Neil P Dasgupta

List of Publications by Year
in descending order

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76	7,925	93792	90395
papers	citations	39	73
		h-index	g-index

79	79	79	12066
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	25th Anniversary Article: Semiconductor Nanowires â€“ Synthesis, Characterization, and Applications. Advanced Materials, 2014, 26, 2137-2184.	11.1	759
2	Dead lithium: mass transport effects on voltage, capacity, and failure of lithium metal anodes. Journal of Materials Chemistry A, 2017, 5, 11671-11681.	5.2	693
3	Dendrites and Pits: Untangling the Complex Behavior of Lithium Metal Anodes through Operando Video Microscopy. ACS Central Science, 2016, 2, 790-801.	5.3	662
4	Surface Chemistry Mechanism of Ultra-Low Interfacial Resistance in the Solid-State Electrolyte Li₇La₃Zr₂O₁₂. Chemistry of Materials, 2017, 29, 7961-7968.	3.2	612
5	Lithium Metal Anodes: Toward an Improved Understanding of Coupled Morphological, Electrochemical, and Mechanical Behavior. ACS Energy Letters, 2017, 2, 664-672.	8.8	434
6	Challenges in Lithium Metal Anodes for Solid-State Batteries. ACS Energy Letters, 2020, 5, 922-934.	8.8	322
7	Semiconductor Nanowires for Artificial Photosynthesis. Chemistry of Materials, 2014, 26, 415-422.	3.2	314
8	Improved Cycle Life and Stability of Lithium Metal Anodes through Ultrathin Atomic Layer Deposition Surface Treatments. Chemistry of Materials, 2015, 27, 6457-6462.	3.2	299
9	Atomic Layer Deposition of Platinum Catalysts on Nanowire Surfaces for Photoelectrochemical Water Reduction. Journal of the American Chemical Society, 2013, 135, 12932-12935.	6.6	256
10	Li Penetration in Ceramic Solid Electrolytes: Operando Microscopy Analysis of Morphology, Propagation, and Reversibility. Matter, 2020, 2, 1025-1048.	5.0	240
11	Lithium Mechanics: Roles of Strain Rate and Temperature and Implications for Lithium Metal Batteries. Journal of the Electrochemical Society, 2019, 166, A89-A97.	1.3	221
12	Bioinspired Bifunctional Membrane for Efficient Clean Water Generation. ACS Applied Materials & Interfaces, 2016, 8, 772-779.	4.0	187
13	Atomic Layer Deposition of Metal Sulfide Materials. Accounts of Chemical Research, 2015, 48, 341-348.	7.6	178
14	Efficient fast-charging of lithium-ion batteries enabled by laser-patterned three-dimensional graphite anode architectures. Journal of Power Sources, 2020, 471, 228475.	4.0	168
15	Atomic Layer Deposition of the Solid Electrolyte Garnet Li₇La₃Zr₂O₁₂. Chemistry of Materials, 2017, 29, 3785-3792.	3.2	149
16	Atomic Layer Deposition of Al-doped ZnO Films: Effect of Grain Orientation on Conductivity. Chemistry of Materials, 2010, 22, 4769-4775.	3.2	147
17	Synergistic Effect of 3D Current Collectors and ALD Surface Modification for High Coulombic Efficiency Lithium Metal Anodes. Advanced Energy Materials, 2019, 9, 1802534.	10.2	132
18	Enabling 6C Fast Charging of Liâ€ion Batteries with Graphite/Hard Carbon Hybrid Anodes. Advanced Energy Materials, 2021, 11, 2003336.	10.2	116

