A Alec Talin

List of Publications by Year
in descending order

71 papers	8,446 citations	117453 34 h-index	91712 69 g-index
72 all docs	72 docs citations	72 times ranked	11558 citing authors

#	Article	IF	Citations
1	A non-volatile organic electrochemical device as a low-voltage artificial synapse for neuromorphic computing. Nature Materials, 2017, 16, 414-418.	13.3	1,234
2	MOF-based electronic and opto-electronic devices. Chemical Society Reviews, 2014, 43, 5994-6010.	18.7	1,145
3	Tunable Electrical Conductivity in Metal-Organic Framework Thin-Film Devices. Science, 2014, 343, 66-69.	6.0	1,061
4	Parallel programming of an ionic floating-gate memory array for scalable neuromorphic computing. Science, 2019, 364, 570-574.	6.0	484
5	Stress-Induced Chemical Detection Using Flexible Metalâ"Organic Frameworks. Journal of the American Chemical Society, 2008, 130, 14404-14405.	6.6	469
6	Liâ€Ion Synaptic Transistor for Low Power Analog Computing. Advanced Materials, 2017, 29, 1604310.	11.1	425
7	Allâ€Solidâ€State Synaptic Transistor with Ultralow Conductance for Neuromorphic Computing. Advanced Functional Materials, 2018, 28, 1804170.	7.8	335
8	Thin Film Thermoelectric Metalâ€"Organic Framework with High Seebeck Coefficient and Low Thermal Conductivity. Advanced Materials, 2015, 27, 3453-3459.	11.1	227
9	High-contrast and fast electrochromic switching enabled by plasmonics. Nature Communications, 2016, 7, 10479.	5.8	226
10	Carbon Nanotube Terahertz Detector. Nano Letters, 2014, 14, 3953-3958.	4.5	223
11	Liquidâ€Like Ionic Conduction in Solid Lithium and Sodium Monocarbaâ€closoâ€Decaborates Near or at Room Temperature. Advanced Energy Materials, 2016, 6, 1502237.	10.2	190
12	A Microporous and Naturally Nanostructured Thermoelectric Metal-Organic Framework with Ultralow Thermal Conductivity. Joule, 2017, 1, 168-177.	11.7	159
13	Guest-Induced Emergent Properties in Metalâ€"Organic Frameworks. Journal of Physical Chemistry Letters, 2015, 6, 1182-1195.	2.1	150
14	Nanoscale Solid State Batteries Enabled by Thermal Atomic Layer Deposition of a Lithium Polyphosphazene Solid State Electrolyte. Chemistry of Materials, 2017, 29, 3740-3753.	3.2	122
15	Electrolyte Stability Determines Scaling Limits for Solid-State 3D Li Ion Batteries. Nano Letters, 2012, 12, 505-511.	4.5	121
16	Superlinear Composition-Dependent Photocurrent in CVD-Grown Monolayer MoS_{2(1â€"x)}Se_{2x} Alloy Devices. Nano Letters, 2015, 15, 2612-2619.	4.5	118
17	Roadmap on emerging hardware and technology for machine learning. Nanotechnology, 2021, 32, 012002.	1.3	104
18	Fabrication, Testing, and Simulation of All-Solid-State Three-Dimensional Li-Ion Batteries. ACS Applied Materials & Interfaces, 2016, 8, 32385-32391.	4.0	99

