catalyst. Chemistry of Materials, 2015, 27, 3462-3470.	6.7	28
38	Novel Strongly Spin-Orbit Coupled Quantum Dimer Magnet: Yb_2O_7 . Physical Review Letters, 2019, 123, 027201.	7.8	18
39	Understanding complex magnetic order in disordered cobalt hydroxides through analysis of the local structure. Physical Review B, 2011, 83, .	3.2	27
40	Bond valences and anharmonicity in vacancy-ordered double perovskite halides. Journal of Materials Chemistry C, 2018, 6, 12095-12104.	5.5	27
41	Kinetically Controlled Low-Temperature Solid-State Metathesis of Manganese Nitride Mn_3N_2 . Chemistry of Materials, 2019, 31, 7248-7254.	6.7	26
42	Selectivity in Yttrium Manganese Oxide Synthesis via Local Chemical Potentials in Hyperdimensional Phase Space. Journal of the American Chemical Society, 2021, 143, 15185-15194.	13.7	25
43	Comparative study of electron- and photo-induced structural transformations on the surface of As ₃₅ S ₆₅ amorphous thin films. Thin Solid Films, 2008, 516, 7511-7518.	1.8	23
44	Nanostructured ZnS and CdS Films Synthesized using Layered Double Hydroxide Films as Precursor and Template. Inorganic Chemistry, 2009, 48, 1542-1550.	4.0	22
45	Defect-Accommodating Intermediates Yield Selective Low-Temperature Synthesis of YMnO_3 Polymorphs. Inorganic Chemistry, 2020, 59, 13639-13650.	4.0	22
46	Cation Dynamics in Hybrid Halide Perovskites. Annual Review of Materials Research, 2021, 51, 269-291.	9.3	21
47	Vapor-Diffusion-Controlled Sol-Gel Synthesis of Flaky Lithium Vanadium Oxide and Its Electrochemical Behavior. Journal of Physical Chemistry C, 2010, 114, 19550-19555.	3.1	20
48	Validation of non-negative matrix factorization for rapid assessment of large sets of atomic pair distribution function data. Journal of Applied Crystallography, 2021, 54, 768-775.	4.5	20
49	A thermal-gradient approach to variable-temperature measurements resolved in space. Journal of Applied Crystallography, 2020, 53, 662-670.	4.5	19
50	Combinatorial appraisal of transition states for <i>in situ</i> pair distribution function analysis. Journal of Applied Crystallography, 2017, 50, 1744-1753.	4.5	18
51	Ordering Double Perovskite Hydroxides by Kinetically Controlled Aqueous Hydrolysis. Inorganic Chemistry, 2011, 50, 3003-3009.	4.0	17
52	Paracrystalline Disorder from Phosphate Ion Orientation and Substitution in Synthetic Bone Mineral. Inorganic Chemistry, 2016, 55, 12290-12298.	4.0	17
53	Lewis Base Mediated Polymorph Selectivity of Pyrite CuSe_2 through Atom Transfer in Solid-State Metathesis. Chemistry of Materials, 2016, 28, 1854-1860.	6.7	15
54	Representational analysis of extended disorder in atomistic ensembles derived from total scattering data. Journal of Applied Crystallography, 2015, 48, 1560-1572.	4.5	14

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55	Electronic tunability of the frustrated triangular-lattice cluster magnet $\text{LiZn}_2\text{Mo}_3\text{O}_8$. <i>Materials Horizons</i> , 2015, 2, 76-80.	12.2	14
56	Lowering Ternary Oxide Synthesis Temperatures by Solid-State Cometathesis Reactions. <i>Chemistry of Materials</i> , 2021, 33, 3692-3701.	6.7	14
57	Electric field modulated topological magnetoelectric effect in Bi_2Te_3 . <i>Physical Review B</i> , 2018, 98, .	11.3	13
58	Yttrium Manganese Oxide Phase Stability and Selectivity Using Lithium Carbonate Assisted Metathesis Reactions. <i>Inorganic Chemistry</i> , 2019, 58, 15166-15174.	4.0	13
59	On the mechanism of gray scale patterning of Ag-containing As_2S_3 thin films. <i>Journal of Physics and Chemistry of Solids</i> , 2007, 68, 920-925.	4.0	12
60	Influence of interstitial Mn on local structure and magnetism in Mn_2O_3 . <i>Physical Review B</i> , 2015, 92, .	11.2	12
61	Capturing the Details of N_2 Adsorption in Zeolite X Using Stroboscopic Isotope Contrasted Neutron Total Scattering. <i>Chemistry of Materials</i> , 2018, 30, 296-302.	6.7	12
62	Influence of organic cation planarity on structural templating in hybrid metal-halides. <i>Dalton Transactions</i> , 2019, 48, 16340-16349.	3.3	12
63	Bulk Synthesis, Structure, and Electronic Properties of Magnesium Zirconium Nitride Solid Solutions. <i>Chemistry of Materials</i> , 2021, 33, 5345-5354.	6.7	11
64	Nanosized helical magnetic domains in strongly frustrated $\text{Fe}_3\text{PO}_4\text{O}_3$. <i>Physical Review B</i> , 2015, 92, .	3.2	10
65	Amide-Assisted Synthesis of Iron Germanium Sulfide (Fe_2GeS_4) Nanostars: The Effect of $\text{LiN}(\text{SiMe}_3)_2$ on Precursor Reactivity for Favoring Nanoparticle Nucleation or Growth. <i>Journal of the American Chemical Society</i> , 2020, 142, 7023-7035.	13.7	10
66	Quantifying Capacitive-Like and Battery-Like Charge Storage Contributions Using Single-Nanoparticle Electro-Optical Imaging. <i>ChemElectroChem</i> , 2020, 7, 753-760.	3.4	10
67	A high precision gas flow cell for performing in situ neutron studies of local atomic structure in catalytic materials. <i>Review of Scientific Instruments</i> , 2017, 88, 034101.	1.3	9
68	Unusual Evolution of Ceria Nanocrystal Morphologies Promoted by a Low-Temperature Vapor Diffusion Based Process. <i>Crystal Growth and Design</i> , 2010, 10, 4485-4490.	3.0	8
69	Dynamic charge disproportionation in the 1D chain material PdTe . <i>Journal of Materials Chemistry C</i> , 2014, 2, 3238-3246.	5.5	8
70	Hydrothermal Crystal Growth of Mixed Valence Cs_2SbBr_6 . <i>Crystal Growth and Design</i> , 2019, 19, 4090-4094.	3.0	8
71	Effects of point defects on the mechanical response of LaRu_2P_2 . <i>Acta Materialia</i> , 2018, 160, 224-234.	7.9	7
72	Two-Step Solid-State Synthesis of Ternary Nitride Materials. , 2021, 3, 1677-1683.		7