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19	Coreâ€“Shell CdSâ€“Cu₂S Nanorod Array Solar Cells. Nano Letters, 2015, 15, 4096-4101.	4.5	114
20	ALD for clean energy conversion, utilization, and storage. MRS Bulletin, 2011, 36, 899-906.	1.7	109
21	Transitioning solid-state batteries from lab to market: Linking electro-chemo-mechanics with practical considerations. Joule, 2021, 5, 1371-1390.	11.7	92
22	Atomic Layer Deposition of Lead Sulfide Quantum Dots on Nanowire Surfaces. Nano Letters, 2011, 11, 934-940.	4.5	84
23	Plan-View Operando Video Microscopy of Li Metal Anodes: Identifying the Coupled Relationships among Nucleation, Morphology, and Reversibility. ACS Energy Letters, 2020, 5, 994-1004.	8.8	82
24	Challenges and Opportunities for Fast Charging of Solid-State Lithium Metal Batteries. ACS Energy Letters, 2021, 6, 3734-3749.	8.8	76
25	Recent Advances in Atomic Layer Deposition. Chemistry of Materials, 2016, 28, 1943-1947.	3.2	72
26	Charging sustainable batteries. Nature Sustainability, 2022, 5, 176-178.	11.5	70
27	Operando analysis of the molten Li|LLZO interface: Understanding how the physical properties of Li affect the critical current density. Matter, 2021, 4, 1947-1961.	5.0	62
28	Electro-chemo-mechanical evolution of sulfide solid electrolyte/Li metal interfaces: operando analysis and ALD interlayer effects. Journal of Materials Chemistry A, 2020, 8, 6291-6302.	5.2	61
29	Design of an atomic layer deposition reactor for hydrogen sulfide compatibility. Review of Scientific Instruments, 2010, 81, 044102.	0.6	59
30	Atomic Layer Deposition of Lead Sulfide Thin Films for Quantum Confinement. Chemistry of Materials, 2009, 21, 3973-3978.	3.2	58
31	Area-Selective Atomic Layer Deposition of Lead Sulfide: Nanoscale Patterning and DFT Simulations. Langmuir, 2010, 26, 6845-6852.	1.6	55
32	Rational Design of Hyperbranched Nanowire Systems for Tunable Superomniphobic Surfaces Enabled by Atomic Layer Deposition. ACS Nano, 2017, 11, 478-489.	7.3	54
33	Biotemplated Morpho Butterfly Wings for Tunable Structurally Colored Photocatalysts. ACS Applied Materials & Interfaces, 2018, 10, 4614-4621.	4.0	54
34	Operando video microscopy of Li plating and re-intercalation on graphite anodes during fast charging. Journal of Materials Chemistry A, 2021, 9, 23522-23536.	5.2	54
35	Epitaxially Aligned Cuprous Oxide Nanowires for All-Oxide, Single-Wire Solar Cells. Nano Letters, 2014, 14, 4665-4670.	4.5	52
36	Uniform Doping of Metal Oxide Nanowires Using Solid State Diffusion. Journal of the American Chemical Society, 2014, 136, 10521-10526.	6.6	50

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37	Semiconductor nanowires for photovoltaic and photoelectrochemical energy conversion. Frontiers of Physics, 2014, 9, 289-302.	2.4	49
38	Atomic layer deposition and first principles modeling of glassy Li₃BO₃â€“Li₂CO₃ electrolytes for solid-state Li metal batteries. Journal of Materials Chemistry A, 2018, 6, 19425-19437.	5.2	48
39	Evolution of Dead Lithium Growth in Lithium Metal Batteries: Experimentally Validated Model of the Apparent Capacity Loss. Journal of the Electrochemical Society, 2019, 166, A3456-A3463.	1.3	45
40	Enabling 4C Fast Charging of Lithiumâ€Ion Batteries by Coating Graphite with a Solidâ€State Electrolyte. Advanced Energy Materials, 2022, 12, .	10.2	42
41	Hierarchical ZnO Nanowire Growth with Tunable Orientations on Versatile Substrates Using Atomic Layer Deposition Seeding. Chemistry of Materials, 2015, 27, 4799-4807.	3.2	38
42	Area-Selective Atomic Layer Deposition Patterned by Electrohydrodynamic Jet Printing for Additive Manufacturing of Functional Materials and Devices. ACS Nano, 2020, 14, 17262-17272.	7.3	33
43	Electrochemical and Surface Chemistry Analysis of Lithium Lanthanum Zirconium Tantalum Oxide (LLZTO)/Liquid Electrolyte (LE) Interfaces. Journal of Power Sources, 2020, 474, 228598.	4.0	33
44	Highâ€Performance Zinc Tin Oxide TFTs with Active Layers Deposited by Atomic Layer Deposition. Advanced Electronic Materials, 2020, 6, 2000195.	2.6	33
45	Rate Limitations in Composite Solid-State Battery Electrodes: Revealing Heterogeneity with Operando Microscopy. ACS Energy Letters, 2021, 6, 2993-3003.	8.8	33
46	Operando Analysis of Interphase Dynamics in Anode-Free Solid-State Batteries with Sulfide Electrolytes. Journal of the Electrochemical Society, 2021, 168, 070557.	1.3	30
47	Quantifying Geometric Strain at the PbS QD-TiO₂ Anode Interface and Its Effect on Electronic Structures. Nano Letters, 2015, 15, 7829-7836.	4.5	29
48	Atomic Layer Deposition of Bismuth Vanadate Coreâ€“Shell Nanowire Photoanodes. Chemistry of Materials, 2019, 31, 3221-3227.	3.2	27
49	Molecular layer deposition of Li-ion conducting â€œLithiconeâ€•solid electrolytes. Chemical Communications, 2020, 56, 15537-15540.	2.2	26
50	In Situ Cycle-by-Cycle Flash Annealing of Atomic Layer Deposited Materials. Journal of Physical Chemistry C, 2012, 116, 24177-24183.	1.5	24
51	Elucidating the Evolving Atomic Structure in Atomic Layer Deposition Reactions with in Situ XANES and Machine Learning. Chemistry of Materials, 2019, 31, 8937-8947.	3.2	23
52	Nickel Silicide Nanowire Arrays for Antiâ€Reflective Electrodes in Photovoltaics. Advanced Functional Materials, 2012, 22, 3650-3657.	7.8	22
53	Operando detection of Li plating during fast charging of Li-ion batteries using incremental capacity analysis. Journal of Power Sources, 2022, 539, 231601.	4.0	21
54	Rational Design of Transparent Nanowire Architectures with Tunable Geometries for Preventing Marine Fouling. Advanced Materials Interfaces, 2020, 7, 2000672.	1.9	19