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19	Three-Dimensional Solid-State Lithium-Ion Batteries Fabricated by Conformal Vapor-Phase Chemistry. ACS Nano, 2018, 12, 4286-4294.	7.3	96
20	Nanophotonic Atomic Force Microscope Transducers Enable Chemical Composition and Thermal Conductivity Measurements at the Nanoscale. Nano Letters, 2017, 17, 5587-5594.	4.5	93
21	Filamentâ€Free Bulk Resistive Memory Enables Deterministic Analogue Switching. Advanced Materials, 2020, 32, e2003984.	11.1	83
22	Low-Voltage, CMOS-Free Synaptic Memory Based on Li_XTiO₂ Redox Transistors. ACS Applied Materials & Interfaces, 2019, 11, 38982-38992.	4.0	78
23	High electrical conductivity and high porosity in a Guest@MOF material: evidence of TCNQ ordering within Cu₃BTC₂ micropores. Chemical Science, 2018, 9, 7405-7412.	3.7	73
24	Unraveling the Semiconducting/Metallic Discrepancy in Ni₃(HITP)₂. Journal of Physical Chemistry Letters, 2018, 9, 481-486.	2.1	70
25	Dynamic Tuning of Gap Plasmon Resonances Using a Solid-State Electrochromic Device. Nano Letters, 2019, 19, 7988-7995.	4.5	65
26	Orderâ€“Disorder Transitions and Superionic Conductivity in the Sodium nido-Undeca(carba)borates. Chemistry of Materials, 2017, 29, 10496-10509.	3.2	53
27	Optimized pulsed write schemes improve linearity and write speed for low-power organic neuromorphic devices. Journal Physics D: Applied Physics, 2018, 51, 224002.	1.3	53
28	Figure of Merit for Carbon Nanotube Photothermoelectric Detectors. ACS Nano, 2015, 9, 11618-11627.	7.3	51
29	From Microparticles to Nanowires and Back: Radical Transformations in Plated Li Metal Morphology Revealed via in Situ Scanning Electron Microscopy. Nano Letters, 2018, 18, 1644-1650.	4.5	47
30	Hybrid Polymer/Metalâ€“Organic Framework Films for Colorimetric Water Sensing over a Wide Concentration Range. ACS Applied Materials & Interfaces, 2018, 10, 24201-24208.	4.0	46
31	Nanometer-resolved spatial variations in the Schottky barrier height of a Au/n-type GaAs diode. Physical Review B, 1994, 49, 16474-16479.	1.1	45
32	Evaluation of The Electrochemo-Mechanically Induced Stress in All-Solid-State Li-Ion Batteries. Journal of the Electrochemical Society, 2020, 167, 090541.	1.3	43
33	Insights into capacity loss mechanisms of all-solid-state Li-ion batteries with Al anodes. Journal of Materials Chemistry A, 2014, 2, 20552-20559.	5.2	39
34	Achieving ideal accuracies in analog neuromorphic computing using periodic carry. , 2017, , .		39
35	Pooleâ"Frenkel Effect and Phonon-Assisted Tunneling in GaAs Nanowires. Nano Letters, 2010, 10, 4935-4938.	4.5	37
36	High-Performance Solid-State Lithium-Ion Battery with Mixed 2D and 3D Electrodes. ACS Applied Energy Materials, 2020, 3, 8402-8409.	2.5	35

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37	Electrochemical Modeling of GITT Measurements for Improved Solid-State Diffusion Coefficient Evaluation. ACS Applied Energy Materials, 2021, 4, 11460-11469.	2.5	34
38	Kineticsâ€Controlled Degradation Reactions at Crystalline LiPON/Li_xCoO₂ and Crystalline LiPON/Liâ€Metal Interfaces. ChemSusChem, 2018, 11, 1956-1969.	3.6	32
39	Correction: An updated roadmap for the integration of metalâ€“organic frameworks with electronic devices and chemical sensors. Chemical Society Reviews, 2017, 46, 3853-3853.	18.7	30
40	Two-dimensional metalâ€“organic frameworks with high thermoelectric efficiency through metal ion selection. Physical Chemistry Chemical Physics, 2017, 19, 19461-19467.	1.3	30
41	Surface Morphology and Electrical Properties of Cu₃BTC₂ Thin Films Before and After Reaction with TCNQ. ACS Applied Materials & Interfaces, 2018, 10, 39400-39410.	4.0	30
42	Redox transistors for neuromorphic computing. IBM Journal of Research and Development, 2019, 63, 9:1-9:9.	3.2	28
43	Surface/Interface Effects on High-Performance Thin-Film All-Solid-State Li-Ion Batteries. ACS Applied Materials & Interfaces, 2015, 7, 26007-26011.	4.0	26
44	Metalâ€“organic frameworks for thermoelectric energy-conversion applications. MRS Bulletin, 2016, 41, 877-882.	1.7	26
45	Efficient Electronic Tunneling Governs Transport in Conducting Polymer-Insulator Blends. Journal of the American Chemical Society, 2022, 144, 10368-10376.	6.6	26
46	In situ Parallel Training of Analog Neural Network Using Electrochemical Random-Access Memory. Frontiers in Neuroscience, 2021, 15, 636127.	1.4	24
47	Origami Terahertz Detectors Realized by Inkjet Printing of Carbon Nanotube Inks. ACS Applied Nano Materials, 2020, 3, 2920-2927.	2.4	18
48	Spatially Resolved Potential and Li-Ion Distributions Reveal Performance-Limiting Regions in Solid-State Batteries. ACS Energy Letters, 2021, 6, 3944-3951.	8.8	18
49	Proton irradiation effects on minority carrier diffusion length and defect introduction in homoepitaxial and heteroepitaxial n-GaN. Journal of Applied Physics, 2017, 122, .	1.1	17
50	Ultralow Voltage GaN Vacuum Nanodiodes in Air. Nano Letters, 2021, 21, 1928-1934.	4.5	17
51	The Role of Electrolyte Composition in Enabling Li Metalâ€Iron Fluoride Fullâ€Cell Batteries. Advanced Science, 2022, 9, e2105803.	5.6	17
52	Tin Oxynitride Anodes by Atomic Layer Deposition for Solid-State Batteries. Chemistry of Materials, 2018, 30, 2526-2534.	3.2	16
53	Understanding the Electrochemical Performance of FeS₂ Conversion Cathodes. ACS Applied Materials & Interfaces, 2022, 14, 26604-26611.	4.0	13
54	Microscale 2.5D Batteries. Journal of the Electrochemical Society, 2017, 164, A2500-A2503.	1.3	12