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73	Structure and Optical Properties of Layered Perovskite (MA) ₂ PbI ₂ xBr _x (SCN) ₂ (0 ≤ x < 1.6). Inorganic Chemistry, 2020, 59, 17379-17384.	4.0	6
74	<i>nmfMapping</i> : a cloud-based web application for non-negative matrix factorization of powder diffraction and pair distribution function datasets. Acta Crystallographica Section A: Foundations and Advances, 2022, 78, 242-248.	0.1	6
75	Mesostructure from Hydration Gradients in Demosponge Biosilica. Chemistry - A European Journal, 2014, 20, 4956-4965.	3.3	4
76	Modeling pseudo-elastic behavior in small-scale ThCr ₂ Si ₂ -type crystals. Computational Materials Science, 2018, 150, 86-95.	3.0	4
77	Reaction Selectivity in Cometathesis: Yttrium Manganese Oxides. Chemistry of Materials, 2022, 34, 4694-4702.	6.7	4
78	Ferroelastic Phase Transition in Formamidinium Tin(IV) Iodide Driven by Organic-Inorganic Coupling. Inorganic Chemistry, 2020, 59, 14399-14406.	4.0	3
79	Partial antiferromagnetic helical order in single-crystal Fe ₃ PO ₄ O ₃ . Physical Review B, 2020, 101, .	3.2	3
80	Dynamical Bond Formation in KNi ₂ Se ₂ . Zeitschrift Fur Anorganische Und Allgemeine Chemie, 0, , .	1.2	3
81	Thin-Film Paradigm to Probe Interfacial Diffusion during Solid-State Metathesis Reactions. Chemistry of Materials, 2022, 34, 6279-6287.	6.7	3
82	Tuning the antiferromagnetic helical pitch length and nanoscale domain size in Fe ₃ PO ₄ O ₃ by magnetic dilution. Physical Review B, 2017, 96, .	3.2	2
83	Catalytic behavior of hexaphenyldisiloxane in the synthesis of pyrite FeS ₂ . Chemical Communications, 2020, 56, 9186-9189.	4.1	2
84	Trigonal polymorph of LiMn_2O_3 . Physical Review Materials, 2020, 4, .	2.1	2
85	Metathesis routes to materials. , 2023, , 24-39.		2
86	Cd _{1-x} Zn _x O [0.05 ≤ x ≤ 0.26] synthesized by vapor-diffusion induced hydrolysis and co-nucleation from aqueous metal salt solutions. Dalton Transactions, 2011, 40, 1295.	3.3	1
87	Low-temperature synthesis of superconducting iron selenide using a triphenylphosphine flux. Dalton Transactions, 2019, 48, 16298-16303.	3.3	1
88	Organic cation dynamics in hybrid halide perovskite semiconductors. Neutron News, 2021, 32, 11-12.	0.2	1
89	Optimized in situ crystal growth and disordered quasi-one-dimensional magnetism in Li ₂ Mn ₂ (MoO ₄) ₃ . Physical Review Materials, 2020, 4, .	2.4	1
90	Temperature-induced structural transition in an organic-inorganic hybrid layered perovskite (MA) ₂ PbI ₂ Br(SCN) ₂ . CrystEngComm, 2022, 24, 5428-5434.	2.6	1

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91	Correction to Dynamical Phase Transitions and Cation Orientation-Dependent Photoconductivity in $\text{CH}(\text{NH}_2)_2\text{PbBr}_3$. , 2019, 1, 481-481.		0
92	Correlating Broadband Photoluminescence with Organic Cation Dynamics. , 0, , .		0