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55	Scanning tunneling spectroscopy of lead sulfide quantum wells fabricated by atomic layer deposition. Nanotechnology, 2010, 21, 485402.	1.3	18
56	Enhanced Interfacial Toughness of Thermoplasticâ€“Epoxy Interfaces Using ALD Surface Treatments. ACS Applied Materials & Interfaces, 2019, 11, 43573-43580.	4.0	17
57	Lithium stripping: anisotropic evolution and faceting of pits revealed byoperando3-D microscopy. Journal of Materials Chemistry A, 2021, 9, 21013-21023.	5.2	17
58	Causes of the Difference Between Hall Mobility and Field-Effect Mobility for p-Type RF Sputtered Cuâ‚‚O Thin-Film Transistors. IEEE Transactions on Electron Devices, 2020, 67, 5557-5563.	1.6	17
59	Atomic Layer Deposition for Energy and Environmental Applications. Advanced Materials Interfaces, 2016, 3, .	1.9	16
60	Tunable Atomic Layer Deposition into Ultra-High-Aspect-Ratio (>60000:1) Aerogel Monoliths Enabled by Transport Modeling. Chemistry of Materials, 2021, 33, 5572-5583.	3.2	16
61	Plasma-Enhanced Atomic Layer Deposition of p-Type Copper Oxide Semiconductors with Tunable Phase, Oxidation State, and Morphology. Journal of Physical Chemistry C, 2021, 125, 9383-9390.	1.5	15
62	Spatial Variation of Available Electronic Excitations within Individual Quantum Dots. Nano Letters, 2013, 13, 716-721.	4.5	13
63	Macroporous p-GaP Photocathodes Prepared by Anodic Etching and Atomic Layer Deposition Doping. ACS Applied Materials & Interfaces, 2016, 8, 16178-16185.	4.0	12
64	Subtractive patterning: High-resolution electrohydrodynamic jet printing with solvents. Applied Physics Letters, 2020, 117, .	1.5	11
65	Electrochemical Deposition of Metallic Nanowires as a Scanning Probe Tip. Journal of the Electrochemical Society, 2009, 156, D431.	1.3	7
66	Inkjet-defined site-selective (IDSS) growth for controllable production of in-plane and out-of-plane MoS2 device arrays. Nanoscale, 2020, 12, 16917-16927.	2.8	7
67	Durable Liquid- and Solid-Repellent Elastomeric Coatings Infused with Partially Crosslinked Lubricants. ACS Applied Materials & Interfaces, 2022, 14, 22466-22475.	4.0	7
68	Geometric Optimization of Bismuth Vanadate Coreâ€“Shell Nanowire Photoanodes using Atomic Layer Deposition. ACS Applied Materials & Interfaces, 2021, 13, 52063-52072.	4.0	6
69	Integrating Structural Colors with Additive Manufacturing Using Atomic Layer Deposition. ACS Applied Materials & Interfaces, 2022, 14, 31099-31108.	4.0	6
70	Transparent Refractory Aerogels for Efficient Spectral Control in Highâ€Temperature Solar Power Generation. Advanced Functional Materials, 0, , 2108774.	7.8	5
71	Sodium mechanics: Effects of temperature, strain rate, and grain rotation and implications for sodium metal batteries. Extreme Mechanics Letters, 2022, 52, 101644.	2.0	3
72	Atomic Layer Deposition of PbS-ZnS quantum wells for high-efficiency solar cells. , 2009, , .		2

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73	Electrically Conductive Kevlar Fibers and Polymer-Matrix Composites Enabled by Atomic Layer Deposition. ACS Applied Polymer Materials, 2021, 3, 5959-5968.	2.0	2
74	Mechanical Properties of Fibers Coated by Atomic Layer Deposition for Polymer-Matrix Composites with Enhanced Thermal and Ultraviolet Resistance. Minerals, Metals and Materials Series, 2020, , 1513-1527.	0.3	1
75	Scanning tunneling microscopy of quantum confinement effects in lead sulfide thin films. , 2009, , .		0
76	Energy Spotlight. ACS Energy Letters, 2021, 6, 2359-2361.	8.8	0