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55	Strong Photothermoelectric Response and Contact Reactivity of the Dirac Semimetal ZrTe₅. ACS Applied Materials & Interfaces, 2017, 9, 37041-37047.	4.0	11
56	From n- to p-Type Material: Effect of Metal Ion on Charge Transport in Metalâ€“Organic Materials. ACS Applied Materials & Interfaces, 2021, 13, 52055-52062.	4.0	10
57	Fabrication and field emission properties of vertical, tapered GaN nanowires etched via phosphoric acid. Nanotechnology, 2022, 33, 035301.	1.3	9
58	Investigating Heavy-Ion Effects on 14-nm Process FinFETs: Displacement Damage Versus Total Ionizing Dose. IEEE Transactions on Nuclear Science, 2021, 68, 724-732.	1.2	8
59	Imaging the Impact of Proton Irradiation on Edge Terminations in Vertical GaN PIN Diodes. IEEE Electron Device Letters, 2017, 38, 945-948.	2.2	7
60	Thermoelectric Properties of 2D Ni₃(hitp)₂and 3D Cu₃(btc)₂MOFs: First-Principles Studies. ECS Journal of Solid State Science and Technology, 2017, 6, N236-N242.	0.9	7
61	In Situ UVâ€“Vis Analysis of Polysulfide Shuttling in Ionic Liquid-Based Li-FeS₂ Batteries. Journal of Physical Chemistry C, 2022, 126, 5101-5111.	1.5	7
62	Temperature-Dependent Reaction Pathways in FeS₂: Reversibility and the Electrochemical Formation of Fe₃S₄. Chemistry of Materials, 2022, 34, 5422-5432.	3.2	7
63	Light modulation with nanopatterned diffractive microelectromechanical system pixels. Journal of Vacuum Science & Technology B, 2008, 26, 2139-2144.	1.3	6
64	Scanning ultrafast electron microscopy reveals photovoltage dynamics at a deeply buried <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>p</mml:mi><mml:mtext>â^’</mml:mtext><mml:mi>Si</mml:mi></mathvariant="normal">O</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> interface. Physical Review B, 2021, 104, .	1.1	6
65	Thermoelectric Properties of 2D Ni3(HITP)2and 3D Cu3(BTC)2MOFs: First-Principles Studies. ECS Transactions, 2017, 80, 47-56.	0.3	5
66	Carrier Diffusion Lengths in Continuously Grown and Etched-and-Regrown GaN Pin Diodes. IEEE Electron Device Letters, 2021, 42, 1041-1044.	2.2	3
67	Single-Event Effects Induced by Heavy Ions in SONOS Charge Trapping Memory Arrays. IEEE Transactions on Nuclear Science, 2022, 69, 406-413.	1.2	3
68	Ionizing Radiation Effects in SONOS-Based Neuromorphic Inference Accelerators. IEEE Transactions on Nuclear Science, 2021, 68, 762-769.	1.2	2
69	Physical Compact Model for Threeâ€Terminal SONOS Synaptic Circuit Element. Advanced Intelligent Systems, 2022, 4, .	3.3	2
70	Identification of localized radiation damage in power MOSFETs using EBIC imaging. Applied Physics Letters, 2021, 118, .	1.5	1
71	High-resolution planar electron beam induced current in bulk diodes using high-energy electrons. Applied Physics Letters, 2021, 119, 014103.	1.5